

Emerging Technologies in Second Language Teaching and Learning

Artificial Intelligence, Adaptive Learning,
Virtual Reality, and Beyond

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Series in Education



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Table of contents

	List of figures	vii
	List of tables	ix
	Abbreviations	xi
	Introduction	xv
	Part I. Foundations of artificial intelligence and instructional innovation in second language acquisition	1
Chapter 1	Implementing AI in second language acquisition: opportunities and challenges	3
	Jess Smith <i>Bellarmino University</i>	
Chapter 2	Teacher in the loop: critically evaluating AI's role in language teacher preparation	31
	Vera Sotirovska <i>Seattle University</i>	
Chapter 3	Digital storytelling across cultures: empowering multilingual minds	73
	Ömer Buğra Hamzaoğlu <i>Mediterranean (Akdeniz) University</i>	
	Başak Eda Hancı-Azizoğlu <i>Mediterranean (Akdeniz) University</i>	
Chapter 4	Empowering Chinese language teachers through AIGC and digital literacy	89
	Jiawen Zhu <i>East China Normal University</i>	
	Fang Cao <i>Seoul National University</i>	
	Xiaoqing Gu <i>East China Normal University</i>	

	Part II. Research studies on emerging technologies in second language acquisition	107
Chapter 5	Impact of AI on language teaching pedagogy: a participatory action study	109
	Xiaying Li <i>Fordham University</i>	
	Su-Je Cho <i>Fordham University</i>	
	Belle Li <i>Purdue University</i>	
Chapter 6	AI chatbots in EFL teaching and learning: insights from teachers and learners	133
	Nebahat Badem <i>Kahramanmaras Sutcu Imam University</i>	
	Omer Ozer <i>Adana Alparslan Turkes Science and Technology University</i>	
Chapter 7	Exploring ChatGPT's role in enhancing English speaking proficiency	157
	Xiaoxuan Li <i>Pennsylvania State University</i>	
Chapter 8	Faculty perspectives on adaptive learning in foreign language courses	175
	Shelly Wyatt <i>University of Central Florida</i>	
	Baiyun Chen <i>University of Central Florida</i>	
	Jessica Tojo-Raible <i>University of Central Florida</i>	

	Part III. Pedagogical strategies and reflections for language educators	193
Chapter 9	Best practices and challenges in the use of VR in the language classroom	195
	Samanta Buffa <i>The Ohio State University</i>	
	Kevin Richards <i>The Ohio State University</i>	
	Rebecca Bias <i>The Ohio State University</i>	
Chapter 10	Enhancing second language learning with captions	219
	Wing Shan Chan <i>National Coalition of Independent Scholars</i>	
	S. M. Sabra <i>University of California, Irvine</i>	
Chapter 11	Adaptive learning in second language teaching: insights for practice	243
	Anne Prucha <i>University of Central Florida</i>	
	Kacie Tartt <i>University of Central Florida</i>	
Chapter 12	AI and second language education: A pedagogical perspective	263
	Oyinkansola Sodiya <i>University of Texas at Arlington</i>	
	Contributors	281
	Index	289

List of figures

Figure 3.1. Tell your digital story	79
Figure 5.1. Integration of Quizlet tools in the Spanish language classroom	118
Figure 9.1. Furniture and labels in Room 1 (right side)	202
Figure 9.2. Furniture and labels in Room 1 (left side)	203
Figure 9.3. Portal to move to Room 2	203
Figure 9.4. Grabbing and moving assets in Room 2	204
Figure 9.5. Double set of assets for student interaction in Room 3	205
Figure 9.6. Six-degrees of freedom in VR	211
Figure 10.1. Illustration of information processing in dual coding theory	221
Figure 10.2. Vocabulary learning in dual coding theory	222
Figure 10.3. Scan paths of learners reading on-screen text in a less proficient language (L2 captions)	227
Figure 10.4. Scan paths of learners reading on-screen text in a more proficient language (L1 subtitles)	228
Figure 10.5. Example of glossed captions using a browser extension downloaded from Language Reactor website.	229
Figure 10.6. Links to external sites (circled area) are available if learners need more information regarding a particular vocabulary.	230
Figure 11.1. How students spent money saved on course materials	251
Figure 11.2. Impact of personalized adaptive learning (PAL) on grade outcomes for minoritized students in Spanish I: Comparison of ABC grades vs. DFW rates before and after PAL implementation	255
Figure 11.3. Impact of personalized adaptive learning (PAL) on grade outcomes for minoritized students in Spanish II: Comparison of ABC grades vs. DFW rates before and after PAL implementation	255

List of tables

Table 2.1. GenAI resources for educators	51
Table 4.1. AIGC-enabled content creation for different teaching scenarios in Chinese language education	98
Table 5.1. SLA-informed design and pedagogical outcomes of Quizlet-based vocabulary tasks	115
Table 5.2. Interview data results	121
Table 5.3. Student reflections	122
Table 6.1. Guiding interview questions	140
Table 6.2. AI chatbots employed by participants for educational purposes.	141
Table 6.3. Teachers' AI utilization strategies to enhance student learning	142
Table 6.4. Students' utilization strategies to enhance student learning.	142
Table 6.5. Language skills and components perceived as benefiting most from AI chatbot usage	143
Table 6.6. Teachers' perceived benefits from AI usage	144
Table 6.7. Teachers' perceived AI-related challenges	145
Table 6.8. Students' perceived AI-related challenges	146
Table 8.1. Participants' motivations to implement PAL in their courses	187
Table 8.2. Best practices in personalized adaptive learning implementation	189
Table 10.1. Various caption types and their benefits for learners at various levels of proficiency.	232
Table 11.1. Description of four main pillars of the AIM Initiative	252

Abbreviations

ACTFL	American Council on the Teaching of Foreign Languages
ADDIE	Analysis, design, development, implementation, and evaluation
AI	Artificial intelligence
AIGC	AI-generated content
AIM	Affordable Instructional Materials
AR	Augmented reality
BICS	Basic interpersonal communication skills
CA	Conversational agent
CALL	Computer assisted language learning
CALP	Cognitive academic language proficiency
CDL	Center for Distributed Learning
CEFRE	Common European Framework of Reference of Languages
CERCLL	Center for Educational Resources in Culture, Language, and Literacy
CLT	Cognitive load theory
COVID-19	Coronavirus Disease 2019
CRI	Course Redesign Initiative
CRSE	Culturally responsive and sustaining education/practice
DMLL	Digital mediated language learning
DOF	Degrees of freedom
DFW	Drop, fail, withdraw
EFL	English as a foreign language
ELD	English language development
ELDSF	English language development standards framework
ELED	eLearning Engagement Design
ELL	English language learner
EU	European Union
F2F	Face-to-face

