British Journal of Teacher Education and Pedagogy
ISSN: 2755-1482
DOI: 10.32996/bjtep
Journal Homepage: www.al-kindipublisher.com/index.php/bjtep

BJTEP
AL-KINDI CENTER FOR RESEARCH AND DEVELOPMENT

| RESEARCH ARTICLE

Student Autonomy in Second Language Learning: A Systematic Self-Review of Training, Skill Development, and Technology Enhanced Practices (2004–2025)

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| ABSTRACT
This study presents a systematic review (SR) of a longitudinal body of research on autonomous learning in foreign language education within the Saudi and Arab contexts. The corpus comprises 55 empirical studies published between 2004 and 2025, spanning diverse language skills, learner profiles, and instructional environments. The studies were categorized into three thematic clusters: (1) training for autonomous learning, (2) autonomous learning of specific language skills—including listening, speaking, pronunciation, reading, writing, grammar, vocabulary, ESP, translation, interpreting, and Arabic as a foreign language—and (3) autonomous learning by special-needs students, alongside a cross-cutting methodological matrix of technology-enhanced platforms such as online videos and animations, mobile applications, podcasts, TED Talks, text-to-speech software, social media, online courses, wikis, blogs, and online discussion forums. The synthesized results demonstrate that autonomous language learning in this regional context is both achievable and pedagogically transformative when supported by structured guidance and accessible digital tools. Autonomy emerges as a multidimensional construct encompassing goal-setting, time management, information-seeking, metacognitive regulation, and self-regulated learning behaviors. Across the diverse digital interventions, students consistently achieved measurable gains in linguistic performance, confidence, and motivation. Across the two-decade span of research, the findings remained remarkably consistent despite variations in learner profiles, instructional settings, and technological tools. This consistency strengthens the evidence base and demonstrates that autonomous learning is not context-bound but a stable, transferable pedagogical approach that supports learners across proficiency levels, course types, and delivery modes. The studies further highlight the critical role of the instructor as a facilitator who provides scaffolding, clear task structures, and supportive feedback that enables learners to assume greater responsibility for their progress. Moreover, the SR shows that autonomous learning fosters long-term resilience, supports differentiated instruction, and bridges gaps in high-cognitive-load domains such as ESP. By leveraging multimodal input and flexible pacing, technology-enhanced autonomous learning promotes deeper engagement and sustained independent practice. Overall, this systematic review offers the first comprehensive, longitudinal synthesis of autonomous learning within Saudi higher education, establishing a robust empirical foundation to inform curriculum design, policy development, and future AI-supported autonomous learning innovations.

| KEYWORDS
Systematic review (SR), Al-Jarf research program, autonomous language learning, autonomous learners, autonomous learning technologies, autonomous learning skill, autonomous learning training, self-directed language learning, technology-enhanced learning, multimodal learning.

| ARTICLE INFORMATION
ACCEPTED: 10 May 2026 **PUBLISHED:** 18 June 2026 **DOI:** 10.32996/bjtep.2026.5.6.5

1. Introduction

Autonomous learning[1] - also known as self-directed learning - is the process of learning on your own. It is essential because university education does not cover everything, and knowledge often becomes obsolete, requiring lifelong self-directed updates. Instead of depending entirely on instructors, autonomous learners take active ownership of their learning process, identify their own goals, select appropriate resources, manage their time, and evaluate their progress. Autonomous learning shifts the educational focus from rote memorization toward the development of lifelong learning skills. Autonomy leads to better learning outcomes, increased engagement, and the ability to solve personal problems. It provides a long-term vision and short-term motivation, helping students organize their resources to maximize their educational potential. Autonomy fosters adaptability, confidence and resilience, enabling individuals to navigate continuous challenges in their academic, personal and professional lives. Research has consistently linked autonomous learning to better retention, higher engagement, improved academic performance and stronger critical thinking and problem-solving skills. Learners who take control of their education often demonstrate greater motivation, self-regulation, and the ability to learn independently beyond formal instruction[2].

Autonomous learners typically have the following traits[3] that include independence, self-directed learning, intrinsic motivation, metacognitive awareness, strategic action, responsibility and accountability. These characteristics appear side by side in autonomous behavior. They take initiative without waiting for external guidance, identifying gaps in knowledge and seeking resources to fill them. They set their own learning goals, choose strategies, and monitor progress. Their motivation to learn comes from personal interest rather than external rewards. They are aware of how they learn and can adjust strategies to improve outcomes. They accept mistakes as part of the learning process and use them to refine their approach.

There are two main types of autonomous learning[4]. Full autonomous learning refers to situations in which the learners are entirely independent. They take full responsibility for decisions, materials, study schedules, and evaluation without the involvement of a teacher or structured educational institution. In contrast, semi-autonomous learning is a transitional phase in which learners guide their own progress, but still receive support and guidance from a teacher who acts as a facilitator or mentor.

