MCQs Answers
Short Questions
Long Questions

Technology in Language Teaching

(ENG 529)

Virtual University of Pakistan

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Outline for Technology in Language Teaching

Sr. No.	Topics
1.	**Introduction to Technology** 1. **Why technology** 2. **Benefits of learning technology** ❖ Instant Information ❖ Real communication 3. **A variety of different tools** ❖ Pedagogy Vs Technology
2.	**Technology in Language Learning** 4. **Technology in Language Learning** ❖ Technology in Education 5. **Technology in the Classroom** 6. **Technology Use in Language Education**
3.	**Technology in English Language Classroom** 7. **Technology as an Effective Tool for Language Learning** 8. **Use of Technology & Improvement of Language Teaching & Learner Learning** ❖ The Outcome Dependent on the Language Teacher's Use of Technology 9. **Application of Technology & a Changed English Classroom** ❖ Technology-embedded Classroom Develops Learners' Autonomy ❖ Use of Technology Develops Learners' Higher Order Thinking
4.	**Distance Language Teaching with Technology** 10. **Introduction: Defining the field** 11. **Technologies, tools, and learning environments** ▪ CMC-based environments ▪ Audiographic and videoconferencing environments ▪ Learning management systems ▪ Telecollaboration ▪ Web 2.0 tools 12. **Enquiry into pedagogical issues** ▪ Task design ▪ Assessment of learning ▪ Teacher expertise ❖ Research trajectories and a future agenda

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5.	**The Continuing Evolution of Virtual Worlds for Language Learning** ❖ Introduction **13. What are virtual worlds?** ❖ A brief history of VWs ❖ Overview and categorization of virtual worlds today **14. Categories of VWs** ▪ Age level ▪ Game level (low, mid, or high) ▪ Socialization level (low, mid, or high) ▪ Education focus (low, mid, or high) ▪ Technical requirements (low, mid, or high) **15. The future of VWs**
6.	**Authoring Language-Learning Courseware** **16. What is language courseware?** ❖ Personal computers and authoring tools ❖ Multimedia courseware ❖ Intelligent language tutors **17. Commercial courseware and open educational resources (OER)** **18. Web delivered courseware**
7.	**E-Books** **19. E-Books on the Internet** ❖ Early Internet E-book Projects **20. The World Wide Web and the Expansion of E-books** ❖ Commercial E-books on the Web ❖ Google Books ❖ Authors Bringing in new E-books **21. The Future of E-Books on the Internet**
8.	**Blended Language Learning** **22. Introduction to Blended Learning** **23. Blended learning: Definition** **24. Blended learning: Important considerations** ▪ Theoretical background in blended learning studies ▪ Effectiveness and value of blended learning ▪ Participants in blended instruction: Teachers ▪ Participants in blended instruction: Students
9.	**Designing Curriculums Around Technology** **25. Definition of Integrating Technology**

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	➢ Preparing for the Future ➢ Benefits of Technology in Educational Curriculum ➢ **Outcomes** ▪ More engaged students ▪ Simplified materials ▪ Increased motivation and better-developed collaboration skills ▪ Overall increased student achievement **26. Effective Technology for Successful Curriculum** ▪ Digital Books ▪ Classroom Clickers ▪ Interactive Whiteboards and Tablets E-instruction and Distance Learning
10.	**E-Assessment** Introduction **27. (e-)Assessment for Learning** ▪ Student-involved assessment ▪ Effective feedback ▪ (Self-) assessment skills **28. Assessment for learning issues** **29. Solutions and Recommendations**
11.	**Technologies for Teaching and Learning L2 Reading** **30. L2 Reading Theories** ➢ SLA theories and applications of technology to L2 reading **31. Technologies in use for teaching and learning of L2 reading** ➢ Self-developed and commercial courseware ▪ Self-developed courseware ▪ Commercial courseware ➢ Online activities with individual study tools and portable devices ▪ Dictionaries, glosses, and annotations ▪ Concordancing tools ▪ Reading-level classification tools ▪ Speech synthesis and speech recognition ▪ Mobile devices ➢ CMC technologies (Chat, Moo, email) **32. Challenges** **33. Future Directions**
12.	**Technology and L2 Writing** **34. Technologies for L2 writing** ➢ Web 2.0 applications ➢ Automated writing evaluation ▪ Criterion ▪ Turnitin

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	▪ Writing Pal or W-Pal **35. L2 writing and AWE** ❖ L2 writing and corpus-based technologies **36. Future research and development**
13.	**Technologies for Teaching and Learning L2 Listening** **37. Digital affordances and new listening contexts** **38. Technologies for listening** ▪ Digital Devices and Networks ▪ Content ▪ Controls and Help Options ▪ Operational ▪ Regulatory ▪ Compensatory ❖ Technology, listening, and SLA theory ❖ Technology-mediated listening: Research and practice **39. Current trends and future directions**
14.	**Technologies for Teaching and Learning L2 Speaking** **40. Theoretical frameworks** ▪ Sociocultural theory ▪ The Interactionist Hypothesis ▪ Autonomy and student agency ▪ Cognitive perspectives on speaking proficiency: Accuracy, complexity, and fluency **41. CALL pedagogical frameworks for speaking**: Task-based instruction (TBI) **42. CALL learning environments** ❖ Tutorial CALL and speaking **43. Feedback with tutorial CALL** ▪ Computer-assisted pronunciation training (CAPT) ▪ Asynchronous CALL storytelling ▪ Digital sound tools: Unleashing student creativity ▪ CMC
15.	**Technology-Enhanced SLA Research** **44. Defining SLA and SLA research** ▪ Cognitive approaches to SLA ▪ The interaction approach ▪ Sociocultural theory **45. Defining SLA-relevant research in computer-assisted Language learning (CALL)** ▪ Three SLA-relevant CALL studies ○ Cognitive approach ○ Interactionist approach ○ Sociocultural theory

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Lesson 1

Introduction to Technology

- Definition of Technology
- Why Technology
- Benefits of Learning Technology
- Source of Instant Information
- Real Communication
- A Variety of Different Tools
- Pedagogy Vs Technology

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Definition of Technology

According to Merriam-Webster, technology is defined as:

"The practical application of knowledge especially in a particular area" or "a manner of accomplishing a task especially using technical processes, methods, or knowledge" or "the specialized aspects of a particular field of endeavour."The last definition is especially pertinent to the field of education.

Why Technology?

We now live in a world in which technology permeates every aspect of our lives. Apart from its time- and labour-saving function, technology can also inspire creativity and bring new opportunities to people, connecting them to new ideas and people they otherwise might not have met.

In language teaching and learning, technology can be used for:

- Accessing information, including information about language
- Exposure to the target language
- Entertainment (i.e. reading/listening for pleasure)
- Creating text
- Publishing learner work
- Communicating and interacting with other language users/learners
- Creating community
- Managing and organizing learning (e.g. learning management systems, online vocabulary notebooks, etc.)
- Use of big data to explore any issue
- Explore digital content at the run time from all over the world
- Time-saving (Roberto Busa spent 27 years to accomplish a project, now it can be done in a few minutes.)

Benefits of Learning Technology

Many classroom teachers using technology have anecdotal evidence of their learners being motivated and engaged, and this is often a major reason for using learning technologies. There is also evidence that the use of technological tools empowers learners to transcend the traditional concept of the classroom (Drexler, 2010) and can lead to learners taking greater ownership of their learning (Terrell, 2011), especially through being actively involved together outside the classroom. Real language exposure has been transmitted to learners through technology.

Technology can be a highly engaging and interactive tool, providing a source of real language, both written and spoken, in the classroom, and motivating learners to produce more language than they otherwise might have done. More senses are involved in technology, so learning becomes durable and most penetrating into the slate of the brain.

Source of Instant Information

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The Internet, in particular, has become a social phenomenon that "pervades work, education, interpersonal communication" (Thorne, & Black, 2008), and having internet access in the classroom opens up learning to the real world, beyond the confines of the classroom.

For instance, the web can be an instant provider of information for the teacher, as it has fast become in the world outside the classroom. Rather than telling learners, you will give them the answer to a question later, you can look it up there and then. You can also show the learners how to use reference tools, such as dictionaries, concordancers, a thesaurus and phonemic charts. By helping them help themselves, you are promoting their autonomy, as learners and users. A teacher also has more choice with the Web-more ways to answer vocabulary questions, for example. As well as explaining something or providing a definition or translation, you can look for complete sentences, or show your learners a picture.

The Web is, of course, also a great source of listening. You can find video clips of people speaking countless varieties of English, as well as have access to songs, through sites such as YouTube. Apart from providing a large bank of authentic recordings, the Web allows you to personalize listening tasks and choose a video clip to complement something in the syllabus. The Web can also be used for learners who are particularly interested in a specific topic, or as a stimulus for speaking about a subject.

Real Communication

There has also been a clear shift in the role of the Internet, away from it being a huge resource library towards what has been called Web 2.0, where communication takes the lead, which has led to an increase in internet use. A Web 2.0 site allows users to interact and collaborate as creators of user-generated content in a virtual community.

Your learners can connect to other learners, or users of English, in real-time (synchronously), or at different times (asynchronously), thereby providing opportunities for authentic language practice (i.e. real communication), rather than the practice for practice's sake that usually takes place in the classroom.

A Variety of Different Tools

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All of this is not just about the internet. The proliferation of hand-held devices, such as mobile phones, digital cameras, tablets, mp3 players and voice recorders, have led to what, for some teachers, is a sometimes bewildering choice of potential activities and resources. Even if mobile phones are banned in your classroom or institution, you can use your own (most mobile phones support this) to record learners (using the voice recorder or video recorder), and if it is a smartphone, there is a rapidly increasing number of applications to be made use of to help you in class.

As the potential of these devices is realized, and more and more learners have access to them, teachers are beginning to experiment with using these tools. The use of mobile devices is expected to lead to language learning becoming more informal and personal (Chinnery, 2006; Kukulska- Hulme, & Shield, 2008), with many more learners studying or spractising with manageable chunks of language wherever they are. This revolution in mobile learning is happening both inside and outside the classroom.

Learners who are addicts of video games, they should be guided to play ESL video games to enhance their linguistic proficiencies. We share some ESL video games for learners:

- Phantasy Quest leaves you on a deserted island
- Sound Factory lets you play a musical factory
- Ketinetto 2
- The Ballard of Ketinetto 7
- Heart Of Tota
- Monster Basement This one is fairly scary,.
- Griswold The Goblin includes audio supported text and a lot of fun..
- The Ballad of Ketinetto
- Dr. Stanley's House 2″
- Inspector Kloo 4

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- Inspector Kloo 5
- The Ballad of Ketinetto 8
- Mild Escape is an “escape the room” game

Pedagogy vs. Technology

This increase in the availability of technology has led to an explosion of interest in its use in the language classroom. Despite the potential for new ways of learning, the trap that teachers can fall into is one of being seduced by the ‘wow factor’ of new technology, with pedagogy being pushed to the sidelines.

Moreover, as language classrooms become more technologized, there is a real danger of teachers developing Everest syndrome (Maddux, cited in Gallo, & Horton, 1994). Named after George Mallory’s reason for wanting to climb Mount Everest, this refers to a situation where teachers can be tempted to use a specific technology just ‘because it’s there.’ Care has to be taken; therefore, to make use of what we have available only when it serves the language aims of the lesson, and to avoid any use of ‘technology for technology’s sake.’

We share with you alist of tools and their academic purposes. Learners should use these tools for beter and advanced level of learning. Now the world is learning smartly, and we must opt latest technology in service of learning.

OVERALL RANKING	CHANGE FROM 2019	TOOL	CATEGORY
1	SAME	YouTube	web resource (videos)
2	UP 8	Zoom	video meeting platform
3	DOWN 1	Google Search	search engine
4	DOWN 1	PowerPoint	office tool / suite

5	UP 6	Microsoft Teams	collaboration platform
6	UP 1	Word	office tool / suite
7	DOWN 1	Google Docs & Drive	office suite | file sharing platform
8	DOWN 3	LinkedIn	social network / community
9	DOWN 5	Twitter	social network / community
10	UP 4	WhatsApp	chat tool
11	DOWN 3	Wikipedia	web resource
12	UP 6	Facebook	social network / community
13	UP 3	Excel	office tool / suite
14	DOWN 5	WordPress	blogging/website platform
15	UP 121	Google Classroom	learning platform / LMS
16	UP 77	Google Meet	video meeting platform
17	DOWN 5	Slack	collaboration platform
18	UP 16	Canva	content dev tool (graphics)
19	SAME	Skype	chat tool
20	UP 8	Trello	collaboration platform
21	DOWN 6	Feedly	news reader & alert tool
22	DOWN 9	LinkedIn Learning	online courses

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23	UP 7	Padlet	collaboration platform
24	DOWN 3	Kahoot	live engagement tool
25	DOWN 8	Dropbox	file sharing platform
26	UP 15	Mentimeter	live engagement tool
27	UP 19	Gmail	email tool
28	UP 20	Instagram	social network / community
29	DOWN 3	Google Forms	forms and survey tool
30	DOWN 10	Articulate	course authoring tool
31	DOWN 9	OneNote	digital notebook
32	UP 13	Google Translate	translation tool
33	UP 5	Outlook	email tool
34	UP 32	Vimeo	web resource (videos)
35	SAME	Google Chrome	web browser
36	UP 14	Moodle	learning platform/LMS
37	UP 40	Google Maps	productivity tool (mapping)
38	UP 34	Flipgrid	video meeting platform
39	UP 8	Prezi	office tool / suite
40	DOWN 16	TED Talks	web resource (videos)

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41	UP 14	OneDrive	file sharing platform
42	SAME	Easygenerator	course authoring tool
43	DOWN 20	Camtasia	content dev tool (screencasts)
44	DOWN 17	Snagit	content dev tool (screen capture)
45	UP 79	Whereby	video meeting platform
46	DOWN 21	Evernote	digital notebook
47	UP 23	Canvas	learning platform/LMS
48	DOWN 17	Pinterest	curation platform
49	UP 43	Screencast-O-matic	content dev tool (screencasts)
50	UP 6	Pocket	curation tool
51	UP 8	hihaho	content dev tool (interactive video)
52	UP 27	Wakelet	curation tool
53	UP 22	Vyond	content dev tool (animation)
54	DOWN 25	Udemy	online courses
55	UP 76	Google Sites	blogging/website platform
56	UP 8	Cisco Webex	video meeting platform
57	DOWN 4	Coursera	online courses
58	DOWN 25	SharePoint	collaboration platform
59	UP 32	Quizlet	games & testing tool

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60	UP 63	DeepL	translation tool
61	UP 10	Kindle	web resource (e-books)
62	UP 115	Quizizz	games & testing tool
63	DOWN 6	H5P	content dev tool (HTML5 content)
64	UP 77	aNewSpring	learning platform/LMS
65	DOWN 26	Google Scholar	web search engine
66	**NEW**	Mural	online whiteboard
67	DOWN 6	Audible	web resource (audio books)
68	DOWN 6	Poll Everywhere	live engagement tool
69	DOWN 15	Apple Podcasts	web resource (podcasts)
70	UP 11	Adobe Connect	video meeting platform
71	**NEW**	Netflix	web resource (documentaries)
72	DOWN 40	Diigo	content curation tool
73	DOWN 37	Yammer	collaboration platform
74	DOWN 9	Degreed	learning platform/LMS
75	**NEW**	Miro	online whiteboard
76	UP 6	Adobe Spark	content development tool (graphics)
77	DOWN 25	Blogger	blogging/website platform

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78	DOWN 38	iSpring	course authoring tool
79	DOWN 1	Grammarly	productivity tool (grammar checker)
80	UP 36	getAbstract	web resource (book summaries)
81	DOWN 7	Apple Keynote	office tool / suite
82	UP 68	Nearpod	lesson authoring tool
83	**NEW**	Spotify	web resource (podcasts & music)
84	**BACK**	MS PowerBI	data analytics & visualisation tool
85	UP 13	Google Workspace (prev G-Suite)	collaboration platform
86	**NEW**	Snip & Sketch	content dev tool (screenshots)
87	DOWN 14	Genially	content dev tool (graphics)
88	UP 31	Socrative	live engagement tool
89	UP 50	Google Alerts	news alert tool
90	DOWN 53	Adobe Captivate	course authoring tool
91	DOWN 33	Duolingo	language learning app
92	UP 34	Totara	learning platform/LMS
93	UP 17	Loom	content dev tool (screen recording)
94	DOWN 51	Tweetdeck	social network (Twitter dashboard)
95	UP 35	Blackboard Learn	learning platform/LMS

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96	DOWN 8	Adobe Acrobat Pro	content development tool (PDFs)
97	DOWN 21	Inoreader	news reader & alert tool
98	UP 27	Firefox	web browser
99	DOWN 16	Google Keep	digital notebook
100	DOWN 56	Adobe Photoshop	content dev tool (photo editing)
101	UP 21	Thinglink	content dev tool (interactive media)
102	UP 11	Jamboard	online whiteboard
103	DOWN 43	Workplace by Facebook	collaboration platform
104	DOWN 18	Adobe Premiere Pro	content dev tool (video)
105	DOWN 4	edX	online courses
106	DOWN 11	Adobe Illustrator	content dev tool (graphics)
107	UP 41	Screencastify	content dev tool (screencasts)
108	DOWN 9	Adobe After Effects	content dev tool (video)
109	**NEW**	Jitsi Meet	video meeting platform
110	UP 19	MS Stream	content dev (video streaming)
111	DOWN 14	Survey Monkey	forms & survey tool
112	DOWN 63	Audacity	content dev tool (audio/podcasts)
113	DOWN 9	Adobe Audition	content dev tool (audio/podcasts)

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114	**NEW**	Coggle	mind mapping tool
115	DOWN 64	Medium	blogging/website platform
116	UP 54	Freemind	mindmapping tool
117	UP 25	Big Blue Button	video meeting platform
118	UP 35	Apple iMovie	content development tool (videos)
119	DOWN 12	Quora	web resource (Q&A site)
120	**NEW**	WebinarGeek	video meeting platform
121	DOWN 58	Mindmeister	mindmapping tool
122	DOWN 16	MS Forms	forms & survey tool
123	DOWN 39	Stack Overflow	social network / community
124	**NEW**	ClickUp	collaboration platform
125	**BACK**	EdPuzzle	lesson authoring tool
126	DOWN 48	Adobe InDesign	content dev tool (interactive PDFs)
127	**BACK**	Blackboard Collaborate	video meeting platform
128	**NEW**	MS Whiteboard	online whiteboard
129	**BACK**	Wooclap	live engagement tool
130	DOWN 28	Plickers	live engagement tool
131	DOWN 23	Google Calendar	productivity tool (calendar)

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132	DOWN 43	Slideshare	web resource (slide sets)
133	DOWN 18	Udacity	online courses
134	UP 9	Mailchimp	email tool (newsletters etc)
135	DOWN 32	FutureLearn	online courses
136	UP 29	Omnigraffle	content dev tool (diagrams)
137	UP 26	DuckDuckGo	search engine
138	**BACK**	Asana	collaboration platform
139	DOWN 4	Lectora	course authoring tool
140	UP 43	Notability	digital notebook
141	DOWN 72	Anders Pink	curation platform
142	DOWN 48	Sway	content dev tool (presentations)
143	**NEW**	Ayoa	mindmapping tool
144	**NEW**	Apple Mail	email tool
145	DOWN 55	Flipboard	curation tool
146	DOWN 79	Powtoon	content dev tool (animation)
147	**NEW**	ilovepdf.com	content dev tool (PDFs)
148	UP 18	Apple Pages	office tool / suite
149	**NEW**	Factile	games & testing tool
150	DOWN 63	Unsplash	content dev tool (image library)

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151	DOWN 55	Biteable	content dev tool (video)
152	DOWN 67	isEazy	course authoring
153	DOWN 15	Blinkist	web resource (book summaries
154	**NEW**	Handbrake	content dev tool (video conversion)
155	**BACK**	Safari	web browser
156	DOWN 7	WeTransfer	file sharing platform
157	DOWN 20	Nuzzel	news alert tool
158	UP 20	Zotero	research tool
159	DOWN 13	Overcast	web resource (podcast player)
160	DOWN 42	Xing	social network / community
161	SAME	gomo Learning	course authoring tool
162	**NEW**	Hot Potatoes	games & testing tool
163	DOWN 6	Podcast Addict	web resources (podcast player)
164	DOWN 6	Highbrow	online courses
165	**NEW**	Google Lens	productivity (image recognition)
166	DOWN 39	Scoopit	curation tool
167	DOWN 67	Piktochart	content dev tool (infographics)
168	DOWN 12	Pluralsight	online course platform

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169	**NEW**	Apple Numbers	office tool / suite
170	DOWN 10	IFTTT	productivity (workflow automation)
171	DOWN 4	MS Edge	web browser
172	DOWN 1	Zapier	productivity (workflow automation)
173	DOWN 1	Bing	search engine
174	DOWN 23	Mind Tools	online course platform
175	DOWN 2	Khan Academy	online course platform
176	**NEW**	Google Arts & Culture	web resource (virtual visits)
177	**NEW**	MS Learn	online courses
178	DOWN 34	Evolve	course authoring tool
179	**NEW**	Gimkit	live engagement tool
180	**NEW**	Telegram	chat tool
181	**NEW**	Brave	web browser
182	DOWN 71	Pixabay	content dev tool (image library)
183	DOWN 55	Axonify	learning platform/LMS
184	UP 9	Google Analytics	web traffic analysis
185	UP 10	LearnDash	WordPress LMS plugin
186	**NEW**	OpenLearn	online courses

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187	**NEW**	Otter.ai	content dev tool (live transcription)
188	**NEW**	Google Currents	collaboration platform
189	**NEW**	MasterClass	online courses
190	**NEW**	MS Publisher	content development tool (DTP)
191	UP 5	Thinkific	learning platform/LMS
192	**NEW**	AskDelphi	learning platform/LMS
193	**NEW**	Drillster	learning platform/LMS
194	DOWN 12	Docebo	learning platform/LMS
195	DOWN 5	Adapt	course authoring tool
196	UP 4	Bluejeans	video meeting platform
197	DOWN 18	edCast	learning platform/LMS
198	DOWN 13	AnswerGarden	live engagement tool
199	**NEW**	Open edX	learning platform/LMS
200	**NEW**	GoBrunch	video meeting platform

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Lesson 2

Technology in Language Learning

- Technology in Language Learning
- Technology in Education
- Technology in the Classroom
- Technology Use in Language Education

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Technology in Language Learning

Technology in language learning has been in constant evolution since its genesis in the 1950s, in part due to attempts to keep up with the ongoing developments in computer technology. The development of technology in language education is also the result of the development of learning theories and pedagogical considerations. These tools are based on some theoretical underpinnings. Many terms and expressions have emerged, and different theoretical perspectives require different approaches to understand and define the concept.

The most widely used variant of technology in language learning is CALL (computer-assisted language learning). This term has been widely used to refer to the areas of technology and both second language teaching and learning despite frequent suggestions to revise the term (Chapelle, 2001). There are, of course, many other similar terms associated with technology use in language learning, for example, TELL (technology-enhanced language learning), WELL (web-enhanced language learning), CELL (computer-enhanced language learning), NBLT (network-based language teaching), and CMC (computer-mediated communication). We also see the use of ICT (information and communications technologies), e-learning and blended learning. In recent years, we have seen the popularity of MALL (Mobile Assisted Language Learning)/ mobile learning (m-learning) which brings 'mobility' into learning (Pegrum, 2014). Consequently, knowledge has become ubiquitous, and its quest should be continued in all activities of life, for instance, a person can listen to audiobooks while driving.