FERPA	Federal Educational Rights and Privacy Act
FFI	Form-focused instruction
FL	First language
GAI	Generative artificial intelligence
GBL	Game-based language learning
GenAI	Generative artificial intelligence
HEA	Higher Education Act
HBO	Home Box Office
HSI	Hispanic-serving institution
ICALL	Intelligent computer-assisted language learning
IBM	International Business Machines
IEP	Individual educational program
IT	Information technology
ITLS	Intelligent tutoring language systems
ITS	Intelligent tutoring systems
K-12	Kindergarten through 12 th grade
L1	First language
L2	Second language
LLM	Large language models
MALL	Mobile-assisted language learning
ML	Machine learning
MLL	Modern languages and literatures
MOOC	Massive open online course
MR	Mixed reality
MTSS	Multitiered system of support
NCDPI	North Carolina Department of Public Instruction
NCES	National Center for Education Statistics
NLP	Natural language processing
NPC	Non-player character
OER	Open educational resources
PAL	Personalized adaptive learning

PLC	Professional learning communities
PLD	Professional level descriptors
SAMR	Substitution, augmentation, modification, redefinition
SCT	Sociocultural theory
SDK	Software development kit
SEL	Social-emotional learning
SIOP	Sheltered instruction observation protocol
SLA	Second language acquisition
SLL	Second language learning
SPARC	Scholarly Publishing and Academic Resources Coalition
STEM	Science, technology, engineering, and mathematics
TBLT	Task-based language learning
TePBL	Technology-enhanced project-based language learning
TESOL	Teaching English to speakers of other languages
TPACK	Technological pedagogical content knowledge
UCF	University of Central Florida
UDL	Universal design for learning
US	United States
USC	United States Code
UTAUT	Unified theory of acceptance and use of technology
VE	Virtual environment
VR	Virtual reality
VRChat	Virtual reality chat
VR-CCL	Virtual reality-constructivism and cognitive load
WEIRD	Western, educated, industrial, rich, and democratic
WIDA	World class instructional design and assessment
XR	Extended reality
ZPD	Zone of proximal development

Introduction

The current state of second language learning in the United States reflects a complex interplay of policy, educational practices, and sociocultural dynamics. Language education, particularly in the context of bilingual and multilingual programs, has gained traction, though it faces significant challenges. For example, despite funding challenges, the U.S. remains a leader in bilingual education research, with a notable increase in scholarly publications over the past decade, suggesting a growing recognition of the importance of bilingualism in educational contexts (Pérez & Manzano-Agugliaro, 2021). The integration of technology into language learning has emerged as a critical factor in enhancing educational outcomes. Digital-based literacy initiatives have shown promise in improving language acquisition among young learners, yet there remains a gap in fully leveraging technology within language-teaching practices. The promotion of equitable access to language education across diverse socioeconomic backgrounds represents an area of opportunity, as disparities in policy implementation can lead to unequal educational experiences (Adetokun et al., 2023; Cruickshank et al., 2020). While the landscape of second language learning continues to evolve, it is marked by significant challenges related to policy support, funding, and the effective integration of technology in educational practices. The ongoing research and advocacy for bilingual education underscore the necessity for a more inclusive and supportive framework that addresses the diverse needs of learners in a globalized world.

The inspiration for this volume arose from the enthusiasm and commitment of our Modern Languages and Literatures faculty to embrace new instructional technologies that promote student success. Foreign language education currently faces a myriad of challenges that hinder its effectiveness and accessibility across various educational contexts. One significant issue is the lack of motivation among students, often exacerbated by insufficient curriculum hours dedicated to language instruction, which can lead to the perception of foreign languages as non-essential subjects within broader educational frameworks (Zablotska et al., 2022). The integration of technology into language learning, while promising, has not been fully realized, as many educators struggle to effectively incorporate digital tools into their teaching methodologies. This gap in technological integration is compounded by the rapid evolution of AI and its implications for language education, where educators must adapt to new tools while ensuring that they enhance rather than detract from traditional pedagogical approaches (Daşkan et al., 2021;

Liang et al., 2023). What's more, the challenge of inclusivity in foreign language education remains a pressing concern. Educators are tasked with accommodating diverse learning needs, including those of students with disabilities, which requires significant adjustments in teaching strategies and resources (Lintangsari & Emaliana, 2020). The psychological aspect of language learning, particularly foreign language anxiety, further complicates the landscape, as many learners experience heightened levels of anxiety that can impede their ability to engage with the language effectively (Li, 2023). Lastly, the need for ongoing professional development for language teachers is critical, as many educators may not feel adequately prepared to meet the evolving demands of foreign language instruction in a globalized context (Chunping et al., 2024). Addressing these challenges is essential for fostering a more effective and inclusive foreign language education system that meets the needs of all learners.

This volume is organized into three sections: Part 1. Foundations of AI and Instructional Innovation in Second Language Acquisition (SLA); Part 2. Research Studies in Emerging Technologies in SLA; and Part 3. Pedagogical Strategies and Reflections for Language Educators.

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Index

A

- academic integrity, 144-145; 150-151
- academic dishonesty rise due to AI chatbots, 144-145; 148; 150-151
- accessibility, 9; 220
- AI role in, 12; 93
 - in higher education, 252; 256
 - in virtual reality, 201; 213
 - promoted by Universal Design for Learning (UDL), 47
 - through captions, 223; 235; 237
- adaptive assessments, 22-23; 177; 188
- adaptive learning, 13; 22; 80
- adaptive captioning, 237
- conceptual foundations, 14; 177-178; 245; 266-267
- PAL adoption and
 - implementation, 175-176; 178-184; 187; 189; 243-244; 247; 256; 258-259
 - Realizeit platform features, 246; 249-250; 252-253
 - student outcomes and effectiveness, 188; 248; 254-255; 257
- ADDIE model, 273-275
 - as instructional design framework, 263; 273; 277
 - stages of, 274-275
 - implementation phase in K-12 education, 275
- affektive filter; *see also* Krashen, Stephen
 - low-stakes practice reducing anxiety, 14
 - lowering through culturally sensitive teaching, 84
 - lowering through VR, 198; 200
- affordance theory, 162-163
- affordances of ChatGPT for language learning, 163; 166; 169
- as theoretical framework for ChatGPT language learning studies, 157; 162
- in AI formative assessment, 15
- in VR environments for second language acquisition, 201
- AI integration in pedagogical approaches, 3; 74; 99; 110-111; 190
- AI chatbots in EFL instruction, 141-142; 147-149; 151
- AI-driven conversational agents, 213
- alignment with language teaching frameworks and competencies, 18; 123-124
- assessment using pre-tests and post-tests, 117
- ChatGPT for conversational practice, 165
- collaborative instructional planning, 44
- critical evaluation of GenAI outputs, 69-70
- digital storytelling with AI, 77; 80-81
- flipped classroom and critical inquiry, 51
- instructional design models (ELED and ADDIE) , 274-275; 277
- learner engagement, 268
- learning management systems; integration with, 13