In practice, autonomous learning involves setting clear, specific learning goals; choosing appropriate resources and methods, such as readings, exercises, videos, or digital tools, monitoring progress; adjusting strategies when needed and seeking opportunities to apply knowledge beyond formal instruction. For example, a language learner might independently choose listening materials, track improvement, and practice speaking outside the classroom, demonstrating initiative, self-regulation, and strategic action. Ultimately, autonomous learning empowers learners to take ownership of their learning, fostering motivation, adaptability, and lifelong learning skills that are essential in a rapidly changing world[5].

Since the onset of research on autonomous learning in the 1960s and 1970s, a substantial body of single studies, systematic reviews (SRs), and meta-analyses (MAs) has examined a wide range of issues as metacognition and self-regulation (e.g., goal-setting and self-assessment, the integration of educational technologies as digital platforms, pedagogical scaffolding and teacher–student role distribution, as well as cultural and contextual influences on learner independence.

A systematic review of the literature reveals three distinct thematic clusters of existing systematic reviews (SRs) in the domain of learner autonomy: The first group centers on digital modalities, examining the influence of flipped classrooms on university-level autonomy (Adrianzén Olano, 2026; Galindo-Domínguez & Bezanilla, 2025), mobile technology in EFL contexts (Alzubi, 2021; Huisen et al., 2024), and the pedagogical impacts of artificial intelligence (Azhar & Ahmad Rashid, 2024; Zulkefli & Ismail, 2025). Additional reviews in this cluster evaluate platform-specific interventions, including WeChat integration (Hui et al., 2023), Computer-Assisted Language Learning (CALL) in localized higher education (Kalyaniwala & Ciekanski, 2021, 2024), general ICT frameworks (Ye et al., 2024), blended learning systems (Moreira & Lima, 2024), virtual environments (Manosalva & Villamil, 2023), personalized digital assistances (Rusdi et al., 2024), and adaptive systems for learners with cognitive disabilities (Hocine & Sehaba, 2024). The second group investigates autonomy within structured institutional boundaries. This includes broad overviews of English language learners (Chong & Reinders, 2025; Lopes et al., 2019), language education praxis (Febriyanti, 2021), crisis-driven distance education during the COVID-19 pandemic (Marrufo Rojas et al., 2024), vocational training programs (Juan & Nagappan, 2025), and localized ESL/EFL landscapes such as those in Bangladesh (Jamila & Zubairi, 2022) or Morocco (Kharroubi & El Mediouni, 2024). The third group explores the underlying cognitive mechanisms of autonomy, focusing on self-regulated learning in the digital age (Faza & Lestari,

[1] Autonomous Learning: The Way Forward
[2] Autonomous Learning as a Sustainable Approach to Learning – The Techducator
[3] What Makes an Autonomous Learner? Key Traits and Skills • Teachers Institute
[4] What Makes an Autonomous Learner? Key Traits and Skills • Teachers Institute
[5] What Is Learner Autonomy and How To Promote It | Thinkific

2025), the intersection of self-regulated and self-directed learning frameworks (Gupta et al., 2024), learner-controlled instructional design (Hauk & Gröschner, 2022), project-based pathways (Nurzanah, 2025), and strategic self-regulation in English language teaching (Sari et al., 2026). The final group addresses the instructional side of the equation, targeting teacher autonomy (Huang, 2005), autonomy-supportive classroom structures (Patzak & Zhang, 2025), the relationship between teacher agency and student self-direction (Amini & Kruger, 2022; Yang et al., 2022), and teacher-related variables that facilitate or impede autonomous learning spaces (Nii & Yunus, 2022; Rusdi et al., 2024).

Despite the breadth of these existing reviews, several critical gaps remain: first, roughly half of the available SRs focus predominantly on technological tools (AI, CALL, mobile apps, blended frameworks). This creates an instrumentation bias where digital tools are extensively scrutinized, while actual learner behaviors, strategic adjustments, and developmental trajectories receive far less attention. Second, prior SRs lack a domain-specific understanding of how autonomy operates within concrete linguistic skills. Most international meta-syntheses fail to evaluate how self-regulation develops within distinct communicative dimensions such as reading, writing, listening, speaking, or translation. Third, existing reviews heavily synthesize student or teacher attitudes, perceptions, and external environmental factors, leaving a shortage of empirical evidence regarding what learners *actually do* when managing autonomous tasks over time. Fourth, the current literature is profoundly concentrated in East Asian, European, and North American contexts. The lack of contextual representation from the Arab world—specifically the Gulf region and Saudi Arabia—limits the global generalizability of current models and ignores the distinct sociocultural and bilingual dynamics of these settings. Fifth, prior SRs aggregate heterogeneous studies compiled by multiple authors, where each paper examines an isolated variable (e.g., a single app or one specific sub-skill). No prior review has evaluated a coherent, author-bounded research program that tracks the long-term evolution of learner autonomy across multiple skills, media, and instructional configurations within a single educational system.