As practical tasks, learners should explore the following websites. They are replete with all language skills, learning and teaching resources. We found these sites very useful for ESL learners. We share some useful sites for learning the English language:

- British Council Teaching English
- Onestop English
- Zozanga.com
- Manythings.org
- Academia.edu
- Elt-resourceful
- Demand High ELT
- An A-Z of ELT
- 4Teachers.org (to integrate technology
- Abcteach educational offering 5000+ printable
- Breaking News English.com
- Dave's ESL Café
- Education Planet more than 100,000 resources
- Education World educational search engine
- Educator's Reference Desk: ESL Lesson Plans http://www.refdesk.com
- EduHound
- Edutopia
- Eduweb interact with material like video games
- English Firsthand: Teacher Resources

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- ESL Flow
- ESL Kids Stuff
- ESL Through Music
- SongsforTeaching
- Every Picture Tells a Story
- Everything ESL: Classroom Lesson Plans
- Google for Educators
- Interesting Things for ESL Students
- Havefunteaching.com
- Internet Picture Dictionary
- Larry Ferlazzo's Websites of the Day (award-winning website)
- Learn English
- National Capital Language Resource Center

Technology in Education

It would be fair to say, perhaps, that technology has changed our lives in every way, such as shopping, communicating, entertaining, teaching and learning, and even in the way we think. Most, if not all, teachers, educators and policymakers would support the use of technologies in enhancing learning. Computer technologies have for some time now played a significant role in improving education and reforming curricula across countries all over the world (Pelgrum, 2001; Kozma, & Anderson, 2002). Governments, education authorities and schools have all made major investments into providing schools with computer equipment (Pelgrum, 2001; Macaro, Handley, & Walter, 2012).

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Globally, technology integration into education is an important feature of the educational landscape. Countries like the US, Australia, Spain, Italy, Singapore, China, and UAE have taken major steps to equip their educational institutes with technology.

Apart from the policy and investment in technology use in education, it makes sense to use technology in teaching and learning, according to brain research experts (Tileston, 2000). For example, computers can promote visual, verbal, and kinesthetic learning and address different cognitive and psychological processes in learning by using multimodal materials. Later, it leads to multimodal analysis and multimodal learning material.

Technology in the Classroom

Joseph Hardin said, "Technology is affecting education in revolutionary ways, and the momentum toward these changes is irreversible." Technological change is redefining communication by leaps and bounds, but in turn, is also changing how educators need to teach. A significant viewpoint for all teachers is to consider that networking signifies not just an innovative toolset, but a novel environment for learning and teaching. New communication technologies encourage new possibilities and enlist an unlimited database of knowledge for students.

Technology Use in Language Education

Technology has been integrated into second language teaching and learning since the 1960s as a mechanical tutor to train repetitive language drills, the so-called drill-and-practice method. It is only since 2000 that computer technology has been largely used in reading, writing, literacy, and cultural awareness (Chapelle, 2003). With the development of multimedia computing and the Internet, technology is becoming a vital feature of second language classrooms and an important issue confronting second/foreign language teachers and researchers. For example, Chapelle (2003), as an applied linguist, asserts that 'technology-based language teaching and research is not a departure from applied linguistics. It is a continuation- the 21st century version of what applied linguists do'.

There are millions of English learners and the development of technology is embracing these learners. The advantage of the Internet is that it allows language to come to the learner,

rather than a learner having to go to a special place to learn the language. In institutional contexts, such as higher education sectors, secondary schools and primary schools, teachers face a generation who has grown up in an environment in which they are constantly exposed to computer-based technology; therefore, their methods of learning are different from those of previous generations. Determining how to teach the generation which has already integrated technology into their daily life is a challenge to the traditional teaching and learning philosophy. All these points suggest that language learning/teaching is embarking on a new trend, and it has become an urgent issue for teachers, applied linguists and learning theorists to think about how new technologies should be integrated and utilized in language learning.

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Lesson 3

Technology in English Language Classroom

- Technology as an Effective Tool for Language Learning
- Use of Technology & Improvement of Language Teaching & Learner Learning
- The Outcome Dependent on the Language Teacher's Use of Technology
- Application of Technology & a Changed English Classroom
- Technology-embedded Classroom Develops Learners' Autonomy
- Use of Technology Develops Learners' Higher Order Thinking

Technology as an Effective Tool for Language Learning

Technology is an effective tool for learners. Learners must use technology as a significant part of their learning process. Teachers should model the use of technology to support the curriculum so that learnerscan increase the true use of technology in learning their language skills (Costley, 2014; Murphy, DePasquale, & McNamara, 2003). Learners' cooperation can be increased through technology. Cooperation is one of the important tools for learning. Learners cooperatively work together to create tasks and learn from each other through reading their peers' work (Keser, Huseyin, & Ozdamli, 2011).

Use of Technology & Improvement of Language Teaching & Learner Learning

Bennett, Culp, Honey, Tally, and Spielvogel (2000) asserted that the use of computer technology led to the improvement of teachers' teaching and learners' learning in the classes. The use of computer technology helps teachers meet their learners' educational needs. According to Bransford, Brown, and Cocking (2000), the application of computer technology enables teachers and learners to make local and global societies that connect them with the people and expand opportunities for their learning.

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The Outcome's Dependency on the Language Teacher's Use of Technology

They continued that the positive effect of computer technology does not come automatically; it depends on how teachers use it in their language classrooms. According to

Susikaran (2013), basic changes have come in classes beside the teaching methods because the chalk and talk teaching method is not sufficient to effectively teach English. Raihan and Lock (2012) state that with a well-planned classroom setting, learners learn how to learn efficiently. Technology-enhanced teaching environment is more effective than lecture-based class. Teachers should find methods of applying technology as a useful learning instrument for their learners although they have not learnt technology and are not able to use it like a computer expert.

Application of Technology & a Changed English Classroom

The application of technology has considerably changed English teaching methods. It provides so many alternatives as making teaching interesting and more productive in terms of advancement (Patel, 2013). In traditional classrooms, teachers stand in front of learners and give lecture, explanation, and instruction through using blackboard or whiteboard. These methods must be changed concerning the development of technology. The usage of multimedia texts in classroom assists learners in become familiar with vocabulary and language structures. The application of multimedia also makes use of print texts, film, and internet to enhance learners' linguistic knowledge. The use of print, film, and internet gives learners the chance to collect information and offers them different materials for the analysis and interpretation of both language and contexts (Arifah, 2014).

Technology-embedded Classroom Develops Learners' Autonomy

Dawson, Cavanaugh, and Ritzhaupt (2008) and Pourhosein Gilakjani (2014) maintained that using technology can create a learning atmosphere centered around the learner rather than the teacher that in turn creates positive changes. They emphasized that by using computer technology, language class becomes an active place full of meaningful tasks where the learners are responsible for their learning. Drayton, Falk, Stroud, Hobbs, and Hammerman (2010)

argued that using computer technology indicates a true learning experience that enhances learners' responsibilities. Technology encourages learners to learn individually and to acquire responsible behaviors. The independent use of technologies gives learners self-direction.

Use of Technology and Development of Learners' Higher Order Thinking

According to Arifah (2014), the use of the internet increases learners' motivation. The use of film in teaching helps learners to realize the topic with enthusiasm and develop their knowledge. Learners can learn meaningfully when technology is used in the process of learning through using computers and the internet. When learners learn with technology, it assists them in developing their higher order thinking skills. It can be concluded that the true combination of multimedia and teaching methodology is very important to attract learners' attention towards English language learning.

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Lesson 4

Distance Language Teaching with Technology

- Introduction: Defining the field
- Technologies, Tools, and Learning Environments
  - CMC-based Environments
  - Audiographic and Videoconferencing Environments
  - Learning Management Systems
  - Telecollaboration
  - Web 2.0 Tools
- Enquiry into Pedagogical Issues
  - Task Design
  - Assessment of Learning
  - Teacher Expertise
- Research Trajectories and a Future Agenda

Introduction: Defining the field

The form and scale of technology-mediated distance language teaching has expanded markedly over the past two decades, with ongoing innovation providing access to increasingly rich language learning opportunities, for dispersed populations of learners. Language teaching at a distance is now geographically widespread around the world as a well-established means of extending access and opportunities to language learners in both public and private settings. Importantly too there has been a shift in the positioning of distance language programs from being regarded by many as a somewhat marginal enterprise, to being recognized as sites for technological and pedagogical innovation that extend the theory and practices of language teaching. Central to these developments has been an abiding concern to identify the distinctive

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nature and effectiveness of technology-mediated distance language teaching, together with advancing theory, research and practice to inform what a burgeoning domain of activity is.

Defining features of all these forms of distance language teaching are that teachers and learners are physically separated, that "the bulk of the learning takes place in non-co-presence" (Lamy 2013a, 144), and that technology is used to mediate the teaching-learning processes within the presence of an educational organization (distinguishing it from the private study). Distance language teaching has evolved largely in response to developments in technology, from early print-based courses, to educational radio and broadcast television, through to audio and videocassettes, and then to computer technologies, with further possibilities offered by interactive multimedia, Web 2.0 environments, and Second Life. Developments in technology-mediated distance language teaching mark a fundamental shift from early approaches concerned with the production and distribution of learning materials for independent study (including CD-ROMs, video-based courses, and broadcast education for example), to more contemporary approaches concerned with interaction, communication, collaboration and collective activity within virtual learning environments. Technology is no longer solely used for distribution purposes, as in broadcasting, and emphasis is now placed on opportunities for communication using both text and sound, as in the chat, and videoconferencing, meaning that distance language education can focus on communication and learning as a social process.

Importantly, too, the new learning environments offer opportunities for peer support, and for reflection on learning experiences in both private (with teachers) and shared (with peers) conversations online. Thus, emerging paradigms for distance language teaching have made possible different combinations of individual and collaborative language learning environments and called for not only technological innovation but pedagogical innovation. They introduced new expectations of what is required to work successfully in technology-mediated distance language learning environments for both learners and teachers. Earlier research using older technologies such as the telephone (Graham 2000) can acquire new significance with the introduction of accessible tools such as Skype; the value of those earlier studies often lies in the

rich accounts provided of pedagogical challenges, including for example attempts to make conversations more interactive.

Technologies, Tools, and Learning Environments

In distance language teaching while the terms technologies, tools, and learning environments are often used quite loosely, even interchangeably, technology is mostly used as a generic term encompassing, for example, digital technologies and mobile technologies; tools is more specific and is often used to mark a distinction between synchronous and asynchronous tools for example or to refer to specific devices such as the videoconferencing tool NetMeeting. The term learning environment can refer to managed learning environments such as Moodle but more often refers to the complex, local ecology of a course including not only specific tools and content but also constellations of learners, teachers, tasks and interactions, including over time. Blake (2009), in his review of technological applications for second language distance learning, traces advances in the field, concluding that "the profession will need to rethink current best teaching practices and integrate CALL advances fully into the language curriculum including DL options."

To conclude, the most influential technologies, tools, and environments in distance learning have been computer-mediated communication, audiographic and videoconferencing, the use of learning management systems, telecollaboration, and Web 2.0 tools.

- **CMC-based Environments**

  The advent of computer-mediated communication (CMC) opened up entirely new domains in distance language teaching, freeing students from the limitations of pre-determined curricula and materials, and introducing new options for learning through discussion and participation in collaborative environments. Importantly, for the first time distance language learners had the prospect of becoming more active agents in their learning: they could raise questions and participate in more open-ended, collaborative learning opportunities to complement the pre-determined course content. Crucially, isolation was no longer such a barrier, and students were able to connect with their peers,

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and, ideally, develop a sense of affiliation and community. Blake (2005), for example, describes CMC as the essential "glue" that holds students together in distance language learning, arguing that it not only engages them, but allows them to put to use the language they learned during the week, and contributes to maintaining motivation.

White (2003) makes a distinction between static course content and more fluid content which is most easily provided through the use of what are now multiple options for CMC, synchronous and asynchronous, in text, oral, and visual format. Chat, for example, has played a crucial role in providing interactive opportunities in distance language courses: Volle (2005), for example, details synchronous online oral tasks and online oral interviews incorporated into a course for distance learners of Spanish, which was then extended into desktop videoconferencing.

Asynchronous forums were among the earliest forms of CMC used in distance language teaching, with attention to ways in which reflection could be optimally combined with interaction in text‐based conferencing. Subsequently, both asynchronous and synchronous opportunities were used together as in the use of email and chat in an online distance writing course (Raskin 2001), at which point access to the opportunities needed to take account of time zones. A new issue was that of vicarious interaction, that is learners who preferred to read rather than contribute to online interactions. Importantly, this led to new understandings of the importance of social presence online, and the need to integrate computer‐mediated communication into the course curriculum and assessment.

CMC is important in distance language teaching not only as a learning tool but as a gateway to target language communities.

- **Audiographic and Videoconferencing Environments**

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In terms of synchronous conferencing, both audiographic and video conferencing have become crucial components in many distance language courses, providing opportunities for interaction and collaboration, as both the means and the objective of language learning. Videoconferencing, as Guichon (2010) argues, was originally designed for social communication and has been "diverted for pedagogical purposes", a comment that applies equally to the telephone, Skype, blogs and other technologies and tools. In providing face-to-face communication at a distance, videoconferencing has been seen as beneficial for the kinds of interactive opportunities it could provide distance language learners. Importantly too videoconferencing has been recognized as complementing the more established interactive opportunities provided within written online environments (synchronous and asynchronous). Several applications are available (including Adobe Connect, Blackboard Collaborate, Breeze, FlashMeeting, NetMeeting), and they combine different modes such as spoken and written language, and different kinds of access to graphic and visual systems. While early studies identified the benefits of videoconferencing, particularly relating to the affective factors of motivation and confidence, there was an evident need to ensure that task design was well supported by the affordances of the technology.

Both research and practice have focused not only on the affordances and constraints of task-based videoconferencing environments for distance language teaching but also the new demands they placed on language learners and teachers. The challenge for participants has been seen as one of "making meaning in multimodal virtual learning spaces" (Hampel and Hauck 2006), and the complexity of that challenge has been identified as one of developing multimodal literacy, which involves not only becoming familiar with the technology but then learning to "represent meaning in more than one mode at a time, understand each mode and how to use different modes constructively, while remaining aware of. … the affective demands of new media" (Hampel, & de los Arcos, 2013).

Identifying the skills teachers need to work within synchronous distance language teaching environments, has also been a focus of much research (Hampel and Stickler 2005; 138 Cynthia J. White Lamy and Hampel 2007; Wang, Chen, & Levy 2010). Guichon (2009), for

example, identifies the need for specific combinations of socioaffective skills (including to individualize the relationship with students), pedagogical skills that can be deployed in real-time, and multimedia skills. He extends this analysis in a detailed case study of language teachers new to synchronous online teaching, and to videoconferencing in particular. The focus is on language teaching activities, the difficulties experienced by teachers, and the strategies they use to overcome them. A further aim is to identify specifications for a desktop videoconferencing system designed specifically for language teaching. Based on the findings, Guichon refers to "the cognitive limitations met by teachers who had to manage several sub-tasks and deal with several channels almost simultaneously". Key functionalities which would help teachers were identified as relating to planning the online session, communicating more successfully, and keeping track of some of the learner language for later feedback.

- **Learning Management Systems (LMS)**

The expansion of technology‐mediated distance language teaching also required course developers and language teachers to make decisions concerning learning management systems (LMSs), also known as content management systems (CMSs) or virtual learning environments (VLEs). Doughty and Long (2003) were among the first to critique any prospect of the mass commercialization of distance language courses packaged into "ill‐fitting courseware management programs". The concern was that such systems were not created for language learning, with all the attendant limitations that imply. As they evolved, LMSs such as Moodle and Blackboard included a range of communication tools, both asynchronous and synchronous, thus potentially displacing some of the earlier concerns about a lack of opportunities for interaction or engagement with learner needs (Wang, &Chen, 2009). VU LMS is one of the best LMS systems in Pakistan. It synchronizes all academic and administrative activities at one platform.

- **Telecollaboration**

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While technology‐mediated distance language teaching has been concerned with providing opportunities for communication and interaction in the target language, access to those opportunities with native speakers has also remained an enduring ambition. Tudini (2013) argues that interactions which are moderated or mediated by a teacher "are likely to provide only limited preparation for naturalistic conversation outside of the classroom".

Tandem partnerships conducted by email were an early form of asynchronous bilingual exchanges incorporated into distance language courses providing access to authentic interactions with native speakers. Subsequently, telecollaborative exchanges which aim "to bring together language learners in different countries to carry out collaborative projects or undertake intercultural exchanges" (O'Dowd, & Ritter, 2006) were developed within distance language courses using increasingly rich environments (including Web 2.0 platforms such as blogs, wikis, YouTube, and Facebook).

- **Web 2.0 Tools**

More recently, online distance language environments have included, and, in some cases incorporated Web 2.0 tools, such as blogs and wikis. While joint authoring is a key functionality of wikis, the critical dimension of learner support in distance language teaching also needs to be addressed. Organizational aspects are a further challenge related to collaborative work in distance learning, particularly the time it takes for learners to come together and get the work underway.

The functionalities of blogs suggest that they could play an important role in distance language courses: they have an accessible interface and include opportunities to revisit, update, and comment on texts. However, the role of the teacher is critical in ensuring such tools are accepted and embedded within the way the course unfolds, as revealed by Comas-Quinn (2011), in her discussion of an upper-intermediate Spanish distance language course. While only 16% of the distance learners started a blog, for that small community of bloggers committed to

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posting and updating their blogs, it became an important tool for writing practice and a central element of their course. This finding aligns with White's (2003) argument that distance language learners can be seen as course producers, who actively construct their version of the course from the sources available to them, and according to their own learning needs and agendas.

Comas-Quinn (2011) noted that several teachers were reluctant to see "the pedagogic value of blogs and revision exercises that are not properly marked [by the teacher]." Further to this, they expressed resistance to the distributed nature of the learning spaces, arguing that they would prefer to have fewer places to moderate and that such a role could be assigned to an e-moderator as a facilitator of learning opportunities online, separate from the tutor.

The role(s) of teachers in distance language teaching has been an area of enduring debate, and contestation, and the introduction of new technologically mediated spaces tends to draw such debates to the surface once more.

Enquiry into Pedagogical Issues

Technology-mediated distance language learning environments entail quite dramatic shifts in pedagogies developed for more traditional settings, requiring both learners and teachers to rethink their practices. While much emphasis has been placed on technological innovation, pedagogical innovation has tended to lag further behind, though arguably this gap has begun to close as the field matures.

- **Task Design**

In the early forms of distance language teaching, there was a sustained interest in course design and ongoing evaluation of materials. Approaches were informed by principles in the wider distance education literature such as tutorials-in-print and the need to ensure the presence of a "teaching voice" within the course content (Holmberg, Shelley, and White 2005). Course design tended to be a lengthy, detailed process involving trialling of materials during the developmental stage, with ongoing attention to such features as learning goals, assessment, the rate of progress that could be expected, and opportunities for feedback on course work.

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It is important to emphasize that the consequences for flawed design in distance language teaching can be quite significant, impacting on learner motivation and persistence for example, as noted by Lamy (2013): "remote, isolated learners whose learning is impeded or halted by design issues cannot obtain immediate help, nor can the designers intervene swiftly to recast pedagogical orientations that have been explicitly described for the learners in the self-study materials already released to them." While it is now possible to update or revise elements of a course through virtual learning environments, such midstream changes can result in confusion or a negative impact on learner confidence and engagement. As knowledge of broader issues of course design has grown, the emphasis has shifted to task design, which remains an equally high-stakes activity. The prevailing focus has been on task design related to the affordances of particular online tools, the needs and preferences of learners, and the goals of specific learning events. And, as noted earlier, a central concern has been to provide optimal opportunities to develop interactive competence in the target language.

Technology-mediated environments provide the teacher and researcher with a view into the ways in which distance language tasks are interpreted, negotiated, and enacted by students, and by groups of students. This represents a quite dramatic departure from earlier forms of distance language teaching where the teacher was for the most part remote from the individual sites of student learning and had to rely on inferences about students' interpretation of tasks drawn from submitted course work. In technology education, there should be a sustained comparison made between task design and implementation with not only different learners but also different tutors; the aim should be to assist both teachers and course developers in enhancing task design in synchronous online settings.

- **Assessment of Learning**

A prevailing concern has been how to assess the learning gains of distance language students in ways that are appropriate for the learning setting. Currently, we do not have a well-developed philosophy of assessment in distance language teaching, and to date assessing the acquisition of the target language skills by distance language learners has been the focus of enquiry with two broad purposes: to investigate student gains in performance as a means of

establishing the effectiveness of distance language teaching environments and processes (Blake et al. 2008; Volle 2005) and/or as a means of assessing particular skills and providing feedback to learners on their progress. In the first category, early studies focused on assessing and documenting the development of oral skills in online distance environments

An important development in technology ‐ mediated assessment came with the increasing focus on tailoring assessment to match the kinds of interactive and collaborative opportunities integral to contemporary paradigms of distance language teaching. Hopkins (2010) reports on the use of FlashMeeting (which combines synchronous voice and text chat features, together with video, whiteboard, voting, file sharing, and other features) to develop and assess skills in real-time, interactive speaking tasks for English as a foreign language students at the University of Catalonia. The main part of the learning in distance language courses is not directly mediated by a teacher; rather it is the non ‐ co ‐ presence of the teacher into carefully scaffolded, assessed, small group speaking tasks Hopkins (2010).

- **Teacher Expertise**

The knowledge, skills, and expertise required to participate in technology ‐ mediated distance language learning (whether as a teacher, learner, moderator, assessor, course designer), has been explored from several perspectives.

One of the earliest accounts of practices in virtual language classrooms comes from Lamy and Goodfellow (1999a) as they focus on asynchronous conferencing to encourage reflective interaction among distance language learners of French in a project termed Lexica Online. The project aimed to encourage student reflection on their vocabulary learning strategies through group discussions which were moderated by tutors over six weeks. A significant feature of the study is that it analyzes the contributions of tutors and students in terms of message types and tutor styles, both of which are linked to student learning. Of the three text types, only “reflective conversations” (as opposed to monologues and social conversations) were identified as contributing significantly to language learning in that they were interactional “in both information processing ‐ and social ‐ interactional senses”. In terms of optimal tutor styles,

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Lamy and Goodfellow argue the need to attend to both cognitive and social dimensions of student participation and learning. Their work was part of a wider concern as to how to develop learner autonomy within collaborative online distance learning as a critical dimension of learner support.

Hampel (2009) identifies a key challenge in online distance synchronous settings as addressing the tendency for tutors to assume a more directive or teaching-centered approach than is congruent with the espoused benefits of learner-centered language teaching. It is evident that certain features of the setting may lead to this approach including student unfamiliarity with the online tools, technical problems, and the perceived need to direct students to the affordances of the environment. Importantly too Hampel notes that students often find it very difficult to collaborate, having been mostly used to the self-study aspects of distance language learning. Beyond these epistemological shifts in practices of distance language learning and teaching, Hampel identifies the critical importance of design in fostering interaction and collaboration online, referring to Mangenot and Nissen's (2006) framework: "A more learner-centered approach requires the ability on the part of the teacher to provide a setting in which learners can develop the socioaffective, sociocognitive and organizational skills that are prerequisites of collaboration. This can be facilitated by appropriate tasks, moderation and feedback."