- optimal phases for AI integration, 273
- Quizlet integration in Spanish classroom, 118; 120–122
- role of school leaders, 23
- scaffolding instruction through data tracking, 15
- strategic use and planning in SLA, 10; 22
- teacher preparation activities, 46; 50; 59
- teacher professional development, 91; 94; 112; 170
- teacher roles in GenAI integration, 34–37; 113
- AI literacy, 93
 - critical AI literacy, defined; 34
 - frameworks for critical AI literacy, 21; 33; 36; 38; 40
 - in language teaching, 39; 45–46
 - need for training and education in, 146; 148; 150–152
 - skills and praxis, 50; 53
 - teacher preparation and professional development, 123
 - through teacher-AI collaboration, 111
- AI policy and regulation, 21; 38; 277
 - FERPA compliance, 37
 - in schools, 33; 148; 150; 152
- AIGC literacy; development of, 97; 99–100
 - AI literacy cultivation in AIGC seminars, 95–97; 99–100
 - cultural identity and heritage, 84–86
 - digital media; cultural learning through, 73–75; 77
 - foundational training for AIGC integration, 89; 91–94
 - in language learning, 35; 81
 - materials, cultural aspects of, 93–94; 101–102
- AIGC potential for immersive learning, 92
 - VR and AR; cultural learning through, 82; 269
- algorithm aversion in second-language education, 271–272
 - keeping humans in the loop, 276
- algorithmic bias, 23; 277
 - in GenAI outputs, 38; 50; 94
 - in grading, 272
 - reducing through educator awareness, 21
 - training data as source, 20
- Andy English Bot, 137–138
- anthropomorphism of AI, 52; 166–167; 169
- artificial intelligence, 35; 51; 74; 92
 - 109–110; 113; 134–135; 138–140; 143; 146–147; 157–159; 162; 169–170; 209; 229; 265; 268–269; 272–277
 - assessment and feedback, 13–16; 270
 - chatbots and ChatGPT, 37; 112; 133; 136–137; 149; 151–152; 161; 165
 - collaborative learning and community contexts, 13; 17
 - comprehensible input and BICS acquisition, 8–9
 - digital storytelling, 73; 77; 79; 81–82
 - ethics, equity, and overreliance, 19; 21–22; 38; 42; 95; 144–145; 148; 168
 - in Chinese language education, 89, 91; 93–94; 98–101

in sociocultural theory, 6; 11–12;
18

in virtual reality language
education, 210–214

overview and role in second
language acquisition, 3; 5; 23–
24; 96; 263; 267

self-regulated and adaptive
learning, 7; 41; 80; 111; 190;
266

teacher education and critical
literacy, 31; 33; 39–40; 43; 46–
50; 53; 67–69

teacher planning and materials
development, 10; 44; 59; 70;
97; 100–101; 141–142

vocabulary instruction and
acquisition, 14; 112; 117–122;
124

asset-based assessment practices,
65

audio commands in VR
bedroom furnishing task, 204

audiovisual input captioned
video, 220

augmented reality (AR), 215

in language learning, 81–82; 196

authentic language, 21; 74; 220

authenticity in chatbot
interactions, 136; 169

author journals as alternative
to Worksheets, 64

authorship and ownership, 20

automated essay scoring, 15

autonomous skills fostered by
AI in language learning, 268

controversy over, 18

criticisms of, 19

negative effects of AI on, 273

B

Babbel, 267–268

as adaptive learning platform,
176; 265; 267

gamification for learner
engagement, 209; 268

BICS and CALP, 8–9

AI applications for BICS
acquisition, 9

as framework for AI tools, 4; 8;
18

bridging BICS to CALP, 11–12

blended learning

adaptive learning platforms, 266

AI tools and human instruction,
168; 170

virtual reality and traditional
methods, 209

C

Canvas

voice recording, vs. Realizeit,
188

captions, 219–220

auto-captions, 229; 235

bilingual subtitles, 225–226

caption features and
enhancements, 229–230

challenges in digital
environments, 236–237

cognitive load theory and, 221–
224; 228

heritage and multilingual
education, 237–238

instructional use of, 231–234

platforms for captioned videos,
233–234

type selection by learner
proficiency, 223; 225; 227–
228; 230; 233–234

- ChatGPT, 5; 32; 67; 112; 143; 147; 268
 academic dishonesty concerns, 148; 150; *see also* academic integrity
 advantages and disadvantages of, 135
 ChatGPT-4o release, 152
 English speaking proficiency, use for challenges, 167–168
 features of, 163; 166
 humanization of, 167
 impact on writing development, 137
 in VR development, 211
 integrated in RECIPE writing tool, 136
 launch of, 138
 lesson-planning tool; 39; 59
 most used AI chatbot in Turkish EFL, 133; 146; 149; 151
 overview, 157–159; 165
 reducing speaking anxiety, 159–160
 self-directed learning, 160
 text generation in Chinese language education, 97
 use by teachers, 141–142; *see also* teachers, AI chatbots in language teaching use in digital storytelling
 vocabulary learning, 265; *see also* vocabulary acquisition
- ChatGPT affordances, 157; 163; 166
- Chinese English language learners, 157–158; 162–163
- Cultural, linguistic, and psychological challenges of, 168
- perceptions of ChatGPT for speaking proficiency, 158
- study of ChatGPT for speaking proficiency, 157; 162
- use of ChatGPT for speaking practice, 163; 165
- Chinese language education; 95–96; 99–102
- AIGC applications in, 89; 91; 102
 applications in other educational settings, 101
 assessment and feedback using AIGC, 93
 case study using short video production, 96
 evaluation of AIGC integration, 99
 quality control of AIGC materials, 95
 teacher development with AIGC, 100
- CityGen3D, 214
- Claire chatbot, 37
- classroom almanac, 45
- classroom climate changes with Quizlet integration, 122–123
- classroom observation notes
 appendix of sample notes, 130
 recording student engagement behaviors, 121
- cobots in language education, 264
- cognitive load, 12; 226
 AI tools and, 11; 167; 270
 caption reduction strategies, 236
 caption type selection, 235–236
 extraneous cognitive load, 223; 237
 in second language learning theory, 219; 222; 238
 learner proficiency and caption comprehension, 227–228; 235
- collaborative intelligence, 100
- collaborative learning, 13–15