To address these significant gaps, this study provides a systematic review of a unified, longitudinal body of empirical research on learner autonomy in foreign language education within the Saudi context. Utilizing a rigorous corpus of 55 studies published between 2004 and 2025, this review systematically explores: (i) Foundational autonomy skills and how learners acquire necessary self-regulatory habits; (ii) the manifestation of autonomy across specific linguistic sub-skills and translation domains; (iii) autonomous learning pathways adapted for special-needs students; and (iv) a cross-cutting methodological evaluation of the technological platforms that effectively support independent learning.

This study is significant as the first comprehensive, skill-oriented systematic review of learner autonomy within Saudi and Arab foreign language education. By synthesizing an internally coherent and longitudinal body of research across multiple skills and platforms, it offers a uniquely integrated perspective that directly counters the fragmented nature of existing international reviews. Methodologically, it documents actual autonomous behaviors within real academic tasks, illustrating how contextual and regional factors shape self-directed practices over a two-decade span. Furthermore, this study expands the geographical diversity of the field by bringing evidence from the Arab world to the forefront of global scholarship. Ultimately, this review establishes a theoretically grounded, empirically rich foundation to inform contemporary curriculum design, institutional policy-making, and future AI-supported autonomous learning innovations globally.

Moreover, this SR forms part of a broader, long-term research program in which the author has produced an extensive series of systematic reviews (SRs) and meta-analyses (MAs) across multiple domains of language education, linguistics, and pedagogy. These prior SRs have synthesized research on social media in EFL teaching and learning (Al-Jarf, 2026a), English for art education (2026b), EFL reading instruction (2026c), educational evaluation (2026d), translation errors (2026f), mobile-assisted language learning (2026g), adult reading practices (2026h), pronunciation instruction (2026i), Arabic reading pedagogy (2026j), grammar teaching (2026k), electronic searching skills (2026l), global dimensions in L1 school textbooks (2026m), cultural learning in L2 contexts (2026n), vocabulary learning (2026o), specific-skill assessment (2026p), Arabic–English transliteration (2026q), children's language development (2026r), classroom writing enhancement (2026s), collaborative digital learning (2026t), distance learning during COVID-19 (2026u), mind-mapping strategies (2026v), staffing challenges in EFL programs (2026w), innovative word-formation processes (2026x), interpreting pedagogy (2026y), listening and speaking instruction (2026z), online videos and podcasts for language learning (2026), spelling error analysis (2026bb), AI Arabic translation (2026cc), ESP innovation (2026dd), LMS-supported instruction (2026ee), and English–Arabic language dynamics (2026).

Positioned within this extensive body of systematic inquiry, the current SR contributes a new and distinct dimension by synthesizing research on student autonomy in second language learning—a domain not previously reviewed in the author's earlier SRs. It therefore extends the author's methodological tradition while opening a new line of inquiry into the development, enactment, and technological mediation of autonomous learning among EFL and AFL learners.

2. 2. Methodology

To be included in the corpus, all studies had to be conducted by the author and focus on training for autonomous or semi-autonomous learning. The scope encompasses various language domains, including autonomous learning in listening, speaking, pronunciation, reading, writing, grammar, vocabulary, culture, interpreting, translation, multiple language skills, and Arabic as a foreign language, as well as technology-based autonomous learning in language education. Included studies are characterized by either full autonomous learning or semi-autonomous learning configurations, where learners guide their own progress while receiving support and guidance from a teacher acting as a facilitator or mentor.

2.1 Study Corpus

The final study corpus consists of 55 empirical studies conducted by the author between 2004 and 2025, all of which investigate various dimensions of autonomous learning in foreign language education within the Saudi context. To enable a systematic synthesis, the studies were organized into 3 major clusters, 12 sub-clusters, and a cross-cutting methodological cluster that identifies the specific technologies and platforms supporting autonomous learning. Each cluster and sub-cluster reflects a distinct conceptual orientation toward autonomy. Together, these clusters provide a comprehensive, multi-skill, and multi-platform corpus that captures the evolution of autonomous learning research across two decades.

Cluster 1: Training for autonomous learning

This cluster includes eight studies that focus on developing learners' foundational autonomy skills, how learners acquire the dispositions, strategies, and metacognitive habits necessary for sustained autonomous learning. The studies include the following:

1) *Autonomous learning skills (Al-Jarf, 2009a).*
2) *Steps in advising translation students to learn English autonomously (Al-Jarf 2014d)*
3) *Self-improvement for business, engineering and computer science students (Al-Jarf 2018b)*
4) *Autonomous language learning in distance education (Al-Jarf 2020a)*
5) *Autonomous learning for Saudi students studying abroad (Al-Jarf 2010b)*
6) *Self-improvement for EFL college students (Al-Jarf 2010h)*
7) *Strategies for Autonomous Learning in an Arabization Course (Al-Jarf, 2010i)*
8) *Helping EFL College Students Become Autonomous Presenters (Al-Jarf, 2010g)*