These findings underline the importance of affective and organizational dimensions of engagement across all aspects of the role: students for example argued that for their points of contact with tutors were generally high stakes, and that distance language teaching thus requires more attention to interpersonal aspects and relationships, better organization and focus than was often required in other settings, and a degree of sensitivity and empathy towards the learner's individual context. Much research has focused on understanding distance teacher skills in different virtual settings and concerning specific task types (e.g., Comas-Quinn, de los Arcos, & Mardomingo, 2012;Ernest, Heiser, & Murphy, 2013), with a sustained focus on how to encourage interaction and collaboration, to maintain motivation and to ensure student retention and course completion. Important operational practices include setting up online socialization in multimodal learning environments, providing access to support and timely feedback, ensuring congruence between coursework and course assessment, providing spaces where students can

exchange ideas and get support concerning assessment, and generating a feeling of "belonging" to the course and to a learning community.

Conclusion

Technology-mediated distance language teaching is a mature field, yet questions remain about the role of technology and the quality of learning experiences, especially given the diversity of practices that come within the rubric of distance language teaching. While contemporary approaches to distance language teaching are based in social and collaborative virtual contexts, distance language programs around the world still vary considerably in terms of how they are designed, and then in terms of how they are used by instructors and learners, meaning again that the actual experience of distance language learning is highly varied.

While much work remains to be undertaken to shed more light on the processes and best practices of distance language learning and teaching, the research enterprise has been aided enormously by access to archival data from within virtual learning environments. To be of value, access to the situated practices of distance language learners and teachers in particular settings needs to be interpreted against a background of what we have long understood to be major challenges for the field: namely the need for ongoing attention to learner support that adds value to individual learning agendas, attention to the community, and affiliations within that, feedback on an individual and collective activity, and careful consideration of the affective aspects of distance language learning. In introducing new tools or opening up any new learning environments it is critical to consider questions relating to curricular articulation and assessed course components, given the constraints on distance language learners as they seek to adapt to particular learning environments and then learn to derive benefits from working within them.

Lesson 5

The Continuing Evolution of Virtual Worlds for Language Learning

- What are virtual worlds?
- A brief history of VWs
- Overview and categorization of virtual worlds today
- Categories of VWs
  - Age level
  - Game level (low, mid, or high)
  - Socialization level (low, mid, or high)
  - Education focus (low, mid, or high)
  - Technical requirements (low, mid, or high)
- The future of VWs

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What are Virtual Worlds?

While the basic concept of a virtual world has existed for some time, our modern concept of a VW is still a matter of some debate since their continuing evolution has led to refined definitions as well. While some might consider a massively multiplayer online role-play game (MMORPG) like World of Warcraft to be entirely different from a VW like Second Life, others see them as virtual cousins that share many of the same characteristics, with the key difference being that VWs are primarily considered as virtual environments that exist primarily for socializing or what Steinkuehler and Williams (2006) refer to as a "new third spaces" since they may provide virtual "spaces for social interactions and relationships beyond the workplace (or school) and home…"

Characteristics of a Virtual World (VW)

A VW can be defined as having the following characteristics:

• **Online 3D environment:** This may simulate the real world, or it may be wildly creative.

• **Avatars:** Avatars are the in-world representations of real people who control them.

• **Real-time interactivity:** VWs include the possibility of interacting with other avatars in the environment in real-time (synchronous communication), and usually with a range of objects in that VW.

• **24-hour accessibility**

• **Persistence:** When a user logs out of a VW, their avatar, and the actions taken by that avatar, are not deleted.

• **Social space:** Although VWs may vary in look and theme, all VWs are primarily social spaces that exist for the purpose of humans interacting via their avatars.

• **Numbers:** In most VWs there are many players (sometimes in the hundreds of thousands) online in the world at the same time.

• In many—though not all—VWs, users can also control their appearance (e.g., height, facial features, eye colour), gender, clothing, and even their species. In addition, many VWs allow users some control over their environment … (Sadler, 2012, 24–25).

A Brief History of VWs

Works by authors such as Vernor Vinge, William Gibson's Neuromancer in 1984, and Neal Stephenson's Snow Crash from 1992 took the computer technology that was beginning to develop and run with it fictionally. That work, in turn, inspired many of the virtual environments that exist online today.

The history of virtual worlds as they exist on computers and online may be traced back to the creation of the first text-based computer games, beginning with Colossal Cave Adventure

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(CCA) by Will Crowther in 1975–1976. This virtual text-based environment was based on the real-life Mammoth Cave system in Kentucky but included several fantasy-inspired components.

In 1978, Roy Trubshaw created a new game that was patterned on one of the variations of Zork that he called MUD. It first ran on the network of Essex University only, but in 1987 it became available on ARPANET (an ancestor of today's Internet), therefore becoming the first true multi-user online role-play environment. This game, which can still be found on the British Legends website http://www.british-legends.com, included the game elements that made its predecessors popular, but added human-to-human text-based communication and competition in the online environment. This meant that players no longer played solely against a computer, but against (or in support of) each other as well.

The evolution of MUDs led to the creation of MOOs (MUDs, Object-Oriented), with the first created by Stephen White in 1990. While these often looked almost identical to MUDs at first glance—still text-based environments that allowed for multiple users—they also integrated a new feature called object-oriented programming. This allowed for the owner of the MOO, typically called the wizard, to add elements such as a new room or items within a room (again, still text-based) without custom programming a new environment from scratch (a feature that may seem familiar to users of modern VWs like Second Life).

Educators soon discovered that these spaces had the potential for virtual classroom space, and the use of MOOs flourished in that area. Several universities, including the University of Arizona (the Old Pueblo MOO), had MOOs that instructors were able to use for virtual office hours or other educational activities.

While almost all MOOs have disappeared since that time, at the time of this printing the SchMOOze University MOO is still available for use by anyone:

http://schmooze.hunter.cuny.edu/

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Overview and Categorization of Virtual Worlds Today

One of the key questions that is surprisingly difficult to answer is exactly how many virtual worlds exist. One reason for this difficulty lies in the nebulous division between VWs and MMORPGs, as discussed earlier in this chapter.

Determining how many individuals are making use of VWs is also quite difficult. One reason for this difficulty is that VWs that publish user data typically only make available the number of registered accounts.

Categories of VWs

In the early days of VW development, the choices were quite limited, especially for those interested in their use for education. One of the first widely available VWs with a significant education component was Active Worlds (AWs), created in 1995 and still available today. AW included a significant Educational Universe component that, sadly, has largely faded away, as has the popularity of this world. However, there has recently been significant redevelopment in AW that may signal new development in this environment. More recently, as discussed above, the number of VWs has risen dramatically, which means that educators can choose from environments aimed at young children, teens, or adults, with multiple options at each level. Similar options exist for VWs ranging from those almost entirely focused on social interaction to those that blend into the universe of MMORPGs. Most VWs begin with details in five key areas:

• **Age level:** The specific age ranges recommended for the VW based on the information provided by the company. This may be in grade levels or age.

• **Game level (low, mid, or high):** A "pure" social environment would rarely be strongly game-like in nature. A MMORPG like World of Warcraft, on the other hand, may include social elements, but the primary goal of WoW is to gain talents, skills, and tools in order to complete quests.

• **Socialization level (low, mid, or high):** VWs are social spaces, but some are more social than others.

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• **Education focus (low, mid, or high):** Nearly all VWs have potential use for education. The key is in the way that they are used. VWs are a tool for teachers in the same way that PowerPoint can be a tool.

• **Technical requirements (low, mid, or high):** Some VWs are more graphics-intensive than others. Some require more brandwidth, or are more difficult to navigate.

Research on Virtual Worlds

In comparison to other forms of computer-mediated communication (CMC) such as email, message boards, and so on, research into the effect of VWs on language learning and teaching is relatively recent. Except research on Habitat, studies examining VWs have almost entirely been published after 2000.

Given the social nature of VW environments, it is not surprising that one theme shared by several VW studies is their ability to enhance collaboration amongst learners. A second major set of findings regarding VWs and language learning connects to the issue of anxiety. Some of this research found that the use of an avatar (essentially a masked persona for the user) helped learners to "loosen…up a bit…" (Love, Ross, and Wilhelm 2009) while they were able to experiment with new and powerful identities" (Shaffer, Squire, Halverson, & Gee, 2004).

Some researchers also discuss the power of VWs to expose learners to the real world via the virtual environment. While this may seem counterintuitive, it appears that students can become so immersed in the environment that the virtual and the real can become blurred positively.

The Future of VWs

If predictions of future technologies were accurate, contemporary humans would be travelling via personal air cars, with our work being done by groups of robots—made safe, of course, by Isaac Asimov's three laws of robotics as introduced in the short story Runaround in 1942Sadly, this is not the case, but near-future predictions about upcoming advances in VWs may be made with greater accuracy based on products currently under development.

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Over time, VWs have continued to advance, with massive changes in the quality of the graphics, user interfaces, and possibilities for communication.

However, there are many upcoming changes in these environments that will begin to shift them from being VWs to more fully developed artificial reality simulators (ARS). This begins the shift from a 3D environment on a computer screen to "the idea of immersion—using stereoscopy, gaze-tracking, and other technologies to create the illusion of being inside a computer-generated scene." (Rheingold, 1991)

Virtual worlds have grown from their text-based infancy of the 1970s to the 3D immersive environments of today. Educators and students now have a wide array of VWs available to them that can grant instant access to native speakers of a huge variety of languages who are located around the world. As these environments and their associated technologies continue to advance, they promise to change the ways that we understand both human-to-human interaction and what it means to be a student of language.

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Authoring Language-Learning Courseware

- What is language courseware?
- Personal computers and authoring tools
- Multimedia courseware
- Intelligent language tutors
- Commercial courseware and open educational resources (OER)
- Web-delivered courseware

What is Language Courseware?

Language courseware is generally understood to refer to software applications designed for language learning. Here language courseware will be interpreted broadly to include language-learning programs used for individual self-study or integrated into a teacher-led course of study, and running the gamut from simple single-skill activities to comprehensive online courses. With the rise of peer-to-peer interactions and social learning affordances through the internet, the function of the courseware has evolved from the role it played in the early days of computer-assisted language learning (CALL). Rather than being presented as a set of standalone, discrete exercises for enhancing a particular language skill, courseware today is typically integrated into an online learning environment. That is likely to be through a course website, using materials developed in house or provided by a publisher.

Increasingly, structured language-learning materials will be available to students online, whether the course is completely online, delivered in a hybrid/blended format, or taught face-to-face. With the rise of artificial intelligence (AI), have come sophisticated "intelligent language tutors" (ILT) which offer personally customized interactions between learner and computer. Today, language-learning software, including ILTs, is increasingly incorporated into a rich communicative environment delivered over the Web or through mobile apps.

Courseware at the Core of Early CALL

Language courseware goes back to the earliest days of CALL in the 1960s. The early experiments in developing computer-based language-learning software used workstations connected to a mainframe over a phone line. A considerable number of language-learning programs were developed and delivered by way of this setup through the Programmed Logic for Automatic Teaching Operations (PLATO) system at the University of Illinois, which began in 1960.

PLATO programs were created with the TUTOR programming language, specifically designed for education. It was developed so that actual language teachers would be able to create their exercises: "The notion was that instructors would wish to make their own PLATO lessons somewhat in the same way that they produced lecture notes, class handouts, and textbooks; hence, much emphasis was put on making TUTOR easy for the nonprogrammer" (Hart, 1995). PLATO was one of the first systems to be usable by non-experts. This has continued to be an important goal in CALL, to enable real teachers to create their language courseware, tailoring it to the needs of their students and their curriculum. Authoring in TUTOR for PLATO was relatively simple and intuitive, with a very basic instructional format, that came to be used predominantly in language courseware, namely question—response—feedback. PLATO exercises were largely text-based and focused on one particular skill, with assessment through multiple-choice or short answer format questions. The interactions focused on grammar and vocabulary development, although PLATO did have capabilities to display graphics (through a pneumatic tool to access a microfiche) and play audio (on mounted disks). The monitors used were surprisingly sophisticated, as they were touch-sensitive, thereby allowing the creation of exercises such as touching the screen to identify a designated vocabulary item in a picture or playing a concentration-style matching game. Many innovations came out of PLATO, including hierarchical menus, an organized help system, spelling/grammar checkers, and programmed review options (Hart, 1995).

Much of the pioneering work in developing software for language learning was done in the BASIC programming language, provided for free with most early microcomputers. There was a widespread view at the time that serious and effective computer-based language learning needed to be developed by teacher-programmers with a background in both language pedagogy

and computer programming. This was in part driven by the desire to move beyond the kind of drill and practice exercises typically seen in early CALL, as expressed by Underwood in 1984:

"It is ironic that at the same time our profession was discovering communicative methodology, which discouraged piecemeal morphological drill in favour of global practice, the CALL people were busy cutting language up into largely meaningless little pieces."

As it turned out, relatively few language instructors learned to program in BASIC or in other programming languages. For those who are able and willing to do so, the advantage is the full control over the design and functionality of the software created, as well as the ability to update and customize at will. The challenge in using BASIC or any other general programming language is that everything must be programmed by the developer, not just the content and logic, but also screen layout, file organization, and user guidance. In contrast, an authoring language specifically geared towards education, such as TUTOR, provides built-in help for courseware development, so that not everything need to be created from scratch.

One of the early authoring languages dedicated to CALL was Computer-Assisted Language Instruction System (CALIS, 1979), available for MS-DOS (Borchardt 1995). The creation and evolution of this authoring tool is similar to that followed by other systems of this era. CALIS started as a text-only program, with no graphics or multimedia. To create CALIS exercises, instructors used a text editor to create a script, which was run by the student in the CALIS program. Writing the scripts involved using the procedure employed in early word processors for entering formatting instructions, namely inserting words or symbols before and/or after a text string to indicate its programmatic role. This is familiar to anyone having written HTML code for the Web, as it uses the same convention. As is the case with other exercise creation tools, the author types in possible correct answers, entered on a new line starting with the plus sign, with other acceptable responses separated by a vertical bar. Anticipated wrong answers can be entered, by writing a new line starting with the minus sign. Following each line of correct or incorrect answers, the author could provide feedback.

Wildcard symbols and abbreviations can be used to describe particular patterns such as any sequence of text followed by a particular word. Student responses are parsed to check if they match any of the exact text or patterns which the author had included. The software then displays

the preprogrammed feedback to the user. An authoring tool such as CALIS, or similar tools such as Dasher or MacLang, allowed instructors to create their computer-based exercises with only minimal technical expertise (Otto, & Pusack, 2009). This enabled instructors to create learning materials tailored specifically to their needs, that is, using vocabulary, cultural information, or grammar structures that align with textbooks or with other curricular considerations. The fact that the CALIS script is in plain text-enabled easy sharing as well as potential portability to other systems (through a global find and replace). Such considerations are important in decision making about authoring options. Scripting is easier to learn and use than programming code. It is also more readable and portable in that programming code is tied closely to the syntax of the language used and is less easily imported into a new environment. Using a tool such as CALIS eliminates the need to write substantial computer code, but it also limits the functionality to what is enabled by the program creators. While not having to learn general programming is a major time-saver, using such a system could be quite cumbersome in that teachers need to enter correct and anticipated incorrect responses and, optimally, supply customized feedback for each.

The use of authoring languages still requires some coding on the part of the instructor. That is eliminated in template systems, which began to appear in the 1960s. These require the teacher to enter only the content of the item, (i.e., question, correct answer, feedback), not any sequencing or formatting code. The ClozeWrite tool from Fun with Texts, as did other similar programs, allowed free-form text entry, which was evaluated using pattern matching, that is comparing the user's answer to a pre-determined set of correct answers. In a technique used by several authoring systems, students were given feedback on their input through the representation of errors with symbols replacing letters, indicating the locations of errors or misspellings. While this kind of automatic pattern markup can be quite helpful in reducing the time and effort needed to generate feedback, there are several shortcomings to this approach (Pusack, 1983). While the software flags where the error is located in the student's answer, it does not explain the error or provides specific guidance for its correction. It also fails to distinguish trivial from significant errors.

Finally, this approach is good at finding morphological errors but is less useful in identifying other problems such as word order. The Tactical Language and Culture Training System, for example, designed for use by U.S. military personnel, offers a highly interactive

immersion experience that combines cultural information with practical language training (Johnson et al., 2004).

Personal Computers and Authoring Tools

Much of the early work in courseware development of the 1960s and 1970s was designed along similar lines to how drill exercises worked in language labs at the time, with a heavy emphasis on repetitive exercises focused on grammar and vocabulary, inspired by behavioural learning theories. There was also courseware developed for reading, featuring text annotations and comprehension questions. Listening comprehension and pronunciation exercises were limited due to a lack of hardware support. In fact, limitations in the capabilities of the computing environment at the time inhibited the widespread use of language-learning software.

Computer terminals, such as those used in PLATO, were quite expensive and, because they shared processing with other users of the connected mainframe computers, could at times be slow and unresponsive. The advent of personal computers in the 1980s brought about tremendous change in the computing environment and new opportunities for the development and use of language-learning software. Personal computers were relatively inexpensive and could be used without any network or mainframe connection. This changed significantly the development environment, with the prospect of language teachers having their office computers for teaching and research. In this decade teachers began to develop their courseware on PCs through the availability of authoring tools, such as HyperCard (1987).

Authoring tools provide more control than templates over aspects of an exercise such as formatting, feedback, and inclusion of optional items such as help screens. In contrast to authoring languages, authoring tools provide simplified methods for creating exercises with easy-to-use code and procedures for entering questions and feedback. Of course, in the process, they also sacrifice the greater control over presentation and program logic available through the use of an authoring language. Earlier authoring programs written originally for use on mainframe or minicomputers were ported over to the PC environment. From the multitude of computer platforms and operating systems through the 1980s, there was eventually industry consolidation around just two, MS-DOS/Windows from Microsoft and the Apple Macintosh. In the process, some programmers who had developed for other platforms were forced to either abandon their

projects or to re-create their work, which often meant learning a new programming language. This issue remains current, as developers— professional or casual—need to make decisions based on the anticipated longevity of hardware and software.

Just as word processors eventually did away with the necessity of entering formatting codes (special codes around items to designate print formatting), that development was paralleled in authoring tools. CALIS, for example, was ported to Microsoft Windows, becoming WinCALIS, and featuring a script editor, which eliminated the need to learn and write CALIS commands. WinCALIS also supported Unicode, a major factor in allowing courseware to be created for multiple writing systems. Much of the early work in CALL involved efforts to be able to display text written in non-Roman alphabets on computer displays. Another major addition with WinCALIS was the option to incorporate multimedia. The ability to incorporate sound and be able, with some confidence, to enable its playback on student computers, was a major development for language-learning courseware. Audio is important of course for developing listening comprehension, but it can also be used in multiple other ways, such as accompanying readings, audio feedback for computer drills, or pronunciation practice. The growing popularity of the Macintosh during the 1980s, at least in North America, was due in part to its built-in support for multimedia. Also supplied at this time free with every Macintosh computer was a general authoring tool used widely for the creation of language courseware, HyperCard. Authors of HyperCard programs created individual "pages" which could then be combined into "stacks," using a hypertext linking system familiar today from its use on the World Wide Web. It was possible to create HyperCard stacks without any scripting at all, by using icons and pull-down menus to incorporate buttons or other such elements, to add sound and other media, or to create links to other pages or elements on the screen. The text could be entered directly into a text box or copied and pasted from a text file. Advanced users could take advantage of the scripting language built into HyperCard, HyperTalk, to customize layout and functionality and to add more sophisticated interactions. The basic authoring requirements of HyperCard were at a low enough level that technically unsophisticated language teachers were able to create useful courseware. Some instructors who put time and effort into creating extensive HyperCard learning materials were able to make that work available commercially. Moreover, speech to text technology saved the human labour of typing. Now typing voluminous texts have become easier with Speechnotes.co tool which works only with Google chrome.

Written data can be saved in different places. One can access this tool from the link: https://speechnotes.co/

Multimedia Courseware

Most early language-learning software targeted a specific skill area, such as reading comprehension or grammar knowledge. With the ability to incorporate audio and video, new opportunities emerged for multimodal courseware. In the early days of CALL, the ability to create courseware incorporating audio was problematic, let alone using video. However, there were early courseware projects which incorporated video. Some of the first uses were developed at Brigham Young University. Through the development of courseware under the Time-shared Interactive Computer Controlled Information Television (TICCIT) project, which created an extensive set of language courseware, there was interest developed in the use of video for language learning (Hendricks, Bennion, &Larson, 1983).

To allow non-technical instructors to build their own multimedia applications incorporating authentic language materials, several template-based authoring systems for use of video were developed, including IconAuthor, MaxAuthor, and MALTED. One free tool for video annotation is ANVILL, which allows the importation of data from a variety of sources, including phonetics tools, such as the widely used PRAAT. This enables features such as accurate speech transcription. An important component of L2 video is the possibility of including transcriptions as well as L1 or L2 subtitles. Particularly useful is the ability for the viewer to switch at will among the different options.

One of the design choices made for that project was to provide an initial lockstep introduction to the program, which was intended to make sure users were familiar with all the features and functions of the program (Blake, 1999). This is a recurring issue in language courseware design, namely to ensure that users take advantage of the features included for assistance and further exploration, such as help screens, grammar references, dictionaries, or richer feedback options. It seems evident that learners taking the active steps to consult available help mechanisms may lead to deeper processing and therefore more likely language acquisition. That process can also be helpful in building metacognitive awareness in the learners of mechanics and strategies for language learning. Most multimedia projects necessitate a

development team, not a single individual. Needed are not just content experts, but also instructional designers, graphic artists, multimedia specialists, and programmers. The experience, time, and effort involved in such projects make them quite different from earlier projects which often involved work by a single teacher-programmer. In practice, most language-learning projects necessitate funding of some kind, whether that be provided by a grant agency, a university fund, or a commercial entity.

Intelligent Language Tutors

The need for funding applies as well, and perhaps even more, to projects for the development of intelligent language tutors (ILTs), which need the expertise of specialists in computational linguistics and artificial intelligence. ILTs use artificial intelligence to provide a more personal and individualized learning experience. Rather than general feedback or pattern responses, ILTs can provide more tailored feedback, often based not just on what the user has typed, but also drawn from a user profile. That profile may include information on the individual's previous work with the program as well as other data about the user, such as language background, the field of study, or principal area of interest in learning the target language.

Such programs are "intelligent" because they can analyze and evaluate text input by using built-in knowledge about the language to parse, or take apart, the utterance and analyze its form and meaning to determine its appropriateness, comprehensibility, and/or grammatical correctness (Heift, &Schulze, 2007). The program does this based on a language model or "expert system" as well as a language corpus, i.e., a large collection of texts in the target language. Advances in the field of artificial intelligence in recent years have resulted in much more successful natural language processing (NLP). Consumers today often encounter NLP, for example, in automated voice exchanges, where NLP is paired with automatic speech recognition, which has likewise improved tremendously.

The effort and resources required to build an ILT are such that it would be advantageous for these projects to be built cooperatively or to share resources or code. Most programs are built with computer languages commonly used in computational linguistics, namely Lisp and Prolog, along with those used on web servers, Java and Python, but they are normally built from scratch,

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resulting in quite different approaches and code bases. Designing the architecture of the ILT to be modular is a step towards interoperability and flexibility, allowing parts of the system to be turned off or on and to be updated individually. That makes it easier as well to add additional modules in the future. What would increase even more the versatility of ILTs would be the ability for non-programmers to modify the content. The Tutor Assistant is an authoring tool for ILTs which enables that functionality (Toole,Heift, 2002). Flexibility is important as well in providing options to accommodate as wide a range of learners as possible. That could mean providing different pathways for analytical learners who prefer a deductive approach (rules first) and for global learners, who learn better from an inductive method (examples first). When possible, providing different language choices for feedback and other help functions also makes the system more universally usable.