- across linguistic and cultural barriers, 6; 13; 15
- designing collaborative activities, 11
- digital storytelling and, 74–75
- Google Docs, use in, 14
- pair work in VR, 201; 204
- Quizlet Live team game, 131
- collaborative planning AI tools for, 10
- Common European Framework of Reference (CEFR), 139
- communicative competence improvement through AI chatbots, 134
- communities of practice for sharing best practices and professional development, 101–103
- community engagement AI tools for, 17
 - In SLA and SCT, 17
 - through story-sharing event, 66
- comprehensible input; *see also* Krashen, Stephen
 - adaptive assessments and, 177
 - artificial intelligence and, 11; 92; 102
 - in captioned video, 221
 - in teaching frameworks, 8
 - in virtual reality, 197; 199–201
 - in VR activity design, 205–206
 - Krashen's input hypothesis, 90; 223
 - vagueness of definition, 205
- comprehension analysis multiple levels of, 49
- computer-assisted language learning (CALL), 81
 - advancement by AI-driven tools, 90
 - ICALL compared with traditional CALL, 269
 - teachers as facilitators, 35
- context loss, 157
- controlled interaction, 206
- Convai, 214
- conversational agents (CAs), 81; 267
- corrective feedback
 - lack of in ChatGPT, 157; 168
 - in adaptive learning, 246
 - in virtual reality, 200; 204; 206
- creativity, 99–102
 - as embedded competency in teacher development, 100
 - as evaluation dimension, 99
 - concerns about AI tools, 20
 - creative activities in language learning, 78; 101
 - digital storytelling and, 74; 81
 - genuine creativity in AIGC collaboration, 102
- critical agents; teachers as, 23
- critical AI literacy, 39–40
 - as foundational guide for teacher education, 36
 - as pedagogical approach, 39
 - critical noticing questions, 68
 - definition of, 31; 34
 - frameworks for integrating LLM tools and policies, 21
 - in teaching practice, 53; 111; 123; 151
 - key assumptions of framework, 40
 - necessary for equitable education, 21
- critical co-discovery approach, 33
- critical information literacy, 70
- critical linguistic praxis, GenAI lesson scaffold analysis; 43

critical literacy, 31; 34; 39; 41; 52; 151

critical pedagogy, AI integration in language teaching, 24

critical digital pedagogy, 114–115

sociopolitical awareness; 71

critical thinking, 21; 37; 74; *see also* criticality

AI tools; concerns about, 20

distinct from criticality, 33

criticality; 33–34; *see also* critical thinking as literacy pursuit for social justice emergence

through productive struggle, 50

foundational construct in language teacher education, 52

in teacher-in-the-loop approach, 34

inviting through sociopolitical awareness, 71

cross-linguistic transfer captions in heritage education, 237–238

cultural identity, 75; 77; 84

cultural narrative, 73; 77

culturally responsive and sustaining pedagogies, 83–84

affective filter; lowering, 84

AI tools for inclusivity, 8; 12

community stories, inclusion of, 83

digital storytelling, 77

lesson planning, 39; 45; 66

place-based education, 63

sociocultural contexts, reflection on, 60

culture, 7; 24

activities and materials for cultural learning, 61–64; 66; 83

AI language learning, cultural awareness in, 167; 276–277

culture shock in classroom settings, 84

custom VR development, 210; 215

cybersickness, 207–208; *see also* virtual reality

mitigation strategies, 202; 208; 213

prevalence among students, 207

D

data privacy, 15; 21

as ethical concern, 19; 114; 277

in AI applications, 94; 96; 134; 272

differentiated instruction, 14–15; 182–183

AI personalization, 11

challenges in face-to-face classrooms, 183

for multilingual learners, 14

in SIOP model, 15

personalized learning via PAL, 182; 186

principles for adaptive learning, 248–249

teacher-mediated differentiation, 18

time for; through AI and digital tools, 121; 123

digital devices in classrooms, 76–77

impact on language learning, 76

understanding students' perspectives, 77

digital divide, access to AI technologies, 16; 19

bridging the gap, 12; 22

exacerbation of, 52; 134

digital literacy, 91–97; 99–103

AI literacy, 21–22; 123; 146
in language learning, 35; 81
in VR education, 212
of young learners, 76
professional development for
AIGC integration, 101–103
digital media, 75–76; 81
digital storytelling, 73–74
digital natives, 74; 76
digital pedagogical reflection
fostering collaboration, 75
reflection prompts for
evaluating AI tools, 123
digital storytelling, 76; 81
benefits for language learning,
80; 86
bridging language and culture,
77
culturally sensitive teaching,
83–85
definition of, 73–74
elements of, 77–78
extension activity, 65
generating learning materials
and experiences, 85–86
strategies for multilingual
learners, 75
tools, 61; 79; 209
virtual and augmented reality
with, 82
digitally mediated language
learning (DMLL), 35
discourse analysis of GenAI
outputs, 47–48
do-now activities, 121; 131
Dörnyei's L2 Motivational Self
System, 254
dual coding theory, 221–222; 238
as theoretical foundation for
caption use, 219–220
in captioned second language
learning, 221–222

Paivio; Allan, 221–222
verbal and nonverbal
processing, 221
dumb and deaf approach, 165
Duolingo, 14; 17; 274
adaptive learning features, 13;
176; 265; 267
gamification, 209; 268
dynamic approach for caption-
type selection in language
learning, 219; 234–235; 238

E

educational equity, 21–24; 52–53
access to technology and the
digital divide, 16; 18–19; 21–
23; 42; 271
AI and equity in second
language acquisition, 12–13;
24; 144; 150; 237
cost barriers and OER/adaptive
tools, 178; 243; 245; 251–252;
254; 256
equity concerns and ethics, 23;
31
inclusive teaching practices, 40;
47; 53; 77–78
systemic inequities in language
education, 52; 124
educational inequality, 101; 124;
245
AI-related inequities, 21; 68; 134
digital divide, 19; 22; 52; 271
open educational resources and
peer learning, 254; 256
EFL teachers and students'
experiences with AI chatbots,
161
Chinese ELLs' use of ChatGPT
for speaking practice, 165–
166; 169–170

differential use by teachers and students, 141–142
 difficulty crafting prompts, 150
 research approach and aims, 138–139; 146–148
 use of ChatGPT for writing improvement, 151
 ELED framework, 263
 AI integration into phases of, 275
 in AI integration, 273; 277
 phases of, 274
 empathetic AI, 163; 166–167; 169
 endangered languages, 82
 environmental impacts of GenAI, 42
 ecocritical considerations, 32; 36
 ecological costs of data-intensive AI, 21
 energy, carbon, and water footprints, 38
 experiential learning, 9; 199; 269
 expertise reversal effect, *see also* cognitive load in L2 captioning, 225; 235
 explanatory case study design use in study of faculty PAL adoption, 180–181
 explicit vocabulary instruction, 9
 extended reality (XR), 236; *see also* virtual reality as smartphone replacement, 214
 extensive reading, 110
 eye-tracking attention distribution in bilingual subtitles, 227–228

F

faculty collaboration, 175
 fostered by internal grants at UCF, 189

 peer influence, 182; 186
 faculty resistance
 to adaptive learning, 178
 to AI adoption, 94
 fear of negative evaluation link with speaking anxiety, 160
 FERPA (Family Educational Rights and Privacy Act), 37; 47
 Flashcards, 130–131
 audio features, 113; 119
 classroom use, 115; 117; 122–123; 131
 physical, 130
 flipped instruction lesson model for GenAI output analysis, 50–51
 Florida foreign language requirement, 180
 form-focused instruction; *see also* Noticing Hypothesis
 adaptive learning and, 246–247
 virtual reality and, 199; 201
 form-meaning mapping, 113; 224; 233
 formative assessment, 3
 AI tools for, 15–16; 123
 alignment with learning goals via Quizlet, 120–121
 continuous assessment via Quizlet, 118
 in adaptive systems, 178
 observation during group discussions, 65
 timely feedback via Quizlet, 117
 full unitary repertoire, 34; 60
 funds of knowledge, 45; 60; *see also* culturally responsive and sustaining pedagogies