Cluster 2: Autonomous Learning of language skills

This cluster comprises 12 sub-clusters addressing autonomy in specific linguistic domains shown below:

Sub-cluster A: Autonomous Listening and Speaking

9) *Developing EFL students' listening and speaking skills with Talkenglish (Al-Jarf 2015a)*
10) *Mobile technology and student autonomy in oral skill acquisition (Al-Jarf 2012b)*
11) *Mobile audiobooks, listening comprehension and EFL college students (Al-Jarf 2021g)*
12) *TED talks as a listening resource in EFL college classrooms (Al-Jarf 2021i)*
13) *Integrating TED lectures in EFL college listening practice (Al-Jarf 2020d)*
14) *Enhancing EFL students' oral skills with online videos (Al Jarf, 2010c)*

Sub-cluster B: Autonomous Pronunciation

15) *YouTube videos as a resource for self-regulated pronunciation practice (Al-Jarf 2022l)*
16) *Improving Students' Pronunciation with Online Videos (Al-Jarf, 2013b)*
17) *Text-to-speech software for promoting EFL freshman students' decoding skills and pronunciation accuracy (Al-Jarf, 2022k)*

Sub-cluster C: Autonomous Reading

18) *Enhancing EFL students' reading skills with online videos (Al-Jarf, 2010d)*
19) *Collaborative Mobile eBook Reading for Struggling EFL College Readers (Al-Jarf, 2021b)*
20) *Effects of online collaborative activities on second language acquisition (Al-Jarf, 2009b)*
21) *Reading in the App Store (Al-Jarf, 2012)*

Sub-cluster D: Autonomous Writing

22) *Exploring discourse and creativity in Facebook creative writing by non-native speakers (Al-Jarf 2018a)*
23) *Discourse and Creativity Issues in EFL Creative Writing on Facebook (Al-Jarf, 2015b)*
24) *Social networks and creative writing in EFL (Al-Jarf 2014c)*
25) *Online instruction and creative writing by Saudi EFL freshman students (Al-Jarf 2007)*
26) *Blogging about Sustainable Development in the EFL College Classroom (Al-Jarf, 2025)*
27) *Blogging About Current Global Events in the EFL Writing Classroom: Effects on Skill Improvement, Global Awareness and Attitudes (Al-Jarf, 2022a)*
28) *Blogging about The Covid-19 Pandemic in EFL Writing Courses (Al-Jarf, 2022b)*
29) *Cross-cultural communication: Saudi, Ukrainian, and Russian students online (Al-Jarf, 2004a)*

Sub-cluster E: Autonomous learning of English grammar

30) *Grammar podcasts for ESL college students in distance learning (Al-Jarf, 2023d)*
31) *Grammar podcasts for EFL college students (Al-Jarf 2011a)*

Sub-cluster F: Autonomous Learning of Vocabulary

32) *Learning vocabulary in the app store by EFL college students (Al-Jarf, 2022e)*
33) *Standardized test preparation with mobile flashcard apps (Al-Jarf, 2021h)*

Sub-cluster G: Autonomous Learning of ESP

34) *Teaching & learning with medical animations & videos (Al Jarf, 2017b)*
35) *Helping medical students with online videos (Al Jarf, 2011b)*
36) *Enhancing students' comprehension of medical lectures with online videos (Al Jarf, 2010f)*
37) *Online videos for specific purposes (Al Jarf, 2012c)*

Sub-cluster H: Autonomous Cultural Learning

38) *Enhancing freshman students' listening skills with news podcasts (Al-Jarf 2010e)*
39) *Integrating cultural podcasts in EFL college classrooms (Al-Jarf 2011c)*
40) *Teaching the target culture using a wiki (Al-Jarf, 2008b).*

Sub-cluster I: Autonomous learning of Multiple Language Skills

41) *Assistive technologies for EFL students (Al-Jarf 2010a)*
42) *Learning English on Facebook (Al-Jarf 2012a)*
43) *How to learn English autonomously with technology (Al-Jarf 2020c)*
44) *Inspiring, teaching and learning with online animations and videos (Al-Jarf, 2016)*
45) *Online video lessons for EFL students (Al-Jarf, 2012d)*
46) *specialized dictionary mobile apps for students learning English for engineering, business and computer science (Al-Jarf, 2022i);*
47) *Using social media live video streaming to broadcast lectures to college students (Al-Jarf, 2018c)*
48) *Issues in using Periscope for live academic lectures during the Covid-19 pandemic (Al-Jarf, 2021f)*
49) *Periscope as a tool for delivering live academic lectures (Al-Jarf, 2020g)*

Sub-cluster J: Autonomous Interpreting

50) *Text-to-speech software as a resource for independent **interpreting** practice (Al-Jarf 2022j)*