One of the better-known and successful ILTs is E-Tutor for German. Its structure is typical of an ILT in that it incorporates a language knowledge module that parses sentences to provide phrase descriptors and detailed error information, an analysis module, which generates possible responses and updates the student module, which dynamically evolves based on student performance. The nature, amount, and ordering of feedback is one of the most difficult issues that ILT developers face. Language learners will often make more than one error in a sentence so that the system must decide which errors to flag, in which order, and how much feedback to provide for each. Some errors may result from typos, and others may be grammatically incorrect but not critical to comprehensibility. Some systems will provide more detailed feedback to beginners while advanced learners get only a hint at the error.

One approach to user feedback is to have the system places errors into categories and automatically provide feedback on those judged most critical while giving the student the option to see or not feedback on others. Such decisions can be built into the system or be determined by the teacher or by the individual student, by setting defaults in the student module. E-Tutor features an “error priority queue” which ranks errors and is instructor adjustable (Heift, 2004). Another factor for authors to take into consideration in determining user feedback is how much metalinguistic information to provide, that is grammatical or linguistic explanations. Studies have shown that providing such feedback can be more effective than simple flagging of errors (Nagata, 1993) and that learner uptake from feedback is increased if the error is both explained

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and highlighted (Heift, 2004). That is likely to depend on the individual learner so that best practices in this area would seem to point to the importance of flexible feedback, which is at least in part under the user's control.

It is relatively easy to analyze learner input for grammatical and lexical errors. It is more difficult to evaluate and measure other aspects of the user's L2 such as complexity, fluency, and creativity. It is possible to compare an individual learner's input with similar utterances from a learner corpus, comparing sentence length or examining syntactical complexity. One of the other areas that could be examined is the use of collocations or idiomatic expressions, important indicators of lexical sophistication, so crucial for fluency and natural-sounding language output (Tschichold, 2003). An area of importance in second language acquisition is pragmatics, the use of language which is not just grammatically and lexically correct, but also situationally and culturally appropriate. Assessing user input from this perspective is quite difficult, as there are likely to be many different utterances that could be acceptable, and which would likely range from possible but improbable to highly idiomatic (Tschichold, 2003). Providing in the feedback to the user examples of pragmatically appropriate responses—even if the user's utterance is acceptable—may be advisable.

Practical Activity of Corpus:

Corpus must be inculcated in ELT classroom, and learners should be given an autonomous environment for learning and exploring English. Moreover, non-native TEFL teachers have limited linguistic variety. If they lead their students to various authentic corpora, learners can learn best in their respective fields, for instance, journalism students can explore News on the Web corpus and Time Magazine corpus. Mark Davies built the following corpora, and they are free to use by all and sundry. Students are advised to check the following corpora from the given link:

https://www.english-corpora.org/

The links below are for the online interface. But you can also download the corpora for use on your own computer.

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Corpus (online access)	**Download**	**# words**	**Dialect**	**Time period**	**Genre(s)**
iWeb: The Intelligent Web-based Corpus		14 **billion**	6 countries	2017	Web
News on the Web (NOW)		12.9 **billion+**	20 countries	2010-yesterday	Web: News
Global Web-Based English (GloWbE)		1.9 **billion**	20 countries	2012-13	Web (incl blogs)
Wikipedia Corpus		1.9 **billion**	(Various)	2014	Wikipedia
Corpus of Contemporary American English (COCA)		1.0 **billion**	American	1990-2019	Balanced
Coronavirus Corpus		1090 million+	20 countries	Jan 2020-yesterday	Web: News
Corpus of Historical American English (COHA)		475 million	American	1820-2019	Balanced
The TV Corpus		325 million	6 countries	1950-2018	TV shows
The Movie Corpus		200 million	6 countries	1930-2018	Movies
Corpus of American Soap Operas		100 million	American	2001-2012	TV shows
Hansard Corpus		1.6 **billion**	British	1803-2005	Parliament

Early English Books Online		755 million	British	1470s-1690s	(Various)
Corpus of US Supreme Court Opinions		130 million	American	1790s-present	Legal opinions
TIME Magazine Corpus		100 million	American	1923-2006	Magazine
British National Corpus (BNC) *		100 million	British	1980s-1993	Balanced
Strathy Corpus (Canada)		50 million	Canadian	1970s-2000s	Balanced
CORE Corpus		50 million	6 countries	2014	Web
From Google Books n-grams (compare)					
American English		155 billion	American	1500s-2000s	(Various)
British English		34 billion	British	1500s-2000	(Various)

In contrast to the proliferation of multimedia CD-ROMs for language learning, there have been relatively few publicly released ILTs. A good number of projects received preliminary funding to support a proof-of-concept prototype but were not able to fund final development to enable production versions. This is not surprising, given how difficult a task ILTs face, dealing with the complexity of human language and of second language acquisition. ILTs often are designed as research demonstration projects, rather than shareable or commercial products. There are relatively few reviews or studies of ILTs with the exception of those by the developers themselves. Developers of ILT tend to focus, as one would expect, on the functionality and effectiveness of the software, rather than on the user interface design. The user experience can be

quite different from that provided by commercial software. In particular, graphics and multimedia do not display the same high production values.

Commercial Courseware and Open Educational Resources (OER)

In recent years, language-learning software such as **Rosetta Stone** or **Tell Me More** has gained prominence (Nelson 2011). Although such products are sometimes used to provide the primary delivery system for language courses, they are more often used as supplements to classroom instruction or independently by learners in self-instructional contexts. Integrating such commercial software into instructed language learning can be problematic in terms of vocabulary, grammar sequencing, and cultural content. A commercial alternative to standalone software such as Rosetta Stone are the quite widely used electronic workbooks which many publishers are now supplying with basic language textbooks. WWW.duolingo.co is a great source to learn any foreign language. It starts with GTM (Grammar Translation Method), and afterwards, it shifts to the direct method. It is entirely free, and language learning has become a fun with audio visual aids.

Unfortunately, there have been a few studies on the effectiveness of publishers' electronic workbooks. The use of such resources, given the expense and comprehensiveness, is likely to mean that local resources are not developed in support of language instruction. That may not be an issue in some educational settings, but it is possible that curricular requirements or standardized testing may make it imperative to be able to modify materials to meet local needs.

Given the expense, limited access, and inflexibility of much commercial software, one of the recent developments in the creation of language courseware is the rise of shareable teaching and learning materials, often referred to as open educational resources (OER). These can range from quite simple and basic, such as vocabulary grammar drills created with tools such as Quia (a web-based exercise creator) to full-fledged courseware incorporating grammar tutorials, exercises, readings, dialogue, and multimedia.

The well-regarded language courses available from the BBC also are in this category, as are the variety of courseware from the Open Courseware Initiative. There are sites such as Merlot or LORO which act as OER aggregators and feature peer reviews of linked content. While smaller units of OER content, sometimes called "learning objects," can provide useful

learning content for teachers and students, they can sometimes be difficult to integrate into a specific course or curriculum (Friesen 2004). Some learning objects have rich metadata which provide information on provenance, targeted proficiency level/skill, and typical completion time (Meskill, & Anthony, 2007).

Web-Delivered Courseware

Most of what today is produced as OER is available as web-based resources. In fact, today, language courseware is overwhelmingly designed to be delivered over the internet. In the 1990s, most of that development was done in programming environments that were not native to web browsers namely Java and Flash and which necessitated the use of special browser plug-ins to run. Plug-ins are software components added to web browsers that enable special features or functionality. Several ILTs, including E-Tutor, are written in Java and designed to run in the Java plug-in as applets in a web browser. Flash has also been used extensively, for example, for the rich internet applications from the Center for Language Education and Research (CLEAR, Michigan State University). The use of Java and Flash enabled the kind of interactivity and media integration that at that time were not possible in the native web environment using HTML. Plug-ins, however, were not an ideal solution, as they tended to cause performance issues and also could not be fully integrated into web pages. Another early option to move beyond static webpages was server-based interactivity through CGI scripts, or common gateway interface, written in Java or Perl. This method however could be slow, as a new page had to be received from the Web server, and since the entire page was replaced, did not work well for designing interactive courseware. The arrival of JavaScript in the mid-1990s changed dramatically the nature of Web interactivity.

JavaScript (officially ECMAScript) is a scripting language that is incorporated into the source of the webpage, along with HTML and CSS (cascading style sheets). JavaScript is client-side code and is natively supported by Web browsers, which means that it runs efficiently and can be integrated into the Web page structure. What that means in practice is that a script can manipulate objects on the page, for example, showing a checkmark for the correct answer to a question and providing appropriate feedback.

JavaScript syntax and logic will seem familiar to anyone acquainted with earlier scripting languages such as those used in HyperCard or ToolBook. Since JavaScript is embedded into HTML, the source code used for a Web page can be viewed. This makes learning and borrowing much easier than in other development environments. Web browsers incorporate JavaScript debuggers, which enables code errors to be identified and rectified. As both HTML and JavaScript can be created with a basic text editor, this makes the development of interactive web pages more universally feasible than in environments requiring specialized authoring software.

JavaScript has evolved considerably since its origins, to the point at which web applications using JavaScript can be quite complex and sophisticated. One of the JavaScript techniques used frequently is to pull data from a server in the background, then use CSS to update on the fly information on the page, as requested by the user or in response to an action, such as answering a question. This technique, called AJAX for asynchronous JavaScript plus XML, enables the kind of transparent interactivity familiar from authoring tools such as Director. For language-learning software, this allows queries for information housed on a server, such as from a language corpus. That data will most likely be encoded in XML, extensible markup language, a more flexible and generic markup language than HTML. Maintaining program data in a standard, well-structured, open format such as XML is desirable to separate content from formatting. XML offers as well a significant chance to future-proof data, as its structure makes it easy to translate the data into different formats, such as JSON (JavaScript object notation), a lightweight data-exchange format of increasing popularity.

Authoring tools have been created which allow instructors to create exercises which take advantage of the power and flexibility of JavaScript. A tool frequently used by language teachers is Hot Potatoes, which features a wide variety of exercise types. Many language instructors in higher education are likely to be using a web-based course management system, usually called a learning management system (LMS) or virtual learning environment (VLE). These are server-based software tools that are quite useful for course management, including grade recording, assignment distribution and submission, and document archiving. They also provide a consistent and familiar interface to students, as they tend to be used widely across institutions where they have been adopted. As they are generic teaching tools, they do not offer specific language-learning activities. They do include options for creating a variety of exercises, although formats

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and feedback options are limited. Content or exercise creation in most LMS can mean that the content resides in a proprietary system, with limited options for export and reusability.

Moreover, by virtue of the extensive features and functions built into an LMS, the implicit message to instructors may be that this is the total of how the web can be used in teaching and learning, definitely a far cry from the real power and potential of that medium. Most LMS now allow plug-ins or integration of third-party applications, which can supply tools and functions important for language learning such as voice tools. The LMS which is most easily customizable for language learning is Moodle, which also has the advantage of being open source. Many of the external tools and services are increasingly integrated into an LMS through use of an interoperability standard and application program interface (API) called learning tools interoperability (LTI). The LTI-based integration of third-party tools, services, and repositories of learning objects or assessments supplements the built-in functionality of the LMS. This allows as well assessment data from the use of those resources to be sent to the LMS grade book.

The most recent version of the web authoring language, HTML 5, includes features that are important in language-learning applications including native playback for audio and video, enhanced graphics, and robust language support (Godwin-Jones 2014).

The video format allows playback without the need for a plug-in and therefore better integration into the other elements of the page. It also makes it easier, through WebVTT (video text tracks) to include a variety of subtitles and turn them off and on programmatically or at the request of the learner. One of the new elements associated with HTML5 is Canvas, a graphics rendering standard that uses scripting to draw and manipulate images. Form elements on the page (for user input such as text entry fields or radio buttons) can be easily tied to graphic representations using Canvas. Among other additions to HTML5 is a speech input field in forms and advanced text manipulations, such as Ruby annotations, important for some Asian languages. There are other features of HTML5 that make it a good candidate for the development of courseware. The stateless nature of Web pages (i.e., no data kept upon leaving a page) has traditionally been overcome through the use of browser “cookies,” which, however, have limited storage capacity and raise security and privacy issues. The new “Web storage” is more robust and reliable. In terms of interactivity, HTML5 allows any element of the page to be “draggable.”

It also includes support for parsing text with patterns (i.e., “regular expressions”). Since not all features are implemented at the same time in all browsers, it is advisable to use progressive enhancement in designing web apps, that is, assuring basic functionality in all browsers, while enabling more advanced features for supported browsers. This can be done automatically by using available JavaScript libraries.

A JavaScript library, such as the popular jQuery, is a set of pre-written JavaScript which allows for easier development of JavaScript-based applications. These libraries have become very popular with developers, as they make it easier and faster to create rich internet applications.

Using an open standard such as EPUB makes the content usable on a variety of platforms. It also offers some specific features of potential use in language learning. It supports the use of media overlays for creating synchronized audio, which matches up spoken and written texts. This is used heavily in e-books for children, but it clearly could be valuable in second-language learning as well. Media overlays also allow switching from one modality to another, for example, by starting to read at home and then switching to an audio mode in the car. EPUB 3 also offers robust support for non-Latin writing systems, including vertical writing and right to left page progression. Using HTML5 to deliver a web app makes content usable on mobile devices, through the built-in web browsers on smartphones and tablets. Many projects designed for mobile delivery use a proprietary development environment to produce native apps for the targeted platforms. This makes it easier to integrate with the device hardware, but it also means that separate code (using different programming languages) must be written for each platform. Increasingly, authoring tools are taking into consideration mobile users, making the content at last partially usable on phones and tablets. One of the directions holding a good deal of potential for language learning in the mobile space is the development of games. Projects such as Mentira, for example, leverage the capability of mobile devices to enable place-based interactions between students and native speakers. Mentira was created with the game authoring took Augmented Reality and Interactive Storytelling (ARIS), an open-source platform from the University of Wisconsin.

One of the challenges with games and other forms of informal language learning available today is integrating those experiences and the second-language development they

enable into formal learning settings. We seem likely to see in the future more courseware development along the lines of Mentira. The program has a focus on a particular area of linguistic competence of cultural significance—in this case, the use of pragmatics in

A collaborative learning environment is the normal context for the delivery of language courseware. The process of creating and delivering language-learning software has changed significantly since its beginnings in the 1960s. Today, developers are unlikely to be working independently creating discrete language-learning exercises for particular skills. Instead, most developers will be part of a team that includes subject experts, media specialists, and instructional designers. They will be taking advantage, to the extent possible, of pre-built frameworks for creating applications. The delivery system will inevitably be internet-based, using either the open web, a proprietary delivery system such as an LMS, or mobile-friendly apps. Delivery and record-keeping are likely to be cloud-based.

Courseware will continue to be integrated into a social learning environment with rich peer-to-peer collaborative functionality. The majority of language teachers are likely to continue to rely on commercial courseware, developed, and marketed in conjunction with textbooks.

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Lesson 7

E-Books

- E-Books on the Internet
- Early Internet E-book Projects
- The World Wide Web and the Expansion of E-books
- Commercial E-books on the Web
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E-books on the Internet

In modern times, e-books are finally coming of age. A recent Time magazine article highlights growing competition in the e-book reader market. The release of Apple's long-awaited iPad, with accompanying iBookstore and iBooks app, adds even more competition, with over 300,000 devices sold on the first day. Students should also learn technical aspects of the e-books, for example, they should download MobiReader, Winrar because some e-books require these softwares. As a practical task, students must explore the given link to download books from these sources. If users register themselves, they can download 10 books or articles in a day. This site is a reservoir for a bibliophile. Apart from books, it also gives free access to millions of research papers. Please visit this biggest online free library from this link: .https://z-lib.org/

These impressive statistics, the high-profile debate over the Google settlement, and recent popular interest in e-books are signs that they have become part of the public zeitgeist. Long before Amazon began selling books, before Google began scanning texts, and before publishers began to "embrace" e-books, thousands of e-books were available to be read and downloaded for free on the Internet. These e-book libraries were the creation of a relatively small but influential e-book community. This community-developed core philosophies concerning the preservation of digital e-books experimented with digitization processes and learned to cope with accelerating technological change.

Early Internet E-book Projects

The first Internet e-book was created in 1971. The project, aptly dubbed Project Gutenberg, was the brainchild of Michael S. Hart. Hart, then a student at the University of Illinois, founded Gutenberg on the premise of replicator technology. As Hart put it, "Once a book or any other item (including pictures, sounds, and even 3-D items) can be stored in a computer, then any number of copies can and will be available. Everyone in the world, or even not in this world (given satellite transmission), can have a copy of a book that has been entered into a computer" (Hart 1992). Hart accurately predicted the Internet's power as a syndication

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tool. Today the phenomenon is well documented, proven every time a music file is downloaded or a new viral video appears on YouTube. Hart chose the Declaration of Independence as the first document to digitize. Once the document was typed, Hart told his colleagues how to access the file, or sending the 5 kB file to everyone would have crashed the system; six people downloaded the file. Hart had proven his underlying premise. The Gutenberg Library was built slowly. You can browse through this link. https://www.gutenberg.org/ebooks/In August 1989, Project Gutenberg added its tenth book, the King James Bible. In January 1994, Project Gutenberg celebrated its one-hundredth book by publishing the complete works of William Shakespeare. In October 2003, with the addition of the Magna Carta, Gutenberg reached ten thousand volumes.

Today, the Project Gutenberg library contains thirty thousand free books contributed by "tens of thousands" of editors (Lebert 2005). These numbers may seem less when one considers the number of books in the Internet Archive or Google Books. Yet, for nearly four decades, two decades before the World Wide Web, Project Gutenberg has been in the forefront of e-book digitization and collections. Gutenberg first expressed a philosophical basis for Internet e-book collection development policies, in Hart's words "to make information, books and other materials available to the general public in forms a vast majority of the computers, programs and people can easily read, use, quote, and search" (Hart 1992).

Gutenberg's mission is elegantly simple: to "encourage the creation and distribution of e-books"; hence the texts are offered primarily in plain text to make the e-books as widely accessible as possible. Project Gutenberg was the first and, for some time, just about the only Internet e-book library. Eventually, other libraries went online.

Early Internet e-book creators faced substantial technical challenges. E-books had to be typed and progress was slow. Early e-book creators viewed one thousand or five thousand books as significant milestones—and they were. It took over twenty-five years for Project Gutenberg to complete its thousandth book: Dante's Inferno, added in August 1997. Scanner technology—originally developed in 1957—was not widely available, nor were optical character recognition systems, even though Intelligent Machines Research had introduced the first commercial OCR

systems in the 1950s. Eventually, scanners and OCR software would change the role of the early e-book creator from typist to editor/proofreader.

Sharing information on the early Internet was not easy. The Internet, advanced for its time, was still clunky. Download speeds were slow, and basic transfer protocols were in their earliest iterations. TC P/IP (Transmission Control Protocol/Internet Protocol) was developed in 1974, after Hart typed his first e-book. Computer use was not ubiquitous. The first Apple computer, the Apple I, was released in 1977, the first IBM PC in 1981. E-book audiences were small, limited to a handful of academics and scientists.

Early e-book creators faced the twin challenges of building collections and learning how best to use new digital technology. Despite these significant challenges, many of the early collections flourished and survive today.

The World Wide Web and the Expansion of E-books

Many of the technical issues faced by e-books creators were resolved with the advent of the Web, a natural platform for e-books that was far more user friendly than BITNET and previous TCP/IP and FTP platforms. With a viable platform in place and a potential audience of millions, academics, libraries, and enthusiasts jumped into digitization projects and the number of e-book libraries began to increase dramatically. An example of such a site is Renascence Editions, an online repository of works printed in English between the years 1477 and 1799. The site was founded in 1992 by Risa Bear, a staff member of the University of Oregon Libraries (which hosted the site) and an accomplished poetess with a passion for the literature of the period. From 1992 to 2005, Bear and her contributing editors published over 164 e-books on the Web, including works by Shakespeare, Francis Bacon, Mary Wollstonecraft, Edmund Spenser, and Jonathan Swift.

As these libraries grew, people with similar interests began to collaborate and share ideas. E-book communities began to emerge and libraries began to merge. The Luminarium was founded in 1996 by Anniina Jokinen. Initially, Jokinen created the site as a starting point for

students and enthusiasts of English literature. The site grew, adding links to similar sites such as Renascence Editions and eventually hosting content shared by colleagues. In essence, the owners of Internet e-book libraries began to do cooperative collection development, often with great success. The process was so easy as to be almost transparent: hyperlink to the other libraries. In June 1993, Lynn H. Nelson launched CARRIE, the first full-text history library on the Web. In a brief article titled "CARRIE: A Full-Text Online Library," Nelson gives a firsthand account of the site's launch, which he indicates was an immediate success. Within a month the site had approximately three thousand links to historical texts.

Despite its success, CARRI E was soon overtaken by other sites. As Nelson writes, "It was only two months until a new day dawned and colleges and universities throughout the country were scrambling to put up World Wide Web sites, and HNSource and CARRIE lost their uniqueness and were overshadowed by the well-funded and professionally staffed projects that began appearing." Libraries and well-funded projects such as the Library of Congress American Memory project, which grew from a pilot digitization project that ran from 1990 to 1994, were uniquely positioned to develop Internet e-book collections. Aside from their obvious expertise in information management and collection building, they also had the funding and staff necessary to meet the increasing demand for more books, better access models, and more advanced searching tools.

One of the best known of these collections was the University of Virginia Library's Etext Center, founded in 1992. E-book libraries of a similar scale, particularly Internet libraries that offer free e-books, are not common. One that has reached a similar size is the Internet Archive, launched in 1996. The Internet Archive offers "permanent access for researchers, historians, scholars, people with disabilities, and the general public to historical collections that exist in digital format" (www.archive.org). The archive's mission is rooted in the library/archive tradition. It is a visionary effort to create a historical record of a new medium, "to prevent the Internet—a new medium with major historical significance—and other 'born-digital' materials from disappearing into the past." "Born-digital" content included in the archive includes software, audio, video, and e-texts.

As of November 1, 2009, the Internet Archive's Text Collection contained 1,716,115 items. The largest collection, the American Libraries Collection, included 1,139,936 texts. Other collections are Canadian Libraries, 208,867 items; Universal Library, 70,200 items; and Project Gutenberg, 20,377 items. A list of contributors for the American Collection (www.archive.org/details/americana) shows the diverse institutions involved in digitizing books. Contributors include academic and public libraries, the Boston Library Consortium, Lyrasis, and CARLI, the Consortium of Academic and Research Libraries in Illinois. Corporate contributors include Microsoft, Yahoo! and the Sloan Foundation. Microsoft's contribution alone numbers 339,609 books from its defunct Microsoft Book Search.

The Internet Archive includes an open-source e-book reader. The reader is developed and maintained by volunteers. In a refreshing move, the Internet Archive has an open bug reporting system. Readers can report bugs, view a list of known issues, and even see who has been tasked with correcting each issue.

As a result of the combined efforts of all these individuals and institutions, a prodigious number of e-books are available on the Internet. The collections are as diverse as they are numerous. Aficionados of children's books have many sites to choose from: the International Children's Digital Library, Lookybook, Kids' Corner from Wired for Books, Children's Books Online: The Rosetta Project, Children's Literature from the Rare Book Room of the Library of Congress, and a scan of the Original Alice, by Lewis Carroll, in the British Museum's Turning the Pages collection. All these sites are easily found with a search engine.

The Internet also caters to more rarified tastes. Fans of H. P. Lovecraft can read all of his tales of horror at Dagonbytes.com. Readers curious about evolution can browse Darwin's complete works online at the Thackray Medal–winning Darwin Online. Classical music fans might be drawn to the Bavarian State Library's digital library of Felix Mendelssohn's writings. In short, there are many wonderful e-books collections on the Internet waiting to be discovered.