G

Gamification, 9; 268

vocabulary games, 13; 16; 123;
130

Gass; Susan, 205–206
comprehensible input,
vagueness of, 205
feedback loops and noticing of
form, 197
feedback, as indicator of
success, 206

Gemini; *see also* ChatGPT
in EFL teaching, 141
in VR development, 211

generative AI, 3–4; 7–8; 14; 16; 37–
38; 42; 44; 47; 93–95; 113–114;
141–142; 211
as planning partner for
teachers, 10–11

ChatGPT for speaking
proficiency, 158; 165

critical AI literacy; *see also*
critical AI literacy analysis of
outputs, 22; 36; 45–46; 48–49;
instructional models, 21; 50–
52

digital storytelling, 77; 79

hallucinations, 71; *see also*
hallucinations; history of, 5

in Chinese language education,
96–99; 101

teacher perceptions, 35

teacher-in-the-loop approach,
34–36; 46

GliGlish, 141

Google Assistant, 159

Google Translate, 12; 273

grammar-translation method, 91

Grammarly, 13; 16; *see also*
corrective feedback

H

Hallucinations, 17; 71; *see also*
generative AI, hallucinations,
perpetuation of whiteness, 38

hand-raising, 115; 122; 131
as engagement metric, 121; 123;
130

heritage language, 52; 117; 245; *see also*
multilingual learners,
heritage learners maintenance
and community-based learning,
237–238

high-leverage practices
differentiation, UDL, and
culturally situated examples, 70

human interaction; 9
desire for human interaction,
143; 166
limitations of AI, 135; 158; 161;
266; 276
peer collaboration, 204; 206
preserving in AI-enhanced
learning, 18; 94; 277
role in language learning, 12; 21
simulation by AI, 89–90

human-centered design, 19; 40

human-in-the-loop, 34; 276; *see also*
algorithm aversion,
keeping humans in the loop
teacher-in-the-loop approach;
31; 45–46; 53; *see also*
generative AI, teacher-in-the-
loop approach

I

ICALL, 269

immediate feedback, 13–14
in adaptive language learning,
177

- in AI chatbot interactions, 144; 151; 160; 165
- in AI-powered learning, 4; 121
- in assessment, 93
- in language learning with captions, 230
- in pronunciation practice, 13
- in Quizlet activities, 113; 119; 131
- in Realizeit platform, 185–187
- in virtual reality activities, 200; 202; 206
- in vocabulary instruction, 14
- ImmerseMe, 274
 - ready-made scenarios and structured lessons, 209
 - reflection on feedback, 198
- immersive learning, 215
 - AIGC potential for immersive learning, 92
 - for Italian language learning, 201; 205; 207–209
 - in virtual reality language platforms, 274
 - inclusive design of, 213
 - teacher training for, 212
 - through automated scene generation, 214
 - virtual reality for cultural awareness, 269
- Incidental vocabulary learning, 137; 207
 - in caption research, 226
- inclusive pedagogy, 83–85
 - AI tools for inclusive learning, 4; 41; 111; 144
 - culturally sensitive approaches, 83–84
 - differentiated instruction, 123
 - digital tools for inclusive teaching, 85; 213; 243
- Indigenous community literacies, centering in lesson planning; 63
- inductive GenAI learning skill development for teacher candidates, 45
- information processing frameworks, 220
 - cognitive load theory, 222
 - dual coding and cognitive load theories, 221
- Input and Output Hypotheses, 8; 223; 266
 - alignment with AIGC, 90; 102
 - output hypothesis, 92; 206
- input enhancement; *see also* Noticing Hypothesis in flashcards, 113; 115
- institutional grants for adaptive learning initiatives, 189
- instructed second language acquisition (ISLA), 3; 223; *see also* task-based language teaching (TBLT)
 - virtual reality applications, 195–196
- instructional design, 3; 212; *see also* ADDIE model
 - AI integration in second-language education, 263–264; 273–275
 - collaboration with faculty in PAL implementation, 187
 - collaborative instructional planning with GenAI, 44
 - faculty training in adaptive learning, 189
- integrated platform for AIGC in education, 101
- intelligent tutoring systems, 176; 264; *see also* adaptive learning benefits for language learners, 178; 265

effectiveness compared to
 human tutoring, 275
 vocabulary improvement, 112
 Intensive English Program (IEP),
 164
 Interaction Hypothesis; *see also*
 Input and Output Hypotheses
 key mechanisms of, 197
 linguistic environment, 266
 interpretive tolerance, 157
 involvement load perspective, 113
 Italian language virtual reality
 instruction for, 201–202; 204–
 205; 215

J

judgment-free environment, 16;
 78; 264
 affective filter reduction, 8; 14;
 84; 197–198; 200; 225
 AI, cultural and emotional
 support from, 167–170
 AI, speaking practice with, 9;
 159–160; 265
 AI, writing feedback with, 13;
 113

K

Kahoot use and limitations as
 intervention tool, 118
Keep Talking and Nobody Explodes
 used in TBLT research with EFL
 students, 199
 Khan Academy, 14–15
 AI tutor for scaffolding in math
 and science, 14
 AI-driven formative assessment
 tools, 15
 Khanmigo Socratic platform, 51

Kirkpatrick's Four-Level Model
 used to evaluate AIGC training
 seminar, 99–100
 Krashen; Stephen
 affective filter hypothesis, 14;
see also affective filter
 input hypothesis, 8; 200
 adaptive assessments, 177
 adaptive learning and, 266
 input hypothesis,
 AIGC and, 90; 92
 captioned video and, 223
 VR and, 205

L

language learning anxiety, 158
 reduction through chatbots,
 134; 265
 reduction through ChatGPT,
 157; 159–160
 reduction through low-stakes
 practice, 14
 reduction through virtual
 reality, 197–198; 200–201
 speaking anxiety, 166
 Language Reactor glossed caption
 function, 229
 large language models (LLMs), 97;
 112
 as virtual reviewer and
 exemplar source, 16
 ChatGPT-generated lesson
 plans, 59; *see also* ChatGPT,
 lesson-planning tool
 definition and significance, 5
 for English speaking practice,
 165–166
 in critical AI literacy
 frameworks, 21; *see also*
 critical AI literacy,

frameworks for integrating
 LLM tools and policies
 low-stakes conversational
 practice, 3; 9; *see also* low-
 stakes AI tools,
 conversational practice
 personalizing instruction to
 proficiency levels, 11; 14
 use for homework clarification
 and independent practice, 17
 layering texts practice in critical AI
 literacy, 46
 multiple perspectives alongside
 GenAI outputs, 69
 learner autonomy, 244; 264
 AI chatbot effectiveness, 144–
 145; 148; 150; 160
 AI technologies fostering, 12; 81;
 265; 268
 digital age learners, autonomy
 of, 75
 facilitated by captions, 220; 224;
 234
 fostered by adaptive learning
 platform, 247; 252
 metacognition and, 16; *see also*
 metacognition promoted by
 VR
 language learning, 198; 215
 Q-Chat; post-class review and
 self-assessment, 118; 122
 reduced; in AI-enhanced
 learning, 263; 266; 277
 learning analytics AI dashboards
 for grades and learning
 patterns, 275
 measuring student
 engagement, 259
 learning styles, 201; 215
 lesson planning change, 120–121

as introductory activity and
 continuous assessment, 118;
see also Quizlet, formative
 assessment use style, 120
 time savings, 121; 123; 143
 low-stakes AI tools, 13–14
 as starting point, 123
 conversational practice, 9; *see*
also large language models
 (LLMs), low-stakes
 conversational practice
 for formative assessment, 16
 low-stakes feedback in informal
 contexts, 18
 providing scaffolds, 24