Sub-cluster K: Autonomous Translation

51) *Issues in Interactive Translation Practice on Twitter (Al-Jarf, 2020e).*
52) *Exploring online collaborative translator training in an online discussion forum (Al-Jarf, 2017a).*
53) *Translation Students' Online Discussion Forums (Al-Jarf, 2009c)*

Sub-cluster L: Autonomous Learning of Arabic as a foreign language (AFL)

54) *Self-study of Arabic as a foreign language in the digital age (Al-Jarf 2012f)*

Cluster 3: Autonomous Learning by Special-Needs Students

This cluster includes studies that examine autonomous learning among learners with disabilities, where autonomy is shaped not only by pedagogical design but also by accessibility needs and assistive technologies. Unlike the thematic skill-based clusters, this

cluster highlights how autonomous learning unfolds within a special-needs context, where learners require adapted tools, multimodal input, and individualized support. The cluster provides insight into how assistive technologies enable self-directed learning for students with visual impairments and how autonomy is mediated by accessibility constraints, digital accommodations, and specialized instructional strategies. Studies include:

55) *Blind Saudi female college students and assistive technologies (Al-Jarf 2021a*

Cross-Cutting Technology-Enhanced Autonomous Learning

This is not a thematic cluster. It is a cross-cutting methodological cluster that shows which technologies were used, how they were distributed across the 55 studies and which platforms supported autonomous learning. Although technology appears in multiple thematic clusters, this cluster isolates the technological dimension to provide a clear overview of the platforms, media, and applications that supported autonomous learning. Each study appears once in its thematic cluster and again here when technology constituted a key component of the instructional design. The studies included are:

Online videos and animations

- *Enhancing EFL students' reading skills with online videos (Al-Jarf, 2010d)*
- *Enhancing EFL students' oral skills with online videos (Al Jarf, 2010c)*
- *Enhancing students' comprehension of medical lectures with online videos (Al Jarf, 2010f)*
- *Helping medical students with online videos (Al Jarf, 2011b)*
- *Improving Students' Pronunciation with Online Videos (Al-Jarf, 2013b)*
- *Inspiring, teaching and learning with online animations and videos (Al-Jarf, 2016)*
- *Online video lessons for EFL students (Al-Jarf, 2012d)*
- *Online videos for specific purposes (Al Jarf, 2012c)*
- *YouTube videos as a resource for self-regulated pronunciation practice (Al-Jarf 2022l)*
- *Teaching & learning with medical animations & videos (Al Jarf, 2017b)*

Mobile APPS

- *Developing EFL students' listening and speaking skills with Talkenglish (Al-Jarf 2015a)*
- *Mobile technology and student autonomy in oral skill acquisition (Al-Jarf 2012b)*
- *Mobile audiobooks, listening comprehension and EFL college students (Al-Jarf 2021g)*
- *Reading in the App Store (Al-Jarf, 2012)*
- *Learning vocabulary in the app store by EFL college students (Al-Jarf, 2022e)*
- *Standardized test preparation with mobile flashcard apps (Al-Jarf, 2021h)*
- *specialized dictionary mobile apps for students learning English for engineering, business and computer science (Al-Jarf, 2022i);*
- *Collaborative Mobile eBook Reading for Struggling EFL College Readers (Al-Jarf, 2021b)*

Podcast-Based Independent Learning

- *Grammar podcasts for ESL college students in distance learning (Al-Jarf, 2023d)*
- *Grammar podcasts for EFL college students (Al-Jarf 2011a)*
- *Enhancing freshman students' listening skills with news podcasts (Al-Jarf 2010e)*
- *Integrating cultural podcasts in EFL college classrooms (Al-Jarf 2011c)*

TED-Based Independent Listening Practice

- *TED talks as a listening resource in EFL college classrooms (Al-Jarf 2021i)*
- *Integrating TED lectures in EFL college listening practice (Al-Jarf 2020d)*

Text-to-speech software

- *Text-to-speech software as a resource for independent interpreting practice (Al-Jarf 2022j)*
- *Text-to-speech software for promoting EFL freshman students' decoding skills and pronunciation accuracy (Al-Jarf, 2022k)*

Social media

- *Learning English on Facebook (Al-Jarf 2012a)*
- *Exploring discourse and creativity in Facebook creative writing by non-native speakers (Al-Jarf 2018a)*
- *Discourse and creativity issues in EFL creative writing on Facebook (Al-Jarf, 2015b).*
- *Social networks and creative writing in EFL (Al-Jarf 2014c)*
- *Using social media live video streaming to broadcast lectures to college students (Al-Jarf, 2018c)*

- *Issues in using Periscope for live academic lectures during the Covid-19 pandemic (Al-Jarf, 2021f)*
- *Periscope as a tool for delivering live academic lectures (Al-Jarf, 2020g)*
- *Issues in Interactive Translation Practice on Twitter (Al-Jarf, 2020e)*