Commercial E-books on the Web

All of these efforts at e-book digitization served as a proof of concept for commercial publishers. Still, it was only after the successful transition from print to electronic journals

proved the viability and profitability of electronic publishing that publishers warmed to the idea of e-books. Even then, publishers faced several practical issues including digital rights management, the risk of e-book sales undercutting print sales, and finding a suitable electronic format and reader. Many of the early efforts to sell e-books were by aggregators who modelled their databases on commercial journal databases and marketed e-books to libraries.

NetLibrary launched the first e-book database for libraries in 1998. Modelled on journal databases, the platform coupled a discovery interface for finding e-books with a reader for viewing the full text of the e-book.NetLibrary's key innovation was allowing readers to search the full text of an entire e-book library at once. Once an e-book was open, readers could take notes electronically, add bookmarks, link to outside resources, and copy and paste the text. Reading from cover to cover was an option, of course, but the emphasis was on research use, similar conceptually to the periodical databases NetLibrary emulated. Within a few years, other e-book aggregators entered the market, including EBL, ebrary, MyiLibrary, and OverDrive. All these platforms offer similar base functionality, but each has its unique features as well.

As aggregators were marketing to libraries, other companies sought to break into the consumer market. The history of these efforts is often a study in mergers and acquisitions as opposed to selling e-books. In 1998, Peanut Press began selling e-books online. Peanut Press was subsequently renamed eReader, then after its purchase by Palm was renamed Palm Press.

In 2008, eReader (which had reverted to its earlier name after Palm spun the company off) was purchased by Fictionwise, an e-book company that had formed in 2000. Soon afterwards, March 5, 2009, Fictionwise was acquired by Barnes and Noble for $15.7 million. Barnes and Noble have parlayed this property and its other e-book holdings into one of the largest e-book stores on the Web, with over 500,000 books available. Individual publishers were a little slower in moving to e-books. The publishers that jumped in most quickly were those successful with e-journals. Notables include Springer and Elsevier, both of which added e-books to their respective proprietary platforms, SpringerLink and Science Direct.

The direct-to-consumer market began to open for publishers with the development of affordable e-book readers. Ultimately, Amazon's Kindle may have the same impact on e-books as Mosaic did on the Internet. The Kindle was not the first reader to market, but it has captured

public attention. Amazon, which offers over 350,000 e-books on its website, recently announced plans to sell the Kindle in over one hundred countries. Other companies are competing for the growing market. Sony recently partnered with Google to make over 500,000 books available online. Barnes and Noble unveiled a new e-book reader, the nook, in October 2009. The nook can store and play MP3 files, and it also allows readers to lend electronic books to friends. Apple introduced the iPad and corresponding iBooks app in April 2010. Asustek, the maker of Asus netbooks, will soon release its Eee Reader, and Samsung is set to release its Papyrus reader, already available in South Korea, in the United States. Major publishers now sell front-list e-books direct to consumers. HarperCollins, Random House, Macmillan, Simon and Schuster, and Penguin all offer e-books and downloadable audiobooks online. Learners should download audiobooks free of cost from the given link: https://www.learnoutloud.com/ . Books have been selected from different genres for instance travel, science, philosophy, business, education, politics, religion etc. Publishers are also adding free e-books to the Internet, often as part of promotional campaigns.

Graphic novel publishers are also getting into the mix. Every week, Marvel Comics offers fifteen free comic books to users who are not ready to subscribe to the Marvel online library, Digital Comics Online. This is a subscription service with over five thousand comics available, including classics like The Amazing Spiderman.

The availability of e-books on both noncommercial and commercial sites coupled with publishers' growing enthusiasm for the direct-to-consumer market is a strong indicator that e-books are reaching maturity on the Internet.

Google Books

Google's plan to make money from e-books is straightforward. First, digitize as many in-print and out-of-print books as possible, thus creating a massive e-book library. Next, when the inevitable lawsuits are filed, negotiate a settlement with industry associations that sanction your business model and establish a revenue-sharing model that heels your biggest threats. Finally,

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make gobs of money with your e-book storefront, print-on-demand services, e-book subscriptions to libraries, and advertising revenue. The more complex issue is whether Google's strategy is a good or a bad thing for anyone other than Google employees and the company's shareholders. In creating Google Books, Google has done an excellent job of building partnerships. Initially, Google partnered with publishers. Among the first to join in were Cambridge University Press, the University of Chicago Press, McGraw-Hill, Oxford University Press, Penguin, Springer, and Taylor and Francis. In December 2004, Google partnered with prominent libraries in launching the Google Print Library Project, subsequently renamed Google Books. Google sought to work with prominent libraries such as Harvard, the University of Michigan, the New York Public Library, Oxford, and Stanford. Eventually, other libraries joined in the effort, including the University of California, University Complutense of Madrid, and the University of Virginia.

It was the Google Books project—specifically the scanning of the libraries' books—that provoked a lawsuit by the American Publishers Association and the Authors Guild. At the heart of the lawsuit was the assertion that Google had violated copyright law by digitizing dozens of works without the copyright holders' permission. The lawsuit played itself out in a series of increasingly self-serving and tedious pronouncements by both Google and the APA.

In October 2008 they announced a settlement, detailing the key terms in a lengthy (some might say tedious) legal document. Google got the right to scan and display books. For books in copyright, rights holders have to opt in to have their material included; for out-of-print materials,

rights holders have to opt-out. Google retains 37% of the profits from sales of the texts; the remaining 63% is divided between the publishers and the authors.

The settlement also calls for the creation of a Book Rights Registry. The registry, a nonprofit institution, is to track sales and hold money in escrow for copyright holders until the funds are claimed.

One might be justified in thinking that perhaps the Google uproar is overdone. The Google Books project will make more books available to readers than ever before. Those books

will be easier to find and relatively inexpensive. There is also a built-in safety valve of sorts, for if the experience of the music industry has proven anything, it is that today's tech-savvy consumers will find alternatives to commercial sites if the price is too high or if the information is too restricted.

E-books and Authors

The e-book is still in the early stage of development as a medium. Now that e-book technology is reaching a level of advancement where it does not distract from the text, many writers are no longer content with simply replicating the print. Blogs are alive with discussions about multimedia e-books.Writers are experimenting with embedding video, audio, and animation in their work. More engaged authors have already begun to influence the form and the market.

In 2000, Stephen King released his novella **Riding the Bullet** exclusively as an e-book on the Internet. Scribner's servers were so busy that many people were unable to download the work. King had demonstrated that authors (well-known authors at least) could effectively use the Internet to publish their writing. On October 21, 2009, Scribner announced a $35 list price for the e-book edition of **Under the Dome**, Stephen King's latest epic. Evidently, King and Scribner are hoping to prove the point once more at a significantly higher price point.

King's **Riding the Bullet** was a conventional e-book (in terms of its technology, not the text) that was marketed unconventionally. As King was releasing his novella, other authors were working with the medium in less conventional ways. In 1999 the Kennedy Center and RealNetworks launched Storytime Online, a project aimed at using the Internet "to make the unique power and magic of children's books more accessible."

Each story featured audio of the authors reading their works combined with visual and textual accompaniment. Stories included Judith Viorst's Alexander and the Terrible, Horrible, No Good, Very Bad Day; Debbie Allen's Brothers of the Knight; and the poem Harlem by Walter Dean Myers. In merging audio, video, and text, the program demonstrated the e-book's potential as a multimedia medium.

The Screen Actors Guild took a similar approach with Storyline Online, which featured members of the Guild reading children's books, with accompanying text and video. Stories on the site include To Be a Drum, by Evelyn Coleman, read by James Earl Jones; My Rotten Redheaded Older Brother, by Patricia Polacco, read by Melissa Gilbert; The Polar Express, by Chris Van Allsburg, read by Lou Diamond Phillips; and Enemy Pie, by Derek Munson, read by Camryn Manheim. Sadly, at the time of this writing, a note had been posted on the site indicating that funding for the project had run out.

The concept of creating Internet e-books by merging text with Internet technology was taken to another level by writers participating in the Penguin Books project **We Tell Stories**. We Tell Stories features six different stories from six different authors told over a series of six weeks. Each story incorporates the Internet in the storytelling uniquely. For instance, Charles Cummings's **21 Steps** uses Google Maps to track the movements of the characters. Each chapter is accompanied by a map of the city of London indicating where the characters are standing. Toby Litt's Slice uses a weblog to tell its story. Litt encourages readers to e-mail the characters, and the characters send text messages through Twitter. Nicci French wrote her story **Your Place and Mine** live on the Internet while readers followed along.

Other Internet e-book projects have more of a retro feel. USAToday .com's Open Book series features original works of fiction published in weekly instalments, similar to serialized stories published in popular magazines. Although Open Book does not use the Internet as innovatively as We Tell Stories, it takes advantage of the Internet's strength as a syndication tool.

As writers continue to explore the medium, they will necessarily stake out a position in the ongoing debate about a standard file format for e-books. Indeed, they could conspire to render the notion of a single standard obsolete by working across formats as artists might work in a combination of inks, pastels, watercolours, and oils.

A significant change is not likely in the immediate future. Text will remain the most critical element in an e-book, as is appropriate. Moreover, the adoption of the EPUB standard, which supports multimedia functionality, will accommodate most writers' needs. Authors will be able to incorporate video or even soundtracks in their works. Authors/publishers will be able to

create so-called deluxe editions of books, just as movie studios have released director's cuts of movies and recording companies have included bonus tracks and video on CD reissues. Soon readers will be able to hear Dan Brown explaining obscure references in **The Lost Symbol** or J. K. Rowling's feelings on how sections of the Harry Potter books were adapted for the screen. Successive editions of books will be just as, if not more, desirable than the first edition. Readers will experience books in a very different way than they previously have.

E-books and Their Future on the Internet

The thirty-year history of the e-book on the Internet began with slow and steady development and then launched into accelerated progress. Early efforts focused on putting public domain, rare, and unique content online, in Michael Hart's words, "to make the full record of humanity as intellectually accessible as possible to every human being, regardless of linguistic or cultural background." As the commercial implications of Internet e-books became clear, aggregators and publishers joined in, focusing on the Internet as a market for frontlist titles. Authors became involved too, wrestling with the commercial implications of e-books while exploring them as a new medium. The interests of all those involved are largely complementary.

For instance, digital projects tend to focus on books that are out of copyright, and publishers are concerned about their catalogue. All want to promote e-books, even Google Books, which has caused the most legal commotion and disharmony to date.

Academics and enthusiasts will continue to create websites with free downloadable e-books. Authors will use the Internet as they explore e-books in their literary work. Consumers will make purchasing decisions based on costs (monetary and otherwise). If the costs are too high, independent-minded consumers will find ways to "liberate" e-books by harvesting and sharing the content.

Today more books are available for readers than ever before; they are also easier to access and less likely to go out of print. E-books are searchable, interactive, and less expensive (millions are free). Writers are exploring the e-book medium and are using it in novel ways. The future of the e-book, and the e-book on the Internet, has never looked brighter.

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Lesson 8

Blended Language Learning

- Introduction

- Blended learning: Definition
- Why adopt blended learning?
- Benefits of Blended Learning
- Five Important Considerations Before Adopting a Blended Approach
- Conclusion

Introduction

In the field of second language learning as well as general education, blended and hybrid learning is receiving a lot of attention. Researchers investigating blended learning tend to agree that "blended learning is a transformational force in education." According to Watson (2008), blended learning is "likely to emerge as the predominant model of the future and to become far more common than either [online or face - to - face instruction] alone"

Blended learning as an approach is not new. Indeed, the practice of combining different learning approaches and strategies is not new at all. Distance learning courses have long combined blended learning through a mix of self-access content-print/video/TV/radio-and face-to-face/telephone support.

'Traditional' courses have always combined a variety of delivery modes that combine content such as lectures, seminars, tutorials, workshops and group work to give learners a range of learning opportunities. And of course, 'good teachers will always use more than one method or approach in their teaching, and good learners will always combine different strategies in their learning.'

So we could say that the term 'blended learning' refers to every time teachers mix different media (e.g. print, audio, and video) with classroom interaction, maximizing authentic input to support learners' output and skills development. As such, blended learning has more or less always existed, although the term itself is a mere 15 years old at most, and is now understood to mean a rich, supportive learner-centred learning environment where the 'right blend' is synonymous with effective learning (and teaching).

What is new is that today, the technology combines all the different media within one environment: online. The online space facilitates learner-learner interaction, encourages incidental and exploratory learning and allows learners and teachers to stay connected outside the classroom, if they so wish. Learners can benefit from the fact that space and distance do not matter anymore. Teachers and educationalists are now understanding more and more that, with the 'right blend', teachers can offer a much richer, supportive learning environment, learning opportunities increase, learning becomes more effective and the learning process becomes more enjoyable.

Blended Learning: Definition

There are many definitions for blended learning, but they all have the following in common: they refer to two different learning environments — face-to-face (synchronous) and online (asynchronous); and they refer to combining those two learning environments in a complementary way to deliver a program of study so that learners can be supported both within the classroom environment and outside of it.

More specifically, Picciano (2009) describes blended classes as those where face - to - face and online activities are integrated in a planned, pedagogically valuable manner and where online activities replace a portion of face - to - face time. Both definitions include two main ingredients: online and face - to - face instructional modes.

In addition, some definitions include the amount of instruction in each mode. For example, the website Blended Learning Toolkit 2014 quotes the definition from the Online Learning Consortium (formerly the Sloan Consortium) which "defines blended learning as a course where 30 percent to 70 percent of the instruction is delivered online." From the range of definitions currently in use, Picciano aptly concludes, 'There is no generally accepted definition of blended learning' (2014).

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We could go further and say, 'It's in the blend!' That is, the key to a successful blended learning approach is to use the strengths of each medium appropriately, combining the two different learning environments in an integrated way so that each medium complements one another: the classroom environment being used for what it does best, such as introducing new topics, explaining important language points or for meaningful communicative activities, and the online environment being used for what it does best, such as preparing for the next topic (by watching a video/reading a text, etc.), and/or practising and consolidating what has been learnt in class or for extra practice. Both modes of delivery put the learner at the centre of the learning process.

Thus, the term 'blended' is used to mean combining different learning environments in an integrated way and appropriately and the stress is very much on 'learning' (not teaching) — either learning in the classroom with the teacher's help and support or learning online more independently or with peer support. As Marsh (2012) remarks, ‘Today blended learning can refer to any combination of different methods of learning, different learning environments, different learning styles. In short, the effective implementation of blended learning is essentially all about making the most of the learning opportunities and tools available to achieve the "optimal" learning environment.’

Why Adopt Blended Learning?

It is undeniable that the linguistic theories on language teaching and learning of the last 50 years, and their application in the classroom have influenced teachers worldwide. Most English language programs have communicative competence as one of their main objectives. Learners worldwide need English to communicate. Teachers worldwide are using (more or less successfully) the Communicative Approach to teach English. However, time in the classroom for

listening to learners, supporting them and helping them become communicatively competent is limited. Therefore, incorporating online mediums of education into traditional education makes learning more time effective.

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Benefits of Blended Learning

Teaching cannot be defined separately from learning. 'It is guiding and facilitating learning, enabling the learner to learn' (Brown, 2000). The role of a teacher is therefore multidimensional: it is to facilitate learning, to support learners through their learning journey, to know when to intervene (with suggestions, explanations, encouragements), and when to stand aside and observe. Today's learners are often said to breathe technology and this must be used to the full by the teacher because learning happens everywhere, not just in the classroom. This is particularly true in this digital age of ours (Dudeney, & Hockly, 2016).

Online learning provides learners with the ability to be both together and apart, and to be connected to a community of learners anytime and anywhere, without being bound by time, place or situation (Garrison and Kanuka, 2004). However, it should be noted that the online environment must be learner-driven and not technology-driven (Salaberry, 2001). Technologies, mobile or otherwise, can be instrumental in language learning. They are very powerful tools for the transmission and distribution of linguistic information (input) or, in other words, aids to communication rather than a means of instruction (Chinnery, 2006). An appropriate online environment must be conceived and developed to provide support to those learning online and thus must focus on learners' needs and use technology appropriately to support these needs (Colpaert, 2004).

When the online environment within a blended approach is used appropriately, it empowers learners, provides them with rich interactive input, gives them just-in-time support, helps them become independent learners and encourages learner discovery. When the classroom environment within a blended approach is used appropriately, it is an effective way for teachers to fulfil their multidimensional role. It gives teachers the possibility of giving more individual attention to learners, it maximizes social interaction in the classroom, and it facilitates teacher–learner communication outside the classroom. Research suggests that when online and face-to-face elements are combined, learners often place a greater value or emphasis on the face-to-face aspects of the experience (Graham, 2004). But teacher–learner communication does not stop

when learners leave the classroom; it continues outside the classroom environment. And with the right blend, the classroom time can be used to maximum effect.

Five Important Considerations Before Adopting a Blended Approach

1. Teacher Training

The first consideration is that teacher training is required. This will help with choosing an appropriate blend. When the classroom and online environment are used appropriately and effectively in a blended approach, this puts the learner at the centre of the learning process. Teachers must be trained to develop programs of study that take into account both the strong and weak points of each environment. This means that teachers must learn that every single input does not necessarily happen in the classroom. Teachers should also be aware that:

- People learn better when they can choose their path of study, as this is a great motivator.
- Listening is a key part of teaching and that listening happens best in the classroom environment.
- Taking more and more of a back seat in the classroom environment is a testament not only to their learners taking charge of their learning but also to the fact that they, the teachers, have developed a blend that is appropriate to the learners and which is helping them become effective communicators.
- Preparation time is front-loaded: most preparation is needed when leading up to the course, together with supporting learners at the beginning of the course.
- A blended approach represents a significant departure from a traditional approach. It represents a fundamental reconceptualization and reorganization of the teaching and learning dynamic. In this respect, no two blended learning designs are identical (Graham, 2004).

2. Choosing an Appropriate Blend

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The success of any blended learning course is largely in the blend. People tend to ask how much of the course should be online and how much of the course should be in the classroom. This is a fair question. But only teachers can answer such a question, as the answer lies in the needs and wishes of learners, the type of assessment requested by the institution and the institution's constraints, whether they be time allocation for a course, availability of human resources, physical/geographical conditions, etc.

A golden rule in developing any blended course-and indeed, learning courses in general-is to always start with the end in mind, i.e. the aims and objectives of the course, taking into account the institution's constraints. When devising a blended course, an important question that we must ask ourselves as teachers is how much time should be spent ideally in the classroom. Then it follows how much time will be spent online. Class contact time is usually dictated by the institution and is not therefore a moveable feast. However, online contact time can be as much or as little as necessary and is to a large extent decided by learners themselves. The particular blend will be dictated by looking at the language proficiency of our learners together with the language content and skills they must develop during their course. In other words, this will dictate what is best done online and should be done online, as well as what is best done in the classroom and should be done in the classroom, and therefore the number of hours to be spent in the respective environments.

Our priorities as teachers must always be to focus on the 'output' (learners' production of the second language). But for 'output' to happen, learners usually need 'input' (watching videos, listening to the audio, reading texts, being familiarized with authentic language, explanation of key language and concepts, etc.). We know that the 'output' (to a large extent, spoken output) is what all learners need and want. We also know that the (spoken) output usually happens within the social environment of the classroom. So teachers must maximize the time given to output in the classroom

environment without minimizing the time given to input (such as grammar explanation or clarification, pronunciation practice, etc.) in the classroom because teachers know that the

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better the input, the better the output. The beauty of any blended learning course is that the blend can be developed, adapted, changed, tweaked or refined at will, or whenever the paramount needs of the learners demand it. Choosing the right blend is a key part of the teacher's role.

Teachers must use the flexibility that blended learning grants them to design the course that best fits learners' needs and wishes whilst taking into account assessment requirements and institutional constraints.

3. Costs

The costs involved in blended learning must be considered as they might not be negligible, especially at the beginning of the process. Cost-effectiveness is a third major goal for blended learning systems. It is undeniable that these provide an opportunity for reaching a large, globally dispersed audience in a short period with consistent, semi-personal content delivery. Some researches have been undertaken in the corporate sector that shows that blended learning which is used effectively provides a large return on investment (Garrison & Kanuka, 2004). However, containing costs requires a fundamental shift in thinking. Rather than focus on how to provide more effective and efficient teaching, we must focus on how to produce more effective and efficient student learning. Once learning becomes the central focus, the important question is how best to use all available resources — teacher time and technology — to achieve certain learning objectives. Using all available resources most efficiently leads to reduced cost and improvement in student learning (Twigg, 2006).

4. Attrition and Motivation

An important element to consider when adopting a blended approach is student attrition and retention. Many students, when they are first introduced to e-learning, tend

to say that they are not 'being taught' and feel that not only have they been wasting their time but that teachers are not doing their job. There are two critical elements at play here:

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academic factors such as difficulty and/or relevance with course material and non-academic factors such as time pressure (Picciano, 2006). Concerning non-academic factors, blended learning (especially the online element) can address two of them: time pressure (in relation to when to learn) and space (where to learn). As for the academic factors, experience has shown that well-designed blended courses enhance student learning and increase student retention (Amaral, & Shank, 2010). Furthermore, any blended course requires self-discipline and motivation on the part of the learners.

However, one factor encouraging motivation in blended learning is reliance on discovery learning and self-directed learning, the type of skill base that is often lacking among such students (Huang & Zhou, 2003). It exists everywhere and is most prominent amongst students used to being taught, to receive instructions, to learning for exams. Another important factor regarding motivation is a cultural shift from teaching to learning, from being taught to learning on one's own with guidance (Prensky, 2007), which needs to take place when a blended course is adopted. This changing paradigm means that not only must the course aims and learning objectives be made transparent and meaningful to students, but also that students themselves must take more responsibility for their learning. Being more in control of one's learning is a great motivational driver. And finally in terms of motivational drivers, one should perhaps also look at local and cultural adaptation. One of the strengths of e-learning is the ability to rapidly distribute uniform learning materials. Yet there is often a need to customize the materials for a local audience to make them culturally relevant and locally meaningful, thus increasing motivation. By striking a balance between global and local interests and using face-to-face classroom interaction, teachers can play an important role in helping to make globally distributed materials locally and culturally relevant and meaningful (Jagannathan, 2004).

5. Peer Support

Peer support is an integral part of a blended approach, as teachers cannot be on hand to help learners all the time. Peer support is relevant in any learning environment,

but it is even more relevant in a blended approach because blended learning facilitates peer support. It is easier to ask one's peers a question online than in the classroom, whether for lack of time or fear of appearing stupid. Peer support fills gaps in other students' knowledge or understanding. It also encourages the sharing of ideas about how to learn. Helping and supporting peers (for example, those who missed sessions or were having difficulty understanding key concepts etc.) is a great motivator (Hughes, 2007). Another benefit of peer support is that students who answer their peers' questions develop not only their communication skills by using the language appropriately to explain key concepts, but also their social skills by using that language effectively. And finally, thanks to peer support, teachers find that they are not overwhelmed by individual requests for help and that when these do arise, they have the time to respond promptly.

Conclusion

Blended learning is an approach that takes into account different learning styles and combines different learning environments in a flexible, integrated and complementary way in order to help, support and enhance learners' diverse needs and provide a successful, efficient and enjoyable learning experience. Mixing different media, different modes of delivery and different instructional strategies is not a new approach, but the capabilities of today's technology can make a blended approach both easier and more meaningful for learners. Blended learning puts learners at the centre of the learning process, encouraging them to be more independent, and also helps teachers in their vital role of supporting learning.

Blended learning — if appropriately conceived, developed and delivered — can support any number of learners, anywhere and anytime; it can help managers use human and other resources in the most efficient way possible to give learners the best learning experience possible. It is satisfying to know that there is a growing body of evidence to support the view that blended learning can result in a better student learning experience, an improvement in learning outcomes, and greater student motivation, confidence and satisfaction, leading to learners becoming more independent learners and enjoying learning the language.