M

machine learning, 133
 deep learning as a subset of, 267
 history of, 5
 in adaptive language learning,
 175; 177; 267
 in language education, 263–265
 machine-gradable assignments,
 185
 Magic School AI as thinking
 partner for lesson planning, 11
 usability testing by teacher
 candidates, 47
 matching games
 Quizlet matching mode, 113
 used for checking
 understanding; 130–131
 Memrise, 14; 16
 mentor text, 45; 60
 Meta Quest, *see also* virtual reality
 for language learning, 209
 use in Italian language VR case
 study at Ohio State University,
 195; 201
 metacognition, 64

- AI-assisted reflection, 6; 15
 - in inferential comprehension, 49
 - in second-language acquisition, 16
 - Microsoft Translator, 12
 - Midjourney, 79
 - minoritized students, 117; 243
 - adaptive tools and learning gaps, 178
 - criticality, sociopolitical implications of, 52
 - impact of PAL/OER on grade outcomes, 254–255
 - role in course redesign, 253
 - Mondly virtual reality, 197; 274
 - multicultural education, 7; *see also*
 - culturally responsive and sustaining pedagogies cultural narratives AI reframing of, 13
 - digital storytelling and translanguaging pedagogies, 83; 85
 - racial stereotyping and social inequities, AI amplification of, 19
 - multilingual learners, 8; 10; 13; 17–18; 20; 23; 43; 59; 75–76
 - communication with families, 12
 - conversational practice with AI, 9; 14
 - culturally responsive pedagogy for, 66 demographics, 6–7
 - digital storytelling; benefits of, 73; 77–78; 85
 - personal narratives and cultural ties, 78; 83
 - with AI personalization, 80
 - with VR/AR, 82
 - heritage learners, 117
 - multilingual storytelling, 61
 - WIDA standards and lesson plans for, 44–45
 - Multiliteracies; definition of, 34
 - explored through GenAI tools, 45
 - in language teacher preparation, 43
 - multimedia learning effect, 274;
see also dual coding theory
 - multimodal learning, 219–220; 237
 - in caption-based language learning, 225; 233
 - in virtual reality for second language acquisition, 199–200
 - vocabulary learning with digital flashcards, 113; 115; 117–118; 122
 - MyEnglishLab, 176
 - adaptive difficulty and feedback, 176
- ## N
- narrative inquiry in ChatGPT speaking practice study, 157; 164; 169
 - Natural Language Processing (NLP), 265; 267; 276
 - adaptive assessment for second language acquisition, 177
 - affective elements and sentiment analysis, 266
 - in chatbots, 135; 138; 146
 - in computer-assisted language learning (CALL), 90
 - negotiation of meaning, 75; 206;
see also Interaction Hypothesis in virtual reality activities, 204–205
 - neural networks, 5

neurodiverse learners, 253; *see also* Universal Design for Learning (UDL)

Noticing Hypothesis, 244

Captions, 221; 223; 229

in VR environments, 199; 201

machine learning; alignment with, 267

vocabulary learning, 113–114; 122

novelty effect

declining interest in chatbot interactions, 136

drawback of AI chatbots, 134

O

Ohio State University, VR in Italian language instruction, 195–196

open educational resources (OER), 188–189; 247–254; 256–259;

benefits of, 247–248

cost reduction and faculty commitment, 185–186; 188; 243–244; 250; 252

curriculum integration and expansion, 180; 256; 258–259

definition of, 247

impact on student outcomes, 251; 254; 257

integration with adaptive learning platforms, 189; 249; 253

open learner models, *see also* metacognition motivation through progress tracking, 269

overreliance on AI, 91; 114; *see also* critical AI literacy

algorithmic overreliance, 263; 267; 277

avoiding overreliance, 52; 123

grammar and accuracy issues, 157; 168

impact on teaching and educators, 35; 94; 272

language development deficiencies, 133–134; 144; 148; 150–151

social isolation from peers and teachers, 21

P

pair work, 204–205

in VR placement tasks, 201–202; 204

PAL and OER implementation, 180; 243; 246; 249–251; 256; 258

student outcomes, 254

parasocial interactions in GenAI-mediated learning, 52

participatory action research (PAR), 109–111

as methodological framework, 111

cyclical process of, 116; 118; 122

in AI-integrated language pedagogy, 109–110

pause and reflect sections, 45; 61–62; 64–66

guiding questions and prompts, 59–60

pedagogical interventions, 236–237

beta-testing of virtual rooms, 207–208

caption pacing strategies, 236

ChatGPT-assisted practice with teacher-led feedback, 168

instructional design frameworks, 275

strategies for embedding AI in curricula, 94

teacher training for captioning,
237 usability testing of GenAI
tools, 47

peer correction, 204–206
in VR language tasks, 204–205
scaffolding and ZPD, 206

personalization of the story, 78; 85

phonological competence, 83

place-based education models, 63

placement testing, 183; 186

power dynamics
GenAI and, 68
lack of decision control by
educators, 276

problem-posing inquiry about
GenAI, 67

process-oriented usage definition
of, 53

professional development, 47;
124; 237
AI and digital literacy, 94; 102–
103; 123
virtual reality, 212; 215

professional learning
communities, 10; 22; 103; 189

prompt engineering, *see also*
prompt libraries
difficulty in crafting prompts,
145; 148; 150–151
in language instruction, 44; 97;
100

prompt libraries, 101; *see also*
prompt engineering

pronunciation assessment, 16; *see*
also pronunciation practice
lack of voice recognition in
Realizeit, 188

pronunciation practice; *see also*
pronunciation assessment
caption pronunciation
guides, 229–230