Online courses

- *Online instruction and creative writing by Saudi EFL freshman students (Al-Jarf 2007)*
- *Effects of online collaborative activities on second language acquisition (Al-Jarf, 2009b)*
- *Cross-cultural communication: Saudi, Ukrainian, and Russian students online (Al-Jarf, 2004a)*

Wiki

- *Teaching the target culture using a wiki (Al-Jarf, 2008b).*

Blogs

- *Blogging about Sustainable Development in the EFL College Classroom (Al-Jarf, 2025)*
- *Blogging About Current Global Events in the EFL Writing Classroom: Effects on Skill Improvement, Global Awareness and Attitudes (Al-Jarf, 2022a)*
- *Blogging about The Covid-19 Pandemic in EFL Writing Courses (Al-Jarf, 2022b)*

Online Discussion Forums

- *Exploring Online Collaborative Translator Training in an Online Discussion Forum (Al-Jarf, 2017a).*
- *Translation Students' Online Discussion Forums (Al-Jarf, 2009c).*

Multiple Technologies and Assistive-Technology-Supported Autonomous Learning

- *How to learn English autonomously with technology (Al-Jarf 2020c)*
- *Self-study of Arabic as a foreign language in the digital age: Current status and future perspectives (Al-Jarf 2012f)*
- *Blind Saudi female college students and assistive technologies (Al-Jarf 2021a)*
- *Assistive technologies for EFL students (Al-Jarf 2010a)*
- *Autonomous language learning in distance education (Al-Jarf 2020a)*

2.2 Eligibility (Inclusion & Exclusion) Criteria

This SR included only empirical studies authored by the researcher between 2004 and 2025 that focused explicitly on autonomous learning in foreign language education, investigated autonomous behaviors, learning strategies, or technology-supported independent learning, and provided sufficient methodological detail to allow synthesis.

To ensure the homogeneity and validity of the final corpus, studies were systematically excluded based on the following five criteria:

- **Duplicate and Redundant Publications:** Studies that duplicated data across different publishing formats (e.g., conference proceedings vs. journal articles) or shared identical data sets were excluded to avoid double-counting. Examples include: *Al-Jarf (2011d)*, *Al-Jarf (2018)*, *Al-Jarf (2012e)*, and *Al-Jarf (2008a)*.
- **Teacher-Centered and Professional Development Studies:** Research targeting the autonomy, digital literacy, or professional development of language instructors rather than students was excluded. Examples include: *Al-Jarf (2006c)*, *Al-Jarf (2014a)*, and *Al-Jarf (2021d)*.
- **Incidental or Non-Central Focus on Autonomy:** Studies where autonomous behavior was merely a partial, incidental, or secondary variable within a broader teacher-led instructional context were excluded. Examples include research on general mobile app integration (*Al-Jarf, 2020f*), general fiction app usage (*Al-Jarf, 2022d; 2022f*), international distance education infrastructure (*Al-Jarf, 2020b*), and positive psychology dynamics (*Al-Jarf, 2022g*).
- **Non-Instructional and Non-Autonomous Reading Practices:** Studies examining casual reading preferences, general digital reading habits, or home-based child development outside structured foreign language acquisition contexts were excluded. Examples include: *Al-Jarf (2004b)*, *Al-Jarf (2005)*, *Al-Jarf (2021c)*, *Al-Jarf (2021e)*, *Al-Jarf (2023a)*, *Al-Jarf (2023b)*, and *Al-Jarf (2023c)*.
- **Non-Linguistic and Non-Translation Domains:** Studies investigating digital autonomy or student communication dynamics in disciplines completely unrelated to foreign language or translation instruction—such as general university student forums (*Al-Jarf, 2006a*)—were excluded.
- **Non-Empirical Formats:** Book reviews, editorials, commentaries, and purely conceptual papers that lacked an empirical research methodology, such as *Al-Jarf (2014b)*, were excluded.

2.3 Corpus Characteristics

The corpus consisted of 55 studies spanning a 21-year period (2004–2025), allowing for longitudinal analysis of autonomous learning practices across pedagogical phases and multiple technological. The studies include 25 peer-reviewed journal articles, 4 peer-reviewed book chapters, and 26 non-peer-reviewed conference presentations delivered in 20 countries (Austria, France, Hungary, Norway, Romania, Slovenia, Switzerland, Bosnia-Herzegovina, USA, Saudi Arabia, Oman, Jordan, Kazakhstan, India, Indonesia, Malaysia, Cambodia, China, Thailand, Uzbekistan, and Vietnam). Two book chapters, two conference papers, and one journal article are Scopus-indexed. Across all publications, the research consistently focused on Saudi EFL learners—both within Saudi Arabia and abroad—or on autonomous learning as a broader pedagogical construct. Accordingly, the countries in which the studies were presented reflect dissemination venues rather than the educational or cultural contexts of the research itself. This distribution demonstrates strong thematic coherence while highlighting the international reach of the researcher's academic contributions.