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Lesson 9

Designing Curriculum Around Technology

- Integrating Technology
- Curriculum Design
- Role of the Teacher
- Preparing for the Future
- Benefits of Using Technology in the Classroom
- Outcomes

- Digital Books
- Classroom Clickers
- Interactive Whiteboards and Tablets

Integrating Technology

The integration of technology should serve to guide, expand, and enhance learning objectives. It is understood that teachers and students do need to spend time learning the basics of using a computer. This is necessary to move to effectively integrating technology. Curriculum integration with the use of technology involves the infusion of technology as a tool to enhance learning in a content area or multidisciplinary setting. Technology enables students to learn in ways not previously possible. Effective integration of technology is achieved when students can select technology tools to help them obtain information promptly, analyze and synthesize the information, and present it professionally. The technology should become an integral part of how the classroom functions as accessible as all other classroom tools.

Curriculum Design

Curriculum design is a term used to describe the purposeful, deliberate, and systematic organization of curriculum within a class or course. In other words, it is a way for teachers to plan instruction. When teachers design a curriculum, they identify what will be done, who will do it, and what schedule to follow.

It is generally understood as a high-level process defining the learning to take place within a specific program of study, leading to a specific unit(s) of credit or qualification.

Teachers design each curriculum with a specific educational purpose in mind. The ultimate goal is to improve student learning, but there are other reasons to employ curriculum design as well. For example, designing a curriculum for middle school students with both elementary and high school curricula in mind helps to make sure that learning goals are aligned and complement each other from one stage to the next. If a middle school curriculum is designed without taking prior knowledge from elementary school or future learning in high school into account it can create real problems for the students.

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Role of the Teacher

Teaching English in the digital era is challenging as we deal with the technology development. In dealing with Y and Z generations who are digital natives, teachers are expected to be more technologically savvy as the incorporation of technology in the teaching and learning process is a prerequisite for supporting the digital natives.

It is obvious that if we expect teachers to integrate technology into the curriculum there needs to be a degree of familiarity with the computer. The question is how familiar? How much does a teacher need to know about computers to effectively integrate them into the curriculum? Teachers don't need to know how a computer works but rather how to use and apply a computer in the classroom. A simple analogy can be used when comparing a computer user to a person that operates a vehicle. In order to operate a vehicle, a driver does not need to understand how the engine of the vehicle works, how to repair the vehicle, or even know how to buy a vehicle. It is expected that the driver will know how to operate the vehicle on the road understanding road signs and expectations of drivers on the road. As the driver gains more experience driving, their confidence level increases as well as their skill on the road. When operating a computer, a basic level of knowledge is necessary to be successful. The user does not need to know how the computer works, how to repair the computer, or even know how to buy a computer. Over time

the user will become more experienced and confident with using a computer. Teachers should strive for two goals when integrating technology. The first goal is to become a computer-using teacher. It may be the producing materials to use in the classroom such as handouts, banners or newsletters. It may be using the computer to manage the students' marks or using a software program to strengthen a particular skill. The second goal is to make the computer a teaching partner rather than an object of study. "The instructional goals of computer-using teachers are in art, science, math, language arts, social studies, or other disciplines, not in computers." (Geisert, & Futrell, 1995).Teachers must have a clear understanding of what technology can and can't do in the classroom.

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Computers can help teachers and students find old information and new information from thousands of sites on the Internet that are updated daily. Computers enable students to view live, synchronous events happening almost anywhere in the world or from space (e.g. the current weather as seen from a satellite). Computers can be used to manipulate data so that students can grasp quickly how a change in one variable in a system affects other variables. Computers enable students to assemble and create new information. Computers enable students to have text, audio, and graphic information that they might not have access to in some less densely populated areas. Computers allow students to communicate with just about anyone, anywhere, and anytime. (Valmont and Wepner, 2000)

On the other side of the coin, computers cannot replace teachers. Valmont and Wepner quote in 2000:

"Contrary to the wisdom of the most fanatical technologists, computers do not think, initiate, or react the way teachers do. Although some people believe that information equals education, teachers know that understanding is not automatic with the acquisition or memorization of facts. Knowing how to apply information, how to use ideas in new ways, how to evaluate information, and how to extrapolate or go beyond basic information are important aspects of learning."

Teachers understand when the teachable moment is at hand and guide students' academic growth. The teacher facilitates learning and helps students transfer ideas to new learning

situations. Integrating technology isn't about using complex technology programs but rather simplifying technology choices and focusing on how technology connects to learning.

Preparing for the Future

Integrating technology into the curriculum is necessary to stay updated and take benefit of the latest technological advances happening around the globe. We must prepare our teachers and students for the digital future and one part of that means equipping them with technology. In

today's world and the future era, online education as well as the capability of using computers, laptops, tablets and the like are a must.

These 21st-century skills are essential to be successful in this day and age. Jobs that may not have had a digital component in the past may have one now. Education isn't just about memorizing facts and vocabulary words; it's about solving complex problems and collaborating with others in the workforce. Ed-tech in the classroom prepares students for their future and sets them up for this increasing digital economy.

Therefore, regardless of the field of education one belongs to, technology integration is a must for future preparation. The teachers and students who will be unable to do so will lag behind and would either be replaced by machines or forced to stay back.

Benefits of Using Technology in the Classroom

Improves Engagement

When technology is integrated into lessons, students are expected to be more interested in the subjects they are studying. Technology provides different opportunities to make learning more fun and enjoyable in terms of teaching the same things in new ways. For instance, delivering teaching through gamification, taking students on virtual field trips, and using other online learning resources. What is more, technology can encourage more active participation in the learning process which can be hard to achieve through a traditional lecture environment.

Improves Knowledge Retention

Students who are engaged and interested in things they are studying are expected to have better knowledge retention. As mentioned before, technology can help to encourage active participation in the classroom which also is a very important factor for increased knowledge retention. Different forms of technology can be used to experiment with and decide what works best for students in terms of retaining their knowledge.

Encourages Individual Learning

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No one learns the same way because of different learning styles and different abilities. Technology provides great opportunities for making learning more effective for everyone with different needs. For example, students can learn at their speed, review difficult concepts or skip ahead if they need to. What is more, technology can provide more opportunities for struggling or disabled students. Access to the Internet gives students access to a broad range of resources to conduct research in different ways, which in turn can increase the engagement.

Encourages Collaboration

Students can practice collaboration skills by getting involved in different online activities. For example, working on different projects by collaborating with others on forums or by sharing documents in their virtual learning environments. Technology can encourage collaboration with students in the same classroom, same school, and even with other classrooms around the world.

Students Can Learn Useful Life Skills

By using technology in the classroom, both teachers and students can develop skills essential for the 21st century. Students can gain the skills they will need to be successful in the future. Modern learning is about collaborating with others, solving complex problems, critical thinking, developing different forms of communication and leadership skills, and improving motivation and productivity. What is more, technology can help develop many practical skills, including creating presentations, learning to differentiate reliable from unreliable sources on the

Internet, maintaining proper online etiquette, and writing emails. These are very important skills that can be developed in the classroom.

Benefits for Teachers

With countless online resources, technology can help improve teaching. Teachers can use different apps or trusted online resources to enhance the traditional ways of teaching and to keep students more engaged. Virtual lesson plans, grading software and online assessments can help teachers save a lot time. This valuable time can be used for working with students who are

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struggling. What is more, having virtual learning environments in schools enhances collaboration and knowledge sharing between teachers.

Teachers can use lesson plans for their classrooms from these authentic websites.

- PBSlearningmedia.org 3,000 free lesson plans
- Unesco.org.pk lesson plans
- http://www.eslkidstuff.com
- Lesson plans etc http://www.edhelper.com/

- Time Magazine for Kids: Classroom Resources
- Esltower
- Esl galaxy
- Eslkidslab
- Esldepot
- Eslgold

Effective Technology for Successful Curriculum

- Digital Books
- Classroom Clickers
- Interactive Whiteboards and Tablets

Digital Books

Digital books or e-books are an effective technological tool for curriculum. Anything that makes life easier for people is attractive. E-Books are portable and convenient. With a supported eBook device, anyone can have a library at their fingertips. Carrying around one's favourite books on iPad, eReader, smartphone, or table is a lot easier than lugging around a thousand paperback books.

Classroom Clickers

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Current research describes the benefits of active learning approaches. Clickers, or student response systems, are a technology used to promote active learning. They take the guesswork out of teaching. A mix of software and hardware, clicker technology enables the teacher to collect and evaluate student answers to questions during class. It helps the teachers gauge student learning as it is happening and enables them to alter the lecture or classroom activities on the spot with clicker technology.

The risk of getting an answer wrong can lead many students to shy away from participating. But, with classroom clickers, young and mature learners are empowered to answer questions anonymously. Most research on the benefits of using clickers in the classroom has shown that students become engaged and enjoy using them.

Interactive Whiteboards and Tablets

Interactive whiteboards have brought significant improvements in the education sector by simplifying the learning processes. An interactive whiteboard (IWB) also commonly known as an Interactive board or Smart whiteboard is a large interactive display in the form of a whiteboard. It can either be a standalone touchscreen computer used independently to perform tasks and operations, or a connectable apparatus used as a touchpad to control computers from a projector.

Interactive whiteboards allow educators to take standard lessons and turn them into interactive activities. Students have a lot of fun while they learn. Interactive whiteboards allow students to interact with the learning material. They become a part of the lesson and can even teach each other. Their understanding of the subject is seen through touching, drawing, or writing on the board. Educational games can be played by entire classrooms. They also provide immediate feedback, so students and teachers can easily assess the student progress. Interactive whiteboards are clean and require very low maintenance. No chalk or markers or other writing utensils needed. Data is modified using a specialized pen for highlighting, drawing, and writing. Therefore there is no mess. No cleanup. It's just that easy.

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Various media types can be displayed on an interactive whiteboard. Whether photos, graphs, maps, illustrations, or videos, teachers have an abundance of options. They can create creative lessons to inspire their students. Students are more attentive in the classroom; their comprehension improves; test scores rise, and literacy increases. Students learn better and remember it. When students are engaged more in the classroom, learning always increases.

Outcomes

Integrating technology into the curriculum has the following outcomes:

- More engaged students
- Simplified materials
- Increased motivation and better-developed collaboration skills
- Overall increased student achievement due to increased involvement and learning at their own pace

Conclusion

Therefore, to sum up, we can say that integrating technology into the curriculum not only prepares teachers and students for a digital future, but it makes the process of learning much more collaborative, easier, and fun.

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Lesson 10

E-Assessment

- Definition of E-Assessment
- Introduction
- Different Forms of E-assessment
- Approaches for Providing Feedback in E-assessment

- Reasons for Using E-Assessment

Definition of E-Assessment

Electronic assessment, also known as e-assessment, online assessment, computer-assisted/mediated assessment and computer-based assessment, is the use of information technology in various forms of assessment such as educational assessment, health assessment, psychiatric assessment, and psychological assessment. This may utilize an online computer connected to a network. This definition embraces a wide range of student activities ranging from the use of a word processor to on-screen testing.

Introduction

E-assessment is becoming more widely used by exam awarding bodies, particularly those with multiple or international study centres and those that offer remote study courses.

Specific types of e-assessment include multiple-choice, online/electronic submission, to a peer-assessment exercise in which students are required to assess each other's work. Different types of online assessments contain elements of one or more of the following components, depending on the assessment's purpose: formative, diagnostic, or summative. Instant and detailed feedback may (or may not) be enabled.

In education assessment, large-scale examining bodies find the journey from traditional paper-based exam assessment to fully electronic assessment a long one. Practical considerations

such as having the necessary IT hardware to enable large numbers of student to sit an electronic examination at the same time, as well as the need to ensure a stringent level of security is among the concerns that need to resolve to accomplish this transition.

E-marking is one way that many exam assessments and awarding bodies, such as Cambridge International Examinations, are utilizing innovations in technology to expedite the marking of examinations. In some cases, e-marking can be combined with electronic

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examinations, whilst in other cases, students will still handwrite their exams with papers scanned in securely and uploaded into an e-marking system.

Different Forms of E-assessment

Some of the most widely-used forms of e-assessment are:

a. online tests, quizzes, and exams
b. e-submission and e-marking
c. self- and peer-assessment
d. student response systems

a. Tests, quizzes, and exams taken on a computer screen under the supervision of an invigilator are known as **online tests, quizzes, and exams**. The tests and exam questions are already created by the instructors and uploaded online at the university/college's website or canvas.

b. e-submission is the process by which a student submits work online for storage and retrieval by academic, administrative or other staff for marking, feedback, or review. This can also include originality checking to help identify plagiarism using Turnitin.

e-marking is the process by which staff provide marks and feedback to students online, which can include online annotations e.g. using Blackboard inline grading, annotated files e.g. using comments in Microsoft Word, audio, video, or the use of online forms.

c. Self-assessment means the process of having the learners critically reflect upon, record the progress of and perhaps suggest grades for, their learning.

The term **peer-assessment** refers to the process of having the learners critically reflect upon, and perhaps suggest grades for, the learning of their peers.

Reasons for Using Self- and Peer-assessment

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Self-assessment

- Encourage reflection
- Help lecturers focus their feedback (e.g. not telling students what they are already aware of)
- An important skill in itself – helping students become more autonomous learners

Peer assessment

- Students practice softer skills e.g. constructive criticism
- Help students learn from each other and place their work
- Students naturally compare themselves with their peers
- Encourage engagement with marking criteria
- Promote deep learning e.g. evaluation
- More efficient & timely feedback for large groups

d. A **student response system (SRS)** is a technology used in face-to-face teaching scenarios to facilitate interactivity, enhance feedback processes on multiple levels, and collect data from students. **TurningPoint** is a leading commercial student response system. It is quick and easy for novice users to introduce basic practices into their teaching, and there is an excellent range of advanced features for those wishing to do more.

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Approaches for Providing Feedback in E-assessment

Following are some approaches for providing feedback in online assessment:

- Provide digital feedback files e.g. standard feedback forms in Word format.
- Annotate work, for example using comments in Word or Adobe Reader. Upload annotated assignments back into Blackboard.
- Fill in an online feedback form (rubric), available in both Blackboard and Turnitin.

- Create audio or video/screencast feedback, and make this available to students via Blackboard.
- Annotate work directly in Blackboard or Turnitin.

Reasons for Using E-Assessment

E-Assessment covers a wide range of activities so can have a wide range of benefits. The advantages of e-assessment can include:

- Immediate feedback, tailored to help students improve their knowledge and performance
- Access for students in different geographical locations and at different times
- Sophisticated reporting, allowing you to refine the exercise or identify areas in which more instruction is needed
- Students undertake online tests many times to assess and re-assess their knowledge

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Lesson 11

Technologies for Teaching and Learning L2 Reading

- Introduction
- L2 Reading theories

- SLA theories and applications of technology to L2 reading
- Technologies in use for teaching and learning of L2 reading
- Self-developed and commercial courseware
- CMC technologies (Chat, Moo, email)
- Challenges
- Future directions

Introduction

With widespread access to reading resources and various forms of reading, the concept of reading nowadays may be different from what it once was. Online reading allows readers to interact in compelling ways with text and with others, but readers are at the same time being exposed to the danger of distractions or are overloaded by the volume of materials (Godwin-Jones 2010). This can be especially true for L2 learners reading in a language that they are not proficient in because they need support to overcome linguistic and processing practice limitations (Cobb, in press; Grabe 2014).

Simultaneously, many Web 2.0 tools and technologies are being designed and used for all levels of L2 learners to build certain skills for effective L2 reading. L2 educators play vital roles in helping students acquire the skills necessary to take advantage of new technological tools so they can actively participate in global communities (Gonglewski and Dubravac 2006). The objectives of this chapter are:

(1) To inform L2 teachers, researchers, and software designers of the theoretical grounding of applying technological innovations to the teaching of L2 reading

(2) To introduce the variety of technology applications to foster successful L2 reading

(3) To discuss the pitfalls and challenges of reading in the technology age

(4) To provide thoughts on future directions for applying technology to L2 reading development and the possibilities of cultivating ubiquitous, learner-centred, autonomous learning.

L2 Reading Theories

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Reading theories for both L1 and L2 have attempted to explain reading processes from three perspectives: structural, cognitive, and metacognitive. Structural perspectives are also referred to by researchers as the "bottom-up" (Chun and Plass 1997; Nunan 1991) or the "outside-in" (McCarthy 1999) views. They focus on the printed form of a text and postulate that meaning exists in the text and readers are passive recipients of the information.

According to this view, reading is primarily a matter of decoding a series of written symbols into their aural equivalents in the quest to make sense of the text. For successful decoding, readers need to acquire a set of hierarchically ordered sub-skills that sequentially help improve comprehension ability (LaBerge and Samuels 1985). This view, however, has been criticized as being inadequate due to overemphasis on the formal features of the language, mainly words and structure, and downplaying the significance of contextual comprehension factors.

The cognitive view brings the role of background knowledge into play and highlights the interactive nature of reading and the constructive aspects of comprehension. It is also referred to as the "top-down" model and was introduced to counteract the over-reliance on linguistic forms in the structural perspective of reading (Chun and Plass 1997; Nunan, 1991). From the cognitive view, reading is regarded as a psycholinguistic guessing game, a process in which readers sample the text, make hypotheses, confirm or reject them, make new hypotheses, and so forth (Goodman, 1967). Background knowledge and schema development are seen as crucial in cognitive inferencing through contextual cues and hypothesis testing (Smith 2004). Without complete background knowledge or appropriate schemata, readers encounter difficulties processing and

understanding the text because such knowledge is needed to interpret sensory data, retrieve information from memory, organize reading goals and sub-goals, allocate resources, and guide the flow of the processing system.

Contemporary models of metacognitive reading were proposed due to the tenuous affirmation of the roles for structural and cognitive language processing in reading development (Askildson, 2011; Carrell, & Grabe, 2002). Although the structural view over-relied on language

forms, a reader must know them to comprehend the text. The influence of background knowledge on reading comprehension also cannot be denied (Block 1992). Supporters of the metacognitive view regard reading as a process of active meaning construction during which readers make use of both linguistic information from the external printed text (Langer et al. 1990) as well as their internal background knowledge (Brantmeier 2003). In addition, skilful readers often use a set of flexible, adaptable metacognitive strategies to make sense of a text and monitor their ongoing understanding of the text (Dole, 2002). Metacognition involves being aware of what one is doing while reading (Block 1992). Strategic readers are capable of reflecting on their level of understanding and know what to do when reading difficulties occur. By using metacognitive strategies, readers are better at activating background knowledge, identifying and planning reading tasks, and monitoring their reading (Boulware-Gooden et al., 2007).

SLA Theories and Applications of Technology to L2 Reading

When reading is seen as a means for second language acquisition and technology is added, the L2 reading process becomes even more complex to conceptualize. Digital environments add visual and auditory features to a text and require the reader to integrate the information afforded by these modes into the processes of comprehension. Furthermore, with the interactivity provided by Web technologies, reading is supplemented by a social dimension of instantaneous connectedness not just with text but also with other people for exchanges and co-construction of understanding. To create and evaluate technology for language learning, computer-assisted language learning (CALL) developers and researchers have looked to second language acquisition (SLA) theories for support and guiding principles. Similar to reading theories, SLA theories have also gone through stages of transition. Although SLA approaches of the different stages provide distinct implications for CALL, cognitive, linguistic and psycholinguistic approaches have been most commonly adopted for the study of applications of technology to L2 reading (Chapelle, 2009; Chun, 2011a). More recently, as the Internet provides far-reaching and instantaneous interactivity, researchers and educators increasingly rely on sociocultural approaches.

The focus of cognitive theory on noticing, working memory, automatization of word recognition, and activating prior knowledge has provided theoretical bases for many studies examining how online or multimedia reading scaffolds, such as dictionaries, glosses, and annotation affect vocabulary learning and reading comprehension. For example, Schmidt's (1990) "noticing hypothesis" which maintains that attention is critical in the acquisition process of an L2 has provided the theoretical framework for exploring the effects of different types of multimedia glosses on text comprehension and vocabulary learning of computerized text (Hegelheime,Chapelle, 2000). Based on the noticing hypothesis, efforts have been made to compare reader performance in computerized and traditional paper-pencil glosses on vocabulary development, certain linguistic features, and comprehension (Bowles, 2004).

Mayer's (2005) cognitive theory of multimedia learning (CTML) has also been applied to L2 reading studies and to developing multimedia text for L2 reading. Based on three general cognitive science principles (i.e., the dual-channel assumption, the limited capacity assumption, and the active processing assumption), CTML postulates that meaningful learning occurs when students select suitable words and pictures, organize them into coherent pictorial and verbal models, and integrate them with each other and appropriate prior knowledge.

When information presented is similar to the learner's cognitive processes, the learner would have better information retention by storing it in long-term memory. An example of applying CTML to the design of multimedia materials for L2 reading is the study by Alkhasawneh et al. (2012), in which the researchers developed a multimedia text to increase students' abilities to comprehend the reading. In another study, Garrett-Rucks, Howles, and Lake (2015) examined the combined use of audiovisual features by 70 French language learners for the reading comprehension of L2 hypermedia text.

Metacognitive approaches also provide theoretical frameworks for understanding how new technologies might be changing L2 reading behaviours (Leu, 2002). Research has compared reading strategies used in text-based contexts and online environments (Genc, 2011), the strategies used by EFL learners (Omar, 2014), as well as by L1 and L2 learners during online reading (Taki, 2015). Studies are also exploring strategies and decision-making processes used as

L2 learners engage in online reading (Park, Yang, &Hsieh, 2014). As mobile devices become increasingly accessible, strategies used in mobile contexts are not left unexplored. Auer (2015) looks into the strategies employed by readers when using the functions afforded by tablets to support reading comprehension. The study by Fu et al. (2014) focused on the effects of reading strategy via e-book reading.

More recently sociocultural theories that posit mediation of understanding through cultural tools have been adopted by researchers to study technologies and L2 development. Different from the cognitive approaches that theorize language learning as process of acquiring grammatical forms in a specific predetermined order, sociocultural theories maintain that learning occurs in a sociocultural milieu in which learners are active constructors (Lantolf 2010; Rémi and Lawrence 2012). From the sociocultural point of view, reading is not a series of individualistic skills to be mastered. Rather, it is a social skill requiring active participation and interaction of learners involved. Implications of sociocultural perspectives for investigating technology use for L2 reading have not been sufficiently explored (Chun, 2011a). However, the use of Web technology for social-networking-based learning has led to an increased interest among researchers and CALL material developers to draw on these perspectives as the theoretical framework for their work. Studies have been conducted to understand how sociocultural backgrounds influence L2 learners' use of web-based tools for vocabulary learning, collaborative reading, reading comprehension, and so on (Gao, 2013; Juffs, & Friedline, 2014; Parisa, Mansoor, & Saeed, 2014).

A review of the theoretical bases of technological applications to L2 reading demonstrates that SLA perspectives have provided theory-based development and evaluation of both commercial and academic CALL materials for language teaching and learning, including

L2 reading. In the areas of vocabulary learning, reading comprehension, reading strategies, activation of background knowledge, motivation, and collaborative reading, they have fulfilled what Chapelle (2009) describes as the "pragmatic goal of marshalling professional knowledge in a manner that is useful for creating learning opportunities and demonstrating successful

learning." In turn, technologies are contributing to creating innovative approaches to teaching and learning as well as a means for developing materials for L2 reading.