Quizlet audio for, 118–119; 122;
131

Q

quality control in AIGC
for language
education, 95

Quizlet, 13; 116
AI-driven flashcards and spaced
repetition, 14; 16
AI-powered features in language
teaching study, 111–112

classroom activities using,
131 formative assessment
use, 121

multisensory approaches to
vocabulary learning, 113

pedagogical shift, 120; 123

SLA-informed design and task
conditions, 113; 115; *see also*
task-based language
teaching (TBLT)

student engagement, 122

use for vocabulary instruction,
111; 116–121; 123; 131

use in Spanish classroom, 117–
119

R

Realizeit; 255
adaptive learning pathways,
245–246; 251
as review tool with classroom
instruction, 186

autonomous learning and FFI
integration, 247

cost concerns, 188

criteria for choosing, 251–253

cumbersome quiz correction,
188

differentiated instruction, 248–250
 expansion to Spanish courses, 258
 feedback system lacking direct lesson links, 187–188
 form-sensitive learning environment, 247–248
 immediate feedback, 185; 187
 impact on student success, 254
 peer influence on adoption, 182
 platform complexity and usability concerns, 187–188
 student feedback on, 250; 257–258
 voice recognition, lack of, 188
 RECIPE; tool for essay revision, 136
 Reflectly, self-reflection and AI analysis of learning trends, 15–16
 register (linguistics), ChatGPT for learning formal register, 137
 relational learning, 24
 responsible AI, ethical and privacy concerns, 96; 134
 in second language education, 277
 transparency and explainability, 272
 retrieval practice, 130; *see also* spaced repetition; Quizlet matching and test modes, 113; 115
 Rosetta Stone Classroom; adaptive learning platform, 266
 rote memorization, 91; 95

S

Scaffolding, 14–15; 20–24; 44–45; 113–115; *see also* zone of proximal development
 AI-assisted scaffolding, 3–4; 10–11; 22; 24
 disruption by AI, 21
 for academic language and literacy, 18; 45; 60
 for diverse learner profiles, 41
 in adaptive learning platforms, 177; 246; 249
 in ChatGPT-generated lesson plans, 39
 in second language acquisition, 6; 8; 15; 114
 in virtual reality, 197–198; 206; 208; 212
 progressive reduction of caption support, 233
 reconfigured by AI, 20; 23
 teacher training and professional development, 35–36; 44; 50
 video-recorded mini lessons as scaffold, 62
 with MagicSchool, 47
 with Quizlet, 113; 115
 scenario-based conversations
 diverse scenarios, 160
 for bridging BICS to CALP, 11–12
 fostering engagement and confidence, 157
 practicing pragmatic language functions, 167
 School administrators, 37; 259
 role in AI integration in SLA, 23
 school-wide AI policy students' need for explicit policy, 146; 148; 150
 second language acquisition, 3; 81; 114
 AI as mediating tool, 5; 23
 AI chatbots in, 133; 135–136; 162
 AI in, 4; 9–10; 24; 263; 267; 277
 AI integration in classrooms, 11–12; 14
 AI integration; guidelines and frameworks for, 22; 275

- AI-generated content (AIGC) in, 89–90; 102
 - captioned video in, 220
 - practical applications, 225–228; 233
 - theories of, 219; 221–223; 229; 235; 238
 - cultural-linguistic identities in, 75
 - differentiated instruction in, 248–249
 - digital literacy and technology access in, 35
 - digital storytelling in, 79; 86
 - equity and AI in, 13; 19
 - form-focused instruction in, 246
 - metacognition in, 16
 - natural language processing (NLP) in, 265
 - personalized and adaptive learning in, 177; 188; 244; 247; 276
 - Quizlet tasks, SLA-informed design of, 113; 115
 - sociocultural theory and, 6; 17–18; 21
 - speaking practice and proficiency in, 159–160
 - virtual reality (VR) in, 195–197; 201
 - semantic mapping, 48
 - short-form video
 - caption challenges in language learning, 236–237
 - in Chinese language education, 95–97
 - simulation, 6; 211
 - instructional scenario
 - simulations for teachers, 37
 - LLM-mediated language practice, 11–12
 - real-world scenario simulations for language practice, 9; 22
 - VR simulations for language learning, 82; 201; 265
 - SIOP, 4; 18
 - AI-assisted planning, implementation, and assessment, 9–10
 - differentiation and scaffolding, 15
 - mediation in AI-supported instruction, 8
 - scaffolding and background knowledge; 11–12
 - Skinner; B. F., 176; *see also* teaching machines
 - Smart English adaptive assessment platform, 22
 - social affordances, 162
 - definition of, 163
 - for authentic speaking practice, 169
 - roles as language tutor and conversational partner, 166
 - social presence definition of, 163
 - social-emotional learning (SEL) as preventive measure for GenAI chatbot interactions, 52
 - in inclusive learning environments, 13
 - in language learning, 7; 21
 - in VR language learning, 214
- sociocultural theory (SCT), 3; 196; *see also* Vygotsky, Lev
- AI integration in language learning, 8; 10; 18; 20; 22–24
 - community engagement and second-language acquisition, 17
 - core constructs, 5–6
 - emphasis on identity and interaction, 21
 - funds of knowledge, 49
 - mediation in VR contexts, 197–198

- social and mediated nature of learning, 4
 - source verification, 49
 - of GenAI outputs, 71
 - spaced repetition, 113; 115
 - in AI vocabulary tools, 14
 - in second language acquisition, 9; 114
 - speech generation, 98
 - speech segmentation, 225
 - station rotation model for managing limited VR headsets, 213
 - strategy instruction, 7; 50
 - student diversity, 244; 252
 - adaptive learning and digital tools, 248–249; 256
 - inclusive VR design, 213
 - minoritized and neurodiverse learners, 253
 - student engagement, 16; 32; 35; 50; 95; 111; 113; 117–118; 149; 180; 234; 249; 254; 264; 268; 274
 - chatbots and, 135; 159–160; 168
 - digital storytelling, 75
 - game-based learning tools, 13; 115; 120–121; 123; 130–131
 - personalized adaptive learning (PAL), 178; 185; 188; 243; 248; 256–257; 259
 - student proficiency levels,
 - variation in accommodated through adaptive learning, 249; 252
 - addressed through PAL, 186; 243
 - as challenge in Spanish courses, 182–183
 - effect on prompt crafting, 150
 - entry-level learners; reliance on explicit feedback, 168
 - in Chinese ELLs using ChatGPT, 162
 - in dynamic caption selection, 234
 - prior knowledge of Spanish as source of variation, 245
 - tailored AI assessment, 22
 - student retention, 15; 249–250; 257
 - improved by personalized adaptive learning and open educational resources, 178; 243; 254
 - student-centered learning
 - customization to individual needs, 254; 276
 - fostered by PAL and OER, 243
 - learner-centered environment, 249
 - materials generation, 85–86
 - shift to technology-driven teaching, 120; 123
 - through prior knowledge, translanguaging, and student agency, 45
 - student-led portfolio conferences, 66
 - students' reflections, 109; 115; 119; 257
 - academic language moves, reflection on, 12
 - AI; scaffolding of reflection with, 15
 - classroom climate; change in, 122–123
 - GenAI analysis; collective reflection on, 50
 - Sustainability, 31; 53
 - as model for educational innovation, 101
 - environmental impact of GenAI, 38; 42
- T**
- Talk Abroad, 17
 - task-based language teaching (TBLT), 195–199