Although 26 of the included studies were delivered as conference presentations, these were not simple slide-based talks or informal sessions. Each conference paper represented a fully developed research study requiring extensive preparation, data collection, content analysis, and the examination of authentic digital materials. For example, studies on Facebook writing, news podcasts, cultural wikis, and autonomous learning involved substantial time spent searching for online materials, reviewing authentic content, capturing screenshots, and synthesizing pedagogical implications. The widely viewed one-hour presentation on autonomous learning (81,000 views) was based on extensive reading, careful content selection, and deliberate slide design. Therefore, the conference papers in this corpus should be regarded as full research studies disseminated through conference venues rather than low-rigor grey literature.

Overall, the corpus is characterized by methodological diversity, skill-specific focus, and contextual coherence. All 55 studies were conducted in Saudi higher education institutions, primarily among EFL and Arabic-as-a-foreign-language (AFL) learners in general. The studies employ a range of research designs, including experimental interventions, quasi-experimental studies, descriptive analyses, qualitative content analysis, mixed-methods approaches, and instructional models. Sample sizes vary across studies, reflecting classroom-based, online, and extracurricular learning environments. A defining feature of the corpus is its skill-based granularity, which distinguishes it from international SRs that treat autonomy as a broad, undifferentiated construct. The studies examine autonomy in listening, speaking, pronunciation, writing, grammar, culture, interpreting, and general language learning, as well as in AFL acquisition. Another prominent characteristic is the integration of technology, with nearly all studies incorporating digital tools such as online videos and animations, mobile applications, podcasts, YouTube, TED Talks, assistive technologies, social media platforms, wikis, online discussion forums, blogs, and online courses. This provides a rich foundation for analyzing how learners engage in self-regulated learning within technology-mediated environments.

2.4 Information Sources

The information sources for this SR were limited to platforms that index the author's complete scholarly output. Because the corpus is author-bounded, the information sources are fully traceable, internally consistent, and methodologically comparable, enabling a coherent synthesis aligned with SR standards. No external database search was required, as the aim was not to identify all global studies on autonomous learning in language education, but rather to synthesize all studies related to autonomous learning within a single, self-contained research program. All records were retrieved from publicly accessible academic platforms in which the author's publications are archived, including Google Scholar, ERIC, ResearchGate, Semantic Scholar, Academia.edu, SSRN, EBSCO, ProQuest, WorldCat, Scopus, and institutional repositories. Collectively, these platforms provide full coverage of the author's publications across journals, conference proceedings, book reviews, and digital repositories, including recent studies published between 2020 and 2025. All 55 studies were verified manually across platforms to ensure completeness, accuracy, and the removal of one duplicate record, and to confirm alignment with the eligibility criteria described in Section 2.2.

2.5 Data Extraction and Synthesis

Data from all eligible studies were systematically extracted using a structured extraction sheet developed for this review. For each study, information was extracted on publication year, research purpose, participant characteristics, learning context, target skill(s), technological tools, autonomous learning behaviors, instructional context, key findings, and implications. All extracted information was cross-checked against the full text of each study to ensure accuracy and completeness. Synthesis was conducted using a narrative, thematic approach appropriate for heterogeneous study designs. The synthesis was organized across 12 skill-based sub-clusters, enabling fine-grained comparison of autonomous learning behaviors across different linguistic domains. Within each cluster, findings were compared to identify patterns in learner autonomy development, technology use, skill-specific strategies, and contextual influences. A cross-cutting synthesis was also conducted to examine patterns in technology-mediated autonomous learning, including mobile learning, live-streaming, social media platforms, podcasts, wikis, blogs, and multimodal digital tools. Cross-cluster synthesis was then performed to map relationships between training for autonomy, skill-based autonomy, and

technology-enhanced autonomy. The 20-year span of the corpus (2004–2023) enabled the identification of temporal shifts in autonomous learning practices and the evolution of digital tools supporting learner autonomy. This multi-layered synthesis approach enabled the integration of insights across diverse studies while preserving the distinct methodological and conceptual contributions of each publication, ultimately providing a holistic understanding of how autonomous learning manifests across skills, tools, and pedagogical environments.

2.6 PRISMA Flow Description

A modified PRISMA flow process was used to document the identification, screening, eligibility assessment, and final inclusion of studies in this author-bounded SR. Because the corpus consisted exclusively of the author's complete scholarly output, all records were retrieved from academic platforms that archive the author's publications. A total of 80 records were initially identified across Google Scholar, ERIC, ResearchGate, Semantic Scholar, Academia.edu, SSRN, EBSCO, ProQuest, Scopus, and institutional repositories. During the verification stage, 22 studies were excluded based on the predefined eligibility criteria, including duplicate studies, studies unrelated to language learning, program-level reports, non-instructional articles, and studies that did not employ technology-mediated learning. This resulted in 55 unique studies. All 55 records proceeded to the screening stage, where titles, abstracts, and publication information were examined to confirm relevance to autonomous learning in language education. No records were excluded at this stage because all publications fell within the scope of the author's research program. Full-text eligibility assessment was then conducted for all screened studies. Each study was evaluated against the inclusion criteria described in Section 2.2, which required a focus on autonomous learning, self-regulated learning behaviors, technology-mediated learning, or skill-based autonomy among EFL or AFL learners. All 55 studies met the eligibility criteria and were included in the final synthesis. Because the corpus was closed and author-bounded, no additional records were identified through external searches, citation tracking, or manual reference list screening. The PRISMA flow therefore reflects a streamlined but rigorous process in which all available studies authored by the researcher were systematically verified, screened, and included.