Technologies in Use for Teaching and Learning of L2 Reading

The range and quantity of applications of new technologies for reading have grown rapidly. Selecting the appropriate one from an ever-expanding pool can be an overwhelming task for teachers. The processes of making decisions about which technology to use to teach targeted language skills and for specific pedagogical objectives can also be complicated.

In this section, the technologies most relevant to L2 reading are described. They include:

(1) self-developed course and commercial courseware

(2) online activities with individual tools and mobile devices

(3) CMC

(1) Self‐developed and Commercial Courseware

- **Self-developed Courseware**

Self-developed courseware is usually designed by collaborative teams to create language learning tools to suit a specific group of learners. It may involve several stages, components, or systems that are available online. Different modes of vocabulary annotation and multimedia glosses are often built-in to help learners increase vocabulary size and improve comprehension of text. The utilization of intelligent tutoring systems (ITSs) to provide immediate, customized instruction or feedback to learners is also increasing.

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A fair amount of self-developed courseware for teaching L2 reading has been used and its effectiveness has been documented. Studies have explored users' preferences for different types of annotations. Growing incorporation of intelligent tutoring systems (ITS) into self-developed courseware has been due to technological breakthroughs from the fields of computational

linguistics, information retrieval, cognitive science, artificial intelligence, and discourse processing. ITSs are designed to simulate a human tutor's behaviour and guidance. A well-designed ITS system provides users with convenient access to individualized practice, models good problem-solving approaches, and helps learners based on their learning rates and specific needs. Salomon, Globerson, and Guterman (1989) studied the effectiveness of their computerized reading tool, Reading Partner, and found students improved in metacognitive reconstruction, reading comprehension, and the quality of written essays. The technologies for creating an ITS have improved a great deal since then. A research team at Pennsylvania State University has developed a web-based ITS for improving learners' reading comprehension by presenting and training them to use the structure strategy to read (Wijekumar and Meyer, 2006). READ, developed by researchers at Carnegie Mellon University, provides reader specific lexical practice for reading comprehension (Brown, & Eskenazi, 2004). Some systems have been created specifically with L2 learners in mind. For example, in Taiwan,Tsai (2011) created multimedia courseware for EFL learners to improve English language proficiency through readings on world heritage sites.

- **Commercial Courseware**

Commercial courseware is ready-made, licensed, and sold by companies. It usually consists of a combination of lessons, activities, tests, and other relevant materials. One popular commercial courseware that was studied for its effectiveness for L2 learning of listening and reading is Longman English Online. While some educators can develop their courseware to meet the specific needs of their students, most of them have neither the time nor the technical support. The market for commercial language learning courseware is vast and expanding. More studies on evaluating commercial courseware would help teachers to choose those most appropriate so the institutional investment is not wasted.

(2) Online Activities with Individual Study Tools and Portable Devices

In Stockwell's (2007) view, online activities are different from "courseware," in that the former refers to smaller‐scale independent activities that are not part of a larger package. Many of these activities incorporate digital scaffolding tools, such as dictionaries, annotations, glosses,

concordances, reading ‐ level classification tools, speech synthesis/recognition technology, and mobile devices.

- **Dictionaries, Glosses, and Annotations**

The increasing availability of electronic corpora and online technology has facilitated the creation of tools that aim to support L2 reading by accelerating and automatizing word recognition.

Today one can easily access millions of word definitions, spellings, audio pronunciations, example sentences, and word origins free from publishers like Cambridge, Oxford, Macmillan, and Dictonary.com who have teams of experienced lexicographers to compile and continuously update the content of their dictionaries. There are also dictionaries created by individual enthusiasts, such as WordReference.com. Free web ‐ based document annotation tools are also available, for example, Annotate.com allows users to add notes and tags to their text and images. Similar Web annotation tools that allow users to modify data from a Web resource without modifying the original Web page include Diigo, Bounce, Corcodoc, Markup.i0, and so on.

A great majority of studies dealing with technology or CALL for L2 reading have focused on teaching and learning L2 vocabulary. This is no surprise since knowing vocabulary is key to learning to read and comprehend just as exposure to texts containing key vocabulary is necessary for learning vocabulary. The use of electronic dictionaries, text ‐ based glosses, as well as annotations and multimedia glosses has been extensively researched since they appeared in the late 1990s (Chun, 2011).

In recent years, as NLP tools and resources have become more versatile, vocabulary learning tools are increasingly adaptive to learner control and needs. The SmartReader designed by Oflazer, Kemal, and Mitamura (2013) allows users to either choose a text from the system's library or upload a document of their own to create intelligent e ‐ books. The vocabulary learning tool MyVLS ‐ Reader was specifically designed by Hsu and Ou Yang (2013) for

university students majoring in science and technology and also provides multiple learning choices for its users.

- **Concordancing Tools**

A concordancer is a corpus analysis tool that extracts instances of a given word from a corpus, database, or the Internet and then presents to the user a list of the occurrences of the word, part of the word, or combinations of words, together with their contexts, from a corpus of texts. The development of corpus analysis software and computer networking makes it easier for learners to access free online concordances. Tom Cobb's (2015) LEXTUTOR and William Fletcher's (2015) Phrases in English are two sophisticated websites with concordancing tools freely available to users.

- **Reading-level Classification Tools**

Though based on the same belief that vocabulary knowledge is the foundation to reading comprehension, reading‐level classification tools work from a different angle. They take the approach of modifying texts so readers understand them better. Supporters of text simplification uphold that linguistic modifications increase text comprehensibility and subsequently facilitate readers' abilities to interact with and comprehend a text (Allen, & Widdowson, 1979; Goodman, & Freeman, 1993; Long and Ross, 1993).

- **Speech Synthesis and Speech Recognition**

Text‐to‐Speech (TTS) is the process of synthesizing natural-sounding speech from text via computer programs. Speech synthesis technology has been around since the 1960s and the tools applying the technology are now quite accessible. Many of them are freely available (e.g., Speak Selection, Screen Reader, Natural Reader) but some are commercial (e.g., Text Reader, Voice Dream Reader). Google Chrome also provides free TTS tools to support teaching and learning of reading (e.g., Select and Speak, SpeakIt!, Reading & Write for Google). Some

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TTS applications are created specifically for L2 learning. Voki, created by Oddcast, allows users to create their talking avatar, speaking different accents. They can even be emailed, embedded on websites, or shared on social media. Teachers can use its classroom management system to assign students classwork. TTS tools have been applied to assist struggling readers in L1 (Schmitt et al., 2011). They also receive attention from researchers for their potential to enhance L2 reading.

Speech recognition (SR), in essence, is the process of allowing computer software to interpret the meaning of a speaker's utterances. SR also has been increasingly incorporated in L2 learning. There are any providers of commercially available CALL systems that use technology, including Rosetta Stone Tell Me More), Pearson (MyLab), Scientific Learning (Soliloquy Reading Assistant), eLanguage (Learn to peak), Carnegie Speech (NativeAccent), L Labs (MyET), Livemocha, English Central, Duolingo, Babbel, Aleo, and Berlitz. Studies have examined some SR software (e.g., IBM Reading Companion and Watch ‐ me! ‐ Read, Carnegie Mellon's Project LISTEN, Colorado Literacy Tutor, University of Birmingham TAR Project), and findings suggest that their uses bring not only motivation and encouragement but also prove reading ability in children (Mostow et al. 2008). Reading Companion has been applied to help children in Taiwan improve reading in EFL (Liaw 2013). Meihami and Varmaghani (2013)

reported how Tell Me More Software was used to help students improve EFL reading comprehension.

- **Mobile Devices**

Mobile devices have many advantages as learning tools, which include learning written language. They are portable and provide access to an ever ‐ expanding amount of information and resources, which can be shared through apps and/or social networking sites. The three-year observation made by Stockwell (2010) of EFL students in Japan suggests an increase in the use of mobile phones over time for vocabulary learning. In the study by Motallebzadeh and Ganjali (2011) vocabulary was taught by sending short messages (SMS)via mobile phones and positive

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results were found. Gheytasi, Azizifara, and Gowhary (2015) conducted a similar study and found students receiving instructions via mobile phones achieved higher reading comprehension scores than the other group who were taught using a conventional approach. Alemi and Lari (2012) compared the effects of using SMS and dictionaries for vocabulary learning and found SMS more effective and welcomed by the participants. Kim's study (2014) showed that students who discussed reading topics through their mobile devices outside of class significantly outperformed the other group who did not in reading comprehension.

Learners should use the following apps for learning and teaching purposes. They are countless, but we just introduce a few apps. Another dimension is that, our youth has become technology addicts, so they are in dire need to use MALL (Mobile Assisted Language Learning) to learn ESL skills.

- **aptoide (app store) blackmart (app store)**
- free Google Apps for Education
- **Grammar Up**
- **Grammaropolis**
- **English LaunchPad (whiteboard etc)**
- **Socrative (assessment)**

- **Learn English The Fun Way**
- **SpeakingPal** **SpeakingPal English Tutor**
- **iFPoems** **Busuu** **(vocabulary 3000)**
- **Wordflex Touch Dictionary**
- **Dynamic English Lesson 3 – Idioms**

iBooks) My Story **Writing Prompts**

- **Listen and Speak**
- **Cartoon- Free English**
- **EnglishPodcast for Learners**
- **Fluent English**
- Supiki English Conversation Speaking Practice app

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- **Learn English Elementary (by British Council)**
- **Language Verb Trainer**
- **LangLearner English Idioms**
- Sentence Builder
- **50 Languages**

(3) CMC Technologies (Chat, Moo, email)

Reading instruction is increasingly informed by sociocultural and learner-centred constructive perspectives, with one consequence that cooperative reading and co-construction of meaning from the text are now making their way into L2 learning. Furthermore, in today's information age, CMC technologies, ranging from email, free browser extension tools, to innovative systems designed by researchers can be accessed to facilitate cooperative reading among learners of different cultural and linguistic backgrounds. Shang (2005) developed an electronic-based peer collaborative environment to explore students' attitudes toward email applications in reading classes. Lan (2013) designed a co-sharing-based strategy learning system for L2 vocabulary learning known as "Mywordtools." Lan, Sung, and Chang (2007) developed a mobile-device supported peer-assisted learning (MPAL) system for collaborative EFL reading activities and found the system improved elementary school EFL learners' collaboration and reading skills.

eComma, an open-source Web application for textual annotation developed by the Center for Open Education Resources and Language Learning, was developed to turn reading into a group activity during which learners help each other understand a text (Blyth, 2013).

Challenges

Reading in the technological age is making a tremendous impact on how we see and interact with the world. For L2 learners, the abundant access to authentic information resources and technological tools to facilitate learning L2 reading are creating unprecedented opportunities for potential success. Nonetheless, the affordance of interactivity also leads to distracted minds, information overload, and fragmentation (Cobb, in press; Godwin-Jones 2010). Students

nowadays constantly engage in reading and interacting often by using short, de-contextualized informal language that may distract them from focused thinking. One important challenge today for educators is then to find creative and effective ways to lead distracted readers back to productive language learning.

Another challenge faced by educators is keeping up with the ever-evolving technologies and selecting the most appropriate ones to design instruction with sound principles of reading. Technologies can support successful L2 reading; at the same time, they are increasingly complex and hard to follow. Often, factors for using technologies in the classroom are social and economically driven instead of pedagogically-oriented. Instructors frequently adapt tools on an ad hoc basis. New technologies emerge more rapidly than educators can connect them with theoretical or pedagogical grounding. The needs of this rapidly evolving environment do not fit well with predefined curricula, annualized budgets, and programmed institutional investments. Resources would need to be as reactive and the teaching environment then prioritized, and this is contingent on L2 teaching conditions which vary widely.

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Traditionally, teachers are educated about the nature of reading and are ready to teach based on their education. However, as reading and required strategies change due to new technologies, many teachers find their knowledge obsolete and inapplicable to meet the needs of their students. Teacher education thus also faces challenges of cultivating teachers' abilities to continuously learn the changing technologies and develop new visions for literacy.

Future Directions

It is foreseeable that technology developers and educational researchers will continue to build products and learning environments for a wide range of student abilities and preferences. They can indeed be useful for the teaching and learning of L2 reading but should not be used simply because they are available (Chun, 2007). Sound support of reading and SLA theories, as

well as pedagogical considerations are essential. It is also important to envision how the notions of reading, writing, and literacy are changing in the global context. Reading in the digital age is not just about decoding text; it is also critically evaluating and co-constructing on the globally-connected information super highway. Goodwin-Jones (2010) points out that as we use available tools, we in turn are shaped by them. Therefore, by choosing the tools, we also select how and what we are becoming. In this context, L2 reading may be shaped by three trends in technology of learning.

First, ubiquitous learning may be possible because reading materials are widely available via mobile devices, which offer portability and instant forms of communication on the go. In mobile learning, computers are not limited by being embedded in the learner's surroundings. In a ubiquitous learning environment, the learning is supported by embedded and invisible computers as well as networks in everyday life. While learners are moving with mobile devices, the system dynamically supports learning by communicating with embedded computers in the environment and mapping real objects and the information into a virtual world. Ubiquitous learning systems have been developed for L2 vocabulary learning and reading comprehension, and their future is encouraging as the technologies are fast-evolving to provide greater adaptability for diverse L2 reading needs in real-life contexts.

Second, adaptive learning and personalization may continue to be developed for learning L2 reading. As mentioned earlier, continuous efforts have been made on building flexible and adaptable scaffolding tools to address diverse learner needs. Learner-centeredness will continue to be the force leading the design and selection of technological tools. More learner preferred features will be incorporated for students who need them, invisible to those who do not, and adjustable and removable to accommodate the learner's reading progress. As for learner preferences and needs, in addition to teachers' professional judgement, Big Data technology can be applied to turn information overload into useful knowledge for designing learner-fit L2 reading materials and learning systems. Additionally, alternative formats, such as visual-syntactic text formatting (VSTF) which replaces the block-shaped text of the standard format with a cascading pattern, have been suggested by researchers to help readers identify the

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grammatical structure and increase reading comprehension (Yu, &Miller, 2010; Warschauer, Park, &Walker, 2011).

Third, these technologies may continue to work toward autonomous learning. The ultimate goal of scaffolding and learner-centred technologies is to automate the identification of appropriate learning tools for students. Researchers have taken up social-interactive approaches to foster learner autonomy with technology, including incorporating learner choices, learner productions, and project-based tasks (Collentine, 2011). Researchers emphasize raising learner metalinguistic awareness and motivation for L2 learning by using technological innovations, but psychological differences in how language learners conceptualize and relate to particular technologies also need to be taken into account. The range of new technologies being applied to the evolving process of reading indicates that this is an area of continuous innovation.

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Lesson 12

Technology and L2 Writing

- Technologies for L2 writing
- Web 2.0 applications
- Automated writing evaluation
    - Criterion
    - Turnitin
    - Writing Pal or W-Pal

- L2 writing and AWE

- L2 writing and corpus-based technologies
- Future research and development

Introduction

New information and communication technologies are altering writing practices in important ways. As Relles and Tierney (2013) put it, "the integration of communication Technologies with academic culture suggests that the writing habits of tomorrow's students will be navigational across myriad discourse situations that do and will yet exist".

Students in lower grades, for example, while still working on writing sentences, may be Routinely asked to go beyond traditional writing tasks to put together PowerPoint slides, collages, or contribute text to blogs. High school students, while drafting persuasive essays, may be tasked with writing Facebook or Twitter posts. College students continue to write lab reports but also need to construct multimodal compositions that include both text and visuals. Successful business people must be able to write communications to be disseminated through a variety of social media.

In this context, all teachers, schools, and colleges are challenged to respond to the changing nature of writing (Herrington, &Moran, 2009). Fortunately, the same wave of technologies affecting writing practices provides a wealth of tools for the teaching of second or foreign language writing. Such tools have been adopted by business and education to improve the teaching and learning of writing. In this chapter, we describe technologies developed to aid in the writing process, which are also used for teaching. Following the description, we provide critical analysis of the empirical research on the effectiveness of software and web‐based technologies in teaching L2 writing. We conclude the chapter with a look at future research and development of technologies and pedagogies for L2 writing.

Technologies for L2 Writing

The wide variety of technologies for L2 writing can be divided into three general categories.

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The most general purpose of the three is the Web 2.0 application, which allows for authorship of multiple users who contribute content to a common repository online. The second category is automated writing evaluation systems developed specifically for analysis and feedback to writers during the writing process. The third category is the corpus‐based tools, which serve as a reference to writers as they strategically examine the language used in collections of existing electronic texts. Many software tools exemplify each of these categories, but we have chosen a few to illustrate the affordances offered writers by tools of each of the three types.

- **Web 2.0 Applications**

Web 2.0 tools include a variety of social media sites, such as Facebook and Twitter, as well as blogs. For L2 learners, these sites provide unprecedented opportunities to experiment with their language in settings where their language appears before and communicates with real audiences rather than being confined to communication for practice within the language classroom. The use of language for communication, rather than for practice alone, is a core goal of most language instruction. Beyond opportunities for communication, Web 2.0 applications like Google Docs provide the tools for collaborative writing.

Lang‐8 (http://lang‐8.com/) is a good example of a social networking site designed to encourage L2 communication by creating a community where language learners are matched with native speakers of target languages. Each member can contribute to the virtual language learning community by writing posts in the language they are learning and giving feedback or making corrections to other members' written posts in his or her native or stronger language.

With a few buttons for editing, such as colour changing and crossing out, users can easily correct or edit others' posts on Lang‐8. Lang‐8 rewards active users with "L" points, which help make their posts more visible to proficient users, thus increasing the probability that they will receive feedback or corrections. In other words, the more a member of the community contributes to the process of language correction, the more his or her writing or posts are corrected. In addition to written corrections, Lang‐8 has integrated Skype, an online tool allowing for international, live video communication. Lang‐8 allows learners to practice

writing on their own. Language instructors can also create groups on Lang‐8 and design collaborative writing activities for their students and others in the larger community.

Google Docs, another important example, is a free online word processor within Google Drive, an office suite developed by Google Inc. Users need a Google account to create, edit, and share Google Docs files. Google Docs features a full‐fledged word processor with an easy‐to‐use text‐editing interface. Compared to traditional word processing software, Google Docs is unique in its capability for real‐time collaboration, including editing, commenting, and chatting by and among multiple users on a shared file. Additionally, the composing and revision history on Google Docs is automatically saved and a record of the entire composing process is available for review. A completed piece of writing can be published online or downloaded in different file formats, including Microsoft Word, pdf, plain text, html page, and so on. As a collaborative writing platform, Google Docs has gained popularity in language teaching classrooms at all levels.

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- **Automated Writing Evaluation**

Automated writing evaluation (AWE) systems have been developed to assist both native speakers and L2 learners to write more accurately by providing them with automated corrective feedback. AWE systems utilize sophisticated natural language processing (NLP) techniques and machine learning to create tools that are more powerful than traditional spelling and grammar checkers. NLP technologies have become sufficiently widespread that a number of these systems have been developed, although because of the substantial resources required to develop them, they are typically not freely available on the Internet. Criterion, Turnitin, and Writing Pal are among the widely used AWE systems.

Criterion (http://www.ets.org/criterion/) is a webbased commercial writing evaluation and feedback tool developed by Educational Testing Service (ETS, 2015). Criterion targets the writing instruction both in K‐12 programs and higher education and provides a holistic score

and feedback based on level‐specific models considering both the age and proficiency levels of the learners. Building on e-rater, an automated scoring engine, Criterion is capable of providing holistic scores (1–4 or 1–6 points) to the essays written to its prompts. In addition, detailed diagnostic trait feedback, in a mixture of both direct and indirect feedback formats, is available in five categories: grammar, usage, mechanics, style, and organization, and development. Besides, the holistic score and individualized feedback, it provides resources such as an essay planning tool and the Writer's Handbook at different levels for students to understand and evaluate the feedback provided. The handbook is available in different languages for ESL learners speaking Chinese, Spanish, Korean, and Japanese. Teachers can assign writing tasks from the built‐in pool of writing prompts or create their essay topic.

Moreover, it allows for teacher and peer feedback. This web‐based tool can be used at different stages of writing instruction for various purposes. Language instructors can use it in class for essay planning or a peer‐feedback activity, or out‐of‐class for students to submit and revise based on the feedback.

Turnitin (http://turnitin.com/) was initially launched as an online plagiarism prevention service by iParadigms, LLC, in 1997. Recently, through partnering with or acquiring other companies, iParadigms added more functions to Turnitin and transformed it from an originality‐checking tool to a comprehensive platform of online automated grading and peer review (Turnitin, 2015). For example, Turnitin has integrated e-rater, the automated scoring engine developed by ETS as well as LightSide Labs' LightSide Revision Assistant to enhance its grammar checking and assessment function. In addition, Turnitin facilitates teacher feedback by providing frequently used comments and rubrics as well as a voice commenting tool. Turnitin can be integrated with mainstream learning management systems (LMS), such as Blackboard Learn, Moodle, Canvas, and so on. Turnitin targets customers in the field of education, including educators and students in middle and high schools, colleges and universities. Turnitin also provides online tutorials and training to teachers, students, and school administrators. Currently, Turnitin has found its place in several institutions as a plagiarism detection tool and several empirical studies have been conducted to investigate its utility and user perceptions (Rolfe, 2011;

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Stapleton, 2012). Turnitin's recent expansion of grading and peer-reviewing functions invite empirical investigations into its effects on writing pedagogy as well.

Writing Pal or W-Pal is an automated intelligent tutoring system (ITS) developed by the Science of Learning and Educational Technology (SoLET) Lab at Arizona State University.W-Pal's intended users are native English - speaking students in high schools. However, English language learners in high school and college freshmen have also been included in some empirical studies of W-Pal in the United States. Unlike other AWE tools, W-Pal is designed as a writing strategy instruction tool based on four principles for teaching writing, namely, strategy instruction, modularity, extended practice, and formative feedback (Roscoe and McNamara 2013). Accordingly, W-Pal provides eight animated learning modules covering the typical writing process, including writing strategies used in the pre - writing phase, drafting phase, and revision phase. The learning modules are coupled with two types of interactive practices to improve student engagement and learning motivation: game - based practices as well as essay - based practices. Student essays produced on W - Pal can be scored automatically with automated formative feedback, using Coh - Metrix –a system developed for computing cohesion in the written and spoken texts by the Institute for Intelligent Systems at the University of Memphis– and other text analysis tools.

- **Corpus - Based Tools**

Like AWE systems, a number of corpus - based tools have been developed as resources for L2 writers to gain access to examples of authentic language use in collections of electronic texts. Corpus - based pedagogies, data - driven learning, are based on the idea that students need to have access to examples of language (i.e., data) as they write, and that such examples need to meet specific writing needs at the time of writing. Corpus tools, therefore, consist of corpora of texts as well as the software tools required for searching and displaying the examples. The Corpus of Contemporary American English (henceforth COCA, Davies 2008) serves as a good example of a widely used corpus.

COCA (http://corpus.byu.edu/coca/) is a freely available online corpus of English, Created by Mark Davies at Brigham Young University. The corpus has over 450 million words of text that covers spoken, fiction, popular magazines, newspapers, and academic text genres. Users can search for exact words and phrases, parts of speech, and collocations through the COCA interface. In addition, users can take advantage of semantically‐based queries to Differentiate usages of synonyms (e.g., little vs. small) or related words (e.g., men vs. women). The COCA interface "Word and phrase" (http://www.wordandphrase.info/) permit users to interact with the tool differently. For example, users can submit a whole text for analysis and see a detailed frequency report on the words that they produced. Learners can also compare their use of phrases to the phrases in the corpus. The words and phrases can be limited to academic texts so that users can analyze an academic text as well as search for academic word lists and collocations. COCA can be used for different purposes in second language writing instruction. For example, language instructors can use it to expose learners to the authentic use of language and thus the form and functions of different language uses, which in turn might encourage learners to implement these features in their writing.