- definition and origins, 198
- in virtual reality, 195–197; 199; 201; 207
- teachers, 3; 5; 7–14; 17; 22; 37; 47; 60–61; 65–66; 84; 92; 110; 263; 273–274; 278
- adaptive learning (PAL)
 - implementation, 178–181; 183–185; 187–190; 259; 266
- AI chatbots in language
 - teaching, 133–139; 141–152; 168; 170
- benefits of AI for teachers, 41; 267–269
- captioning; use of, 232; 234; 237
- critical literacy framework for teacher preparation, 38–39; 45; 48–52; 59
- digital literacy in AI-mediated teaching, 91; 93; 95–97; 103
- digital storytelling, 73–77; 79–81; 85
- equity and professional concerns in AI integration, 19; 271–272
- human element in AI-mediated learning, 4; 6; 18; 21; 24; 94; 264; 275–277
- professional development for AI integration, 32–33; 89; 94; 99–102; 112; 124
- Quizlet integration, 117–123; 131
- teacher agency and roles, 31; 43–44; 109; 111; 113–114; 123
- teacher-in-the-loop approach; 34–36; 40; 42; 46; 53; *see also* human-in-the-loop; teacher-in-the-loop approach
- virtual reality, use of, 196; 198; 200; 205–210; 212–215; 265
- teaching machines foundation of adaptive learning, 176
- technological proficiency, 37
- challenge of, 270–271
- digital literacy, need for, 93–94; 96; 101; 103; 212
- technology-enhanced instruction, 77; 124; 185; 271
- adaptive learning and course redesign, 179–180
- AI chatbots and ChatGPT, 133–134; 162
- AI for accessibility, 12
- AI integration in SLA, 22–23; 103; 109
- AI-powered learning tools, 116; 121; 131
- captioned videos in digital multimodal environments, 233–234; 238
- digital storytelling tools, 66
- shift to technology-driven instruction, 110; 120; 123
- video-recorded mini lessons, 62
- virtual reality (VR) for language learning, 195–196, 199; 207; 212–213
- TESOL
 - AI alignment with TESOL, 10; 14; 18
 - AI in, 8
 - as a foundational framework, 4
- text chatbots; *see also* voice chatbots
 - for educational content generation, 97
 - pedagogical chatbots, study of, 135
 - preference over voice chatbots, 147; 149
 - text-only interface, limitations of, 161
- Textbook Affordability Survey, 250–251
- textbook costs, 184–186; 250–251; *see also* open educational resources (OER)

cost-reduction efforts, 182; 184–185; 250
 impact on students, 186; 245; 251
 in Spanish language courses, 184
 textual enhancement; *see also* captions
 caption enhancement forms, 219; 223; 228; 236; 238
 tiered vocabulary analysis, 43
 categorizing Tier 1, 2, and 3 vocabularies, 47–48
 time efficiency, 133
 lesson preparation and materials, 120–121; 143; 147; 151
 reducing feedback time, 149
 topic-based codes, 182
 TPACK (technological pedagogical content knowledge) as framework for AI integration, 22
 development for critical reflective practice, 53
 in language teacher preparation, 31
 translanguaging as humanizing practice, 52
 institutional prioritization for language teaching, 85
 use in GenAI lesson plans, 45

U

under-resourced populations, 93; 117
 digital divide in AI, 19; 271
 minoritized and neurodiverse learners, 253–254
 technology and educational inequality, 134; 213
 Universal Design for Learning (UDL), 47; 213
 Unreal Engine, 210; *see also* Unity

usability testing, 47

V

virtual reality, 195–201; 205–215; 268–270
 accessibility and inclusivity, 213
 affordances for language learning, 199–201
 best practices and challenges, 195–196
 caption fatigue, 236
 content development, 210–211
 cultural awareness and contextual learning, 268–269
 definitions and applications in language teaching, 81–82
 future research directions, 213–214
 hardware and integration, 209
 integration with AI, 103; *see also* artificial intelligence; in virtual reality language education
 Italian language classroom use, 215
 language-learning platforms, 274
 sociocultural and collaborative learning, 197–198
 station rotation model, 213
 teacher training and digital literacy, 212
 VR-CCL framework, 270
 vocabulary acquisition, 35; 80; 109–112; 117
 AI chatbots, 136–137; 142; 147; 149
 AI tools for generating vocabulary lists, 10
 captioned videos, 224
 dual coding theory, 221–222
 explicit instruction for CALP, 9
 flashcards, 16; 123

- Quizlet, 113; 119–121; 131; *see also* Quizlet spaced repetition and retrieval practice, 13–14; 114
- virtual reality, 201–202; 206
- voice chatbots, 165; *see also* voice recognition in language learning, 137–138
- less frequent use than text-based, 166
- subscription requirements, 147; 149
- voice capabilities, 162
- voice recognition, 134–135; *see also* voice chatbots
- in language learning apps, 135
- limitations of AI chatbots, 134; 137
- pronunciation-related errors, 166
- VR-CCL (virtual reality-constructivism and cognitive load) framework managing cognitive load, 270
- VRChat language learning intervention, 208
- platform for multiplayer VR environments, 211
- teleportation and free movement, 202
- Vygotsky, Lev, 4–6
- sociocultural theory, 4; 6; 197
- zone of proximal development, 5; 200
- unpacking for lesson planning, 44
- word predictor, 110
- workflow-based model, 89; 100–101
- working memory, 221–223; *see also* cognitive load capacity in captioned video learning, 223
- limitations of, 221–222
- world language department, 124
- world language teachers, 116–117
- co-designing AI-driven learning interventions, 109; *see also* participatory action research (PAR)
- lack of pedagogical and professional development support, 124
- pedagogical use of Quizlet AI tools, 116; *see also* Quizlet, AI powered features in language teaching study
- Spanish teacher case study, 117; 130; *see also* Spanish language teaching; Quizlet, use for vocabulary instruction
- writing skills improvement with AI chatbots, 113; 141–143; 147; 151; *see also* ChatGPT, impact on writing development
- negative effects of AI reliance on, 273; *see also* overreliance on AI; language development deficiencies

W

- WIDA English Language Development Standards, 43–45
- ELD-LA.2-3 Narrate, 59
- GenAI lesson planning, 43; 45

Z

- zone of proximal development, 14–15; 18–20; *see also* Vygotsky, Lev

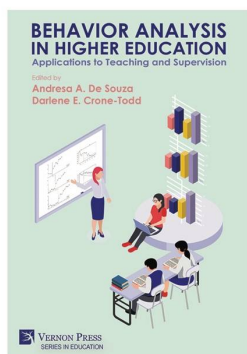
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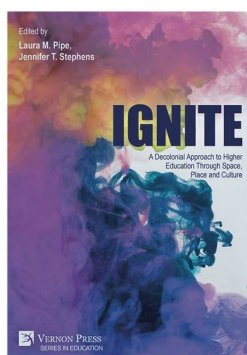
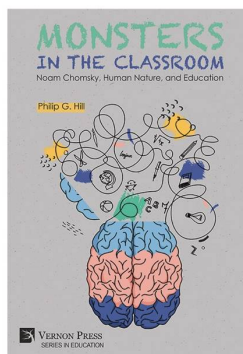
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