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Empirical Research on L2 Writing Technologies

Empirical investigations into the usefulness of writing technologies for L2 writing have been described for each of the three categories of writing tools introduced above. Research encompasses a range of methodologies to address questions about learners' writing strategies, their language use, their writing practices, attitudes, and writing outcomes.

- **L2 Writing with Web 2.0 Applications**

Social networking sites (SNS) and wiki‐type tools as representative Web 2.0 platforms have allowed the researchers to investigate L2 writers' engagement in meaningful social interaction as well as collaborative writing (Lee 2010). Recent research has shown that collaborative writing on web‐based word processing tools, such as Google Docs, benefit learners' writing development through peer editing and meaning‐related revising. The study

found that the L2 writers focused more on meaning than form and the grammatical changes they made collaboratively were mainly accurate, which in general contributed positively to the quality of their writing.

Educational uses of social media websites, such as Facebook and Twitter, have begun to be investigated by researchers. For example, in a research about an English writing class for students majoring in English peer assessment was included on the Facebook page designed for English writing. It was found out that the students made significant improvement in English writing in terms of content, organization, structure, vocabulary and spelling, and genre awareness. The use of Facebook as a platform for peer assessment was positively perceived by the students as Facebook‐based activities promoted collaborative learning and enhanced students' interest and motivation. However, the educational value of Facebook has not yet been fully explored and the assumption that using Facebook could meet the expectations of younger generations of learners, known as digital natives, is not well supported by empirical studies.

It was also found out in research that the digital natives or millennial learners did not necessarily have enthusiasm for educational technology and some of them were not willing to use Facebook for formal learning because it seemed to them in conflict with the purpose of Facebook.

- **L2 Writing and AWE**

In the past decade, research has examined the use of AWE tools for helping learners with their writing, that in some cases these promising tools can be challenging to implement with the intended effects. Some researchers also noted from their critical analysis of the research on the effects of AWE feedback on the quality of writing that "there is little clarity about whether AWE is associated with more general improvements in writing proficiency. One problem that they noted with the research is the lack of clarity as to whether or not the feedback provided by AWE tools in the English class helps with writing students do in their content courses because "AWE programs generally offer only a limited number of genres, such as persuasive, narrative and informative genres.

Another issue identified in research on AWE is that the automated corrective feedback in the AWE systems needs to be implemented because of the target audience and learning context.

It was also found that AWE feedback can be more effective when it is combined with teachers' feedback. There are numerous possible ways of integrating AWE with teacher feedback.

To illustrate, students can use AWE to help them improve the quality of initial drafts before submitting them to the teacher for feedback or teachers can use AWE as a diagnostic tool to identify the problems that students have with their writing and provide feedback based on the automated analysis.

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- **L2 Writing and Corpus - Based Technologies**

Empirical studies of corpus use for data - driven learning have yielded positive findings. Investigation of English language learners' interaction with corpus - based materials through micro - level analysis of learners' behaviours has revealed positive learning outcomes associated with intensive interactions with corpus tools.

With a focus on the use of a corpus as a source to inform students' revision in a short essay - writing assignment, a study was conducted and the findings indicated that interacting with the corpus tool helped students correct grammatical errors. However, the accuracy of correction was significantly different among three types of errors, namely omission, misleadinginformation, and addition, which highlights the need for research to have a closer look at the learner - corpus interaction for different purposes.

Besides the use of corpus tools for lexico‐grammatical learning, there are relatively fewer studies on the use of a corpus for discourse-level learning and writing, especially for academic writing.

Future Research and Development

Findings from empirical research on L2 writing technologies are promising. The availability of a wide range of technologies has the potential to facilitate the L2 writing, teaching, and learning process. At the same time, it also challenges L2 writing practitioners and researchers to investigate the best techniques and strategies to utilize these technologies to best answer the specific needs of their learning contexts. More emerging technologies are yet to be incorporated into L2 writing activities, L2 writing pedagogy, and L2 writing research.

Learning analytics is defined as the educational instruments designed to collect, measure, and analyze students' learning data with the goal of better understanding learning processes and predicting learning outcomes in educational contexts. In many fields of study, efforts are being invested in analytic approaches to learn from large datasets. In education, such data mining research may inform approaches to L2 writing data collection and analysis.

Writing‐based learning analytics, such as Mi‐Writer developed at Athabasca University, Canada, is one of the learning analytics designed to capture data throughout a writing process, including planning, composing, reviewing, editing, and feedback‐giving. For example, students' writing behaviour and interaction with peers and teachers can be recorded in real‐time. Mi‐Writer is also capable of generating writing‐related metrics for both L2 writers and L2 writing instructors. Such data collection mechanisms open the possibility of facilitating automated real‐time feedback that is tailored to individual learners.

Learning analytics can be treated as a comprehensive technology that will also benefit from integrating other techniques such as keystroke logging and eye‐tracking technologies. New unobtrusive data gathering techniques such as keystroke logging and economically more

feasible techniques involving eye tracking can help practitioners and researchers better understand students' writing behaviour, multimodal composition processes, as well as strategies employed for resource use and self‐regulation.

Conclusion

This chapter reviewed the three major categories of technologies, namely Web 2.0 applications,
AWE, and corpus‐based tools. These new technologies are shaping how L2 writing is spractised and taught. Therefore, language teachers should be open to the development of new technologies that have the potential to assist L2 writing.

Openness in this domain means that L2 writing teachers are expected to experience these technologies themselves and then to make a critical evaluations of the technologies for their utility in L2 writing contexts. In using these technologies, language teachers should not underestimate the importance of learner training. Even when using technologies that L2 learners are already familiar with, teachers need to teach the desired practices through carefully designed learner training. Likewise, some researchers remind us of a potential mismatch between learners' "natural" use of technology and suggested "ideal" use of technology for learning.

Consequently, learner training is even more critical with the technologies designed especially for writing pedagogy, such as corpus‐based tools and AWE tools. While independent access remains possible, the relative success of many of these tools will continue to rely on classroom teachers as teachers play a pivotal role in technology‐enhanced classrooms.

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Lesson 13

Technologies for Teaching and Learning L2 Listening

- Digital affordances and new listening contexts
- Technologies for listening
  - Digital Devices and Networks
  - Content
  - Controls and Help Options
  - Operational
  - Regulatory
  - Compensatory
- Technology, listening, and SLA theory

- Technology-mediated listening: Research and practice
- Current trends and future directions

Digital Affordances and New Listening Contexts

In recent years, it has become increasingly common to speak about technology tools and applications in terms of their affordances. According to Norman (1988), affordances are the perceived possibilities that a user has for such tools and applications. The term is used here in a broad sense where that "perception" is not necessarily universal but rather mediated through theory and practice toward the goals and objectives of second language learning. In this context, referring to the online language learning environment, Lyceum defines affordances as possibilities as well as limitations" having "an impact on its [Lyceum's] use". For example, the affordance of a button for turning on and off captioning in videos may differ depending on whether a teacher or learner perceives it as (1) a shortcut to comprehension that can privilege reading over listening, (2) enrichment of the audio channel to support noticing (Schmidt 1993) during dual coding (Plass and Jones' (2005) multimedia model described below), or (3) a means

to identify and capture new vocabulary items (Danan 2004) in combination with the additional function of pausing.

Technologies for Listening

The preceding categories broadly represent the potential characteristics of digital devices and networks for mediating listening both for aiding comprehension and for facilitating language learning (with an emphasis on potential). This section reviews a range of relevant technologies, describing them and discussing in general terms what their value to listening and language learning might be, singly or in combination. One major area, help options, is discussed through a framework developed by Cardenas‐Claros and Gruba (2013).

Digital Devices and Networks

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Listening is currently supported by a range of digital devices. Desktop and laptop computers remain widely used, but these have been supplemented by tablets and smartphones (which in reality are just small mobile computers). In addition to these general‐purpose devices, there are more narrowly dedicated ones such as DVD players, mp3 players, feature phones (the "traditional" mobile phone with some additions like an mp3 player but without the smartphone's web connectivity), and streaming media players like Apple TV and Google Chromecast that work with a digital TV or monitor. All can have a role in connecting language learners to listening experiences. The networks that connect these devices to servers and other devices are also critical as it is increasingly less common to load programs and content from a physical disk, CD, or DVD. Networks—wired, wireless, and mobile (e.g., 3G, 4G, and LTE)—can be used to download material for listening or to stream it. Increased bandwidth in both developed and developing countries are putting Internet audio and video readily into the hands of hundreds of millions of subscribers. By the end of 2014, the global average connection speed was 4.5 Mbps (megabits per second). According to the U.S. Federal Communications Commission (FCC), 4 Mbps is sufficient for streaming HD video. Although mobile data connections are typically slower, ranging from 16 Mbps average in the United Kingdom to 1 Mbps in New Caledonia, even that 1 Mbps rate can support basic video at 640 Kbps. The primary issue for many remains the cost rather than the base technology; however, the cost continues to drop and many mobile

users can rely on free or inexpensive Wi‐Fi rather than mobile data plans, especially for listening with video.

Content

Content here refers to audio or video recorded spoken language texts of all types, from dialogues and short clips to academic lectures and movies. Content designed for and dedicated to enhancing listening skills is readily available online, especially for English language learners (e.g., http://www.esl‐lab.com, http://www.elllo.com). Many multiskill programs have a substantial listening component, and online listening files accompany several foreign language

textbooks. However, the most significant change for listening is that access to native speaker content has exploded in the last decade or so. In the space of those few years, language teachers and learners have gone from relying on limited personal and institutional physical collections of audio and video recordings to tapping into the enormous and continually expanding archives of free, authentic material available on institutional and commercial media websites and through YouTube (launched in 2005) and other streaming services. The problem for many teachers and independent learners now is not locating material but sorting the bountiful options for content that is likely to be effective for supporting the development of listening skills and target language proficiency. As noted below, one direction for addressing this issue is an expansion of authentic content curation by language learning experts.

Controls and Help Options

There are several ways that technology can improve the listening experience for language learners so that comprehension, processing, and acquisition are potentially supported. Cardenas‐Claros and Gruba (2013) have captured these in a relatively comprehensive framework, called CoDe, for conceptualizing (Co) and designing (De) help options to support second language listening. Although their focus is on help options for listening resources and environments dedicated to second language teaching and learning, elements of the framework are also relevant for supporting learner use of authentic audio and video content not targeted at that objective.

Drawing on the work of Chapelle (2003) among others, they divide help options into four categories: operational, regulatory, compensatory, and explanatory.

Operational help fits into the category of technical support and training. These include user manuals, help menus, training modules, and introductory‐level tutorials aimed at making learners aware of how to use the hardware and software, how the program functions, what help options are available and how to invoke them, and potential frustrations.

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Regulatory help options are those that aim to prepare the learner for a particular task and understand and reflect on that task after its completion. In the former category, they place listening tips, directions for specific strategy use and development, and guidance on which of the available help options to use for that task. For post‐listening guidance, they list explanatory feedback; another example would be directions to reflect or comment on "lessons learned" in line with metacognitive approaches aimed at promoting autonomy.

The provision of compensatory help options taps into the affordances of digital technologies to provide modified input or to make input more salient in ways that can support both comprehension and subsequent acquisition. For modified input, Cardenas‐Claros and Gruba note various combinations linking text (subtitles and transcripts) to audio and video, audio to still images, and L1 to L2 transcripts. For increased saliency, they identify the various audio control buttons (volume, rewind, pause), the media controller bar or slider, and for some media players, the variable speed control for slowed playback of audio and video.

Their final category of explanatory help options similarly includes operations targeted at making input more salient through visible links to explanatory hints or links to definitions and glosses from subtitles or transcripts. Explanatory help can also appear in the form of input elaboration, namely, the content found in cultural notes, grammar explanations, electronic dictionaries, and tools such as concordancing programs.

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This framework is useful not only for developers. Looking beyond dedicated language learning software with a listening component, language teachers can exploit some of these concepts to help their students have a more productive learning experience with authentic materials. For compensatory help, they can identify specific media players (e.g., the VLC player—see http://www.videolan.org) with a rich set of options as well as sources of appropriate online audio or video materials that include captions and/or transcripts. They can offer some regulatory support themselves by suggesting effective procedures for using these materials and media tools. For explanatory help, teachers can also evaluate and recommend electronic

dictionaries and sources of grammatical and cultural explanations, as well as train students in their use. Such recommendations have been prompted in some cases by connections made between technology, listening, and theories and models of second language acquisition.

Technology, Listening, and SLA Theory

Many research studies on listening and related topics, such as vocabulary acquisition in audio and video contexts, draw on an SLA theory for their framing. However, these theories are often simply borrowed without taking into account the impact of the mediating role of technology on the listening or learning process at the theoretical level. There have been few overt attempts similar to those by Cardenas‐Claros and Gruba to bring technology and SLA theory explicitly together in a way that is relevant for listening. In this section, we review three of them: Chapelle's (2003) interpretation of SLA theory and technology, Plass and Jones' (2005) multimedia learning model, and Vandergrift and Goh's (2012) application of their metacognitive model of listening to technological environments.

Chapelle (2003) links technology to SLA theories by showing how several theories can be adapted to explore the role of the computer as a stand‐in for a human interlocutor. Although she touches on sociocultural approaches as well as the depth of processing theory, she draws most heavily on the interactionist perspective in this work. While not specific to listening, much of her proposal is relevant here.

Using concepts from the interaction hypothesis, Chapelle describes ways in which the computer can aid the learner by making input more comprehensible. As she explains, "The concern for developing good CALL tasks is how to design materials that can direct learners' attention to particular linguistic forms within the input".

We have suggested various websites to incorporate readymade material for ESL learners. Now we recommend some tools to design pedagogical material.

- **1. Exam time mind maps/ https://www.spiderscribe.net/:**

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- **2. examtime Quizzes:**
- **3. eltpics photos to teach**



- **4. Author Stream slides**

- **5. Present.Me A video presenting platform:**

You simply upload a Power Point presentation and add video or audio to accompany your presentation slides.

6. Blabberize Animates any image with a moving mouth and audio.

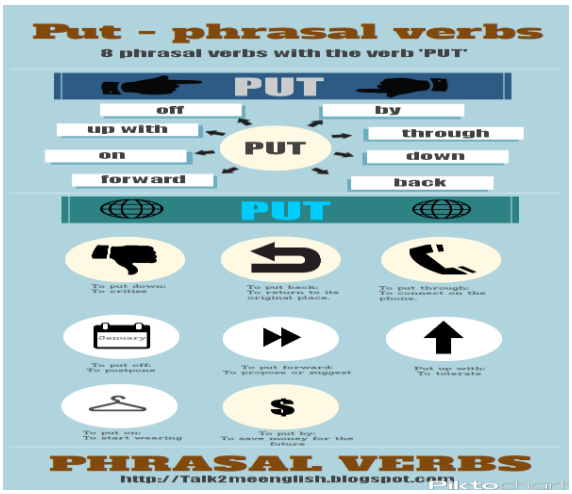
- **7. wordle.net, wordclouds.com Creates beautiful word clouds.**
- **8. Infogram Creates interactive infographics**

When you move the mouse over each word, an information box opens with a synonym or explanation. You can also add photos and videos.

9. Animoto Creates videos

with photos, music and text.

10. Piktochart Creates quick and impressive infographics



- 11. StudyBlue- an online tool for making flashcards with video and audio
- 12. Pixton- an online comic maker to add sound, upload pictures and images.
- 13. Storybird- is a collaborative storytelling tool. Students can create short art inspired stories



- 14. Prezi- a cloud-based presentation software that can zoom in and out.

Thus, one important function of the computer for listening within this theoretical perspective is to provide enhanced input through increasing salience, input modification, or input simplification or elaboration. As we will see below, this provision can also be relevant for training learners to be autonomous so that they will direct their attention to these enhancements and use them appropriately when listening to authentic materials.

For salience, targeted language forms in text support for listening material (e.g., transcripts or captions) can be underlined, boldfaced, or coloured differently, or a word or phrase could be stressed. In fact, following Cardenas‐Claros and Gruba (2013) the presence of text in any form (captions or transcripts) can serve to make recorded input more salient (assuming learners have sufficient reading proficiency in the target language script; by providing full versions of reduced forms and making word boundaries obvious. Audio material may also be repeated to increase saliency, and specific task elements can direct learners to such repetitions. Besides discussing strategies for increasing salience, Chapelle covers a range of options for input modification to make that input more understandable. Still images accompanying an audio clip or a video where the visual information supports the meaning of the spoken language is one form of modification, although it is worth noting that the visual dimension can interfere with rather than support comprehension if it is not congruent with the audio content. Text supports in the form of either translations or target language definitions of words or phrases can also provide another form of input enhancement relevant to listening comprehension.

Finally, input enhancement in computer‐mediated listening can occur through a programmed feature providing simplification or elaboration. Plass and Jones (2005) build on concepts from Chapelle's (1998) version of the interactionist perspective and combine them with Mayer's cognitive theory of multimedia (Mayer, 2001) to synthesize an integrated model of multimedia language learning applicable to both listening and reading. Mayer's theory links verbal and pictorial input through parallel processing, or dual coding, reinforcing one another when conditions are right. A set of empirically supported principles in the theory describes those conditions.

For example, Mayer's Contiguity Principle states that complementary text and pictorial material that are close to one another are processed better than when they are further apart. This would imply that presenting a video with captions on the screen should yield better comprehension than presenting a video with a transcript in a window to the side. Plass and Jones propose that this dual coding can strengthen each stage in Chapelle's model of the second language acquisition process: apperception (including noticing aspects of the input), comprehension, intake, and finally integration into the learner's linguistic system.

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They use their model to interpret the multimedia research existing up to that time and offer three principles for using multimedia in support of language learning:

• Multimedia Principle: "Students acquire language better from input enhanced by text and pictures than by text alone."
• Individual Differences Principle: "Students acquire language better when they have the choice of visual versus verbal annotations…"
• Advance Organizer Principle: Advance organizers in reading and listening activities aid language acquisition and those "presented in visual and verbal modes are more effective than those presented only in the verbal mode."

Teachers and learners operating in multimedia environments can similarly invoke these principles, regardless of whether those environments and the content for them have been specifically designed for language learning. In addition to the three principles, Plass and Jones offer three recommendations, weaker claims that they distinguish from principles because the empirical support for them is more limited. These include allowing learner control over the order, pace, and choice of materials, opportunities for producing comprehensible output, and vocabulary testing in the same mode as the annotations that are provided.

Vandergrift and Goh (2012) build their theoretical second language listening model oncomprehension, using as its foundation Levelt's cognitive comprehension and productionmodel. The authors identify several cognitive and affective factors that affect listeningsuccess (e.g., vocabulary size and motivation). However, the defining feature of the model isits emphasis on metacognition, along with their claim that metacognitive instruction canhelp learners become more effective and efficient especially in listening tasks and activities conducted outside of class. This instruction begins with a knowledge foundation for thelearner:

• Personal knowledge (beliefs about listening and identification of individual listening problems)
• task knowledge (listening processes, different listening skills based on objectives, factors affecting performance, etc.)

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• strategy knowledge (understanding of the roles of cognitive, metacognitive and affective strategies as well as identification of appropriate types for particular tasks and problems)

That foundation is then integrated into the metacognitive processes of planning, monitoring, and evaluation for learners. In each of these areas, Vandergrift and Goh address not just listening comprehension goals but also procedures for overall listening development.

The authors devote a full chapter to listening in multimedia environments, reviewing research in areas such as the use of visual media, support options, and captions. Although they acknowledge the potential of these, they emphasize that the evidence for incorporating them is mixed and provide a set of useful guidelines to teachers to harness them appropriately.

Technology‐Mediated Listening: Research and Practice

This section begins with an overview of research in four areas relevant to technology and listening that have been studied over the past 20 years or so, much of which overlaps with Cardenas‐Claro and Gruba's (2013) typology of help options: **(1)** use of captions and transcripts,
(2) multimedia, **(3)** electronic glossaries and dictionaries, **(4)** play speed control for slowing the speech rate. It then discusses some examples of techniques and strategies in practice as well as exploring the role of learner autonomy.

Captions and Transcripts

The use of both L1 and L2 captions for enhancing listening comprehension and ensuing vocabulary development has been studied since the days of VHS video players (note that here captions and subtitles are not distinguished. Although the results of some of that early research were mixed, several more recent studies support the notion that captions are a valuable comprehension tool, especially for listening‐based vocabulary development. Among the first studies using random access technology (a videodisc) was Borras and Lafayette (1994). They

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found that for their subjects (fifth‐semester college French students) the presence of captions under learner control led not only to better comprehension than that of a control group without captions but also a better subsequent performance on a related speaking task.

Winke, Gass, and Sydorenko (2010) noted that the use of captions involves a combination of factors including what learners are attending to when they read captions as well as how they process them. In addition to confirming prior research showing that captioned videos were better than non‐captioned for both comprehension and for recognizing new vocabulary, they suggested that processing differences are likely to be influenced by the learner's familiarity with the writing system. Native English learners of Spanish and Russian in their study were most successful having captions on the first of two listenings while learners of Chinese and

Arabic, whose orthography is more distant from that of English, did better on the second listening after context was established. Although they found no significant difference in benefits for second vs. fourth-year students (in Spanish at least), other studies suggest caption use can indeed be influenced by language level. For instance, Leveridge and Yang (2013) tested learner reliance on captions with high school EFL students in Taiwan. They found that there was a considerable individual difference but that overall, lower level learners were much more reliant on captions than their higher-level counterparts. There have been other issues related to captions that have been studied as well. Though most research has focused on target language captioning, some researchers have looked at differential effects of L1 vs. L2 captions.

While some scholars such as Danan (2004) focus on the positive affordances of captions, Vandergrift and Goh (2012) among others acknowledge the value of captions for vocabulary development and overall comprehension, but caution that it is not possible in most cases to distinguish whether they enhance listening comprehension or simply replace it with comprehension by reading. A study that supports their position is Sydorenko (2010), who found that learners are given captioned audio and video scored higher on written word recognition of presented vocabulary while those presented the same material without captions scored higher on aural recognition.

It is worth noting that Vandergrift and Goh's concerns are based on the assumption that language learners are not able to use captions in normal, real - time face - to - face encounters. Yet it could be argued that for many language learners, the great majority of their listening now and in the future will be one - way—listening to recorded media—rather than interactive, and that the online audio and video material they encounter will often be accompanied by captions. Thus, an environment of captioned listening may increasingly be considered as "authentic" as a traditional face - to - face one. Computer - mediated listening is simply a more complicated and varied phenomenon than is commonly acknowledged.

A less studied but related area of text support is the use of transcripts. The issues involving the impact of reading on the listening process discussed above are relevant here as well,

coupled with the additional problem of transcripts and video not being as contiguous as captions and video (Mayer, 2001). Although transcripts can aid in identifying word boundaries and new vocabulary, Grgurović and Hegelheimer (2007) found that the literature on the value for comprehension was mixed, with various studies showing an advantage, a disadvantage, and no effect. In testing learner preference of captions versus transcripts for support in video listening with a system that provided the two options under student control, they first found that learners used both less than expected. However, there was a clear preference for captions. They nevertheless concluded that it would be helpful to provide both if possible, along with training in their use, because a small group of students still showed a preference for transcripts.

Multimedia: Turning now from text support to multimedia in general, the area is a diverse one due to the options involved in selecting which media to combine, how to combine them, and who controls the result. For listening purposes, video is already multimedia when compared to audio (Yang, 2014), and video or audio plus captions or transcripts are multimedia compared to written text alone. Captioned video as discussed above is an example of multimedia, as is video presented with a transcript available on the same screen.