3. Results

3.1 Study Characteristics

Cluster 1: Training for autonomous learning

The study titled **autonomous learning skills (Al-Jarf, 2009a)** emphasizes that autonomous learning has become essential due to rapid technological change, the expansion of the knowledge society, the limitations of rote-based education, and the increasing demands of academic, professional, and everyday life. Effective autonomous learning depends on several core skill areas. Information-seeking skills include rapid reading, using book components to locate information, searching library catalogs, and conducting online research through databases and search engines. Reading and comprehension skills involve choosing appropriate texts, previewing chapters, reading flexibly, interpreting diagrams and instructions, and understanding vocabulary through contextual clues. Learners must also master different levels of comprehension—literal, inferential, critical, and aesthetic. The study highlights the importance of organizing and analyzing information by identifying main and supporting ideas, recognizing text structures, connecting references within the text, and summarizing content. Writing skills are equally essential, beginning with brainstorming and outlining, followed by drafting, revising, and producing coherent, well-structured paragraphs. Note-taking and documentation skills help learners capture key ideas efficiently while respecting academic integrity. Finally, autonomous learning requires strong cognitive and metacognitive abilities—analysis, synthesis, problem-solving, critical thinking, and memory strategies. It also depends on effective goal-setting, time management, and intrinsic motivation, enabling learners to take ownership of their development and adapt to the demands of a rapidly changing world.

The study titled **steps in advising translation students to learn English autonomously (Al-Jarf 2014d)** proposes a model of a self-study program to help students practice English on their own. The self-study program consists of a plan for self-study, with deadlines and time slots for developing the required skill(s), a weekly and monthly study schedule, and online activities for developing the target skill according to each student's needs and her proficiency level. The advisor gives sample online activities and helps students assess their EFL skills using online tests. The students keep a weekly log of their progress. At the end of the semester, they answer a questionnaire-survey to assess the self-study program and find out areas of improvement and weaknesses.

The studies titled **self-improvement for business, engineering and computer science students (Al-Jarf 2018b) and Self-improvement for EFL college students (Al-Jarf 2010h) autonomous learning for Saudi students studying abroad (Al-Jarf 2010b) and autonomous learning skills (Al-Jarf 2009a)** collectively present a comprehensive framework for developing the core competencies required for autonomous foreign language learning. Both studies emphasize that autonomy is not an innate trait but a structured, learnable process that requires explicit training in goal setting, time management, resource selection, and self-evaluation. The studies highlight the need for learners to diagnose their strengths and weaknesses through online placement tests, design personalized self-study plans with clear timelines, and engage in continuous self-monitoring through weekly logs and periodic assessments. They also outline the essential skill domains that underpin autonomous learning, including

information-seeking strategies, flexible reading and listening techniques, vocabulary development through contextual and morphological analysis, and writing skills grounded in brainstorming, outlining, drafting, and revision. Cognitive and metacognitive abilities—such as analysis, synthesis, problem solving, and critical thinking—are presented as central to sustaining long-term autonomy. Together, the two studies provide a unified model showing how structured routines, digital tools, reflective practices, and systematic self-assessment can empower learners to take responsibility for their linguistic development and achieve sustained academic readiness in diverse learning contexts.

The **autonomous language learning in distance education (Al-Jarf 2020a)** study recommends setting SMART (Specific, Measurable, Attainable, Relevant, Time-bound) goals. Goals should be categorized into stepping stone, short-term, long-term, and lifetime goals, supported by specific 5-year, 1-year, and monthly plans. Effective time management involves: (i) Analyzing current time usage via weekly schedules. (i) Prioritizing tasks based on urgency and importance (e.g., focusing on planning and preparation while minimizing distractions). (iii) Preparing daily to-do lists to organize resources. Success in distance education requires specific technical and academic skills: (1) Information Retrieval: Selecting precise search terms for platforms like Google or YouTube and scan results for relevance. (2) Listening: Previewing content by asking questions, taking notes on main ideas, and summarizing or orally explaining the content after viewing. (3) Reading: Using a structured approach: read quickly for an overview, then re-read sections to convert headings into questions, summarize points in the margin, and circle key terms. Identify "signal words" that indicate structure, such as cause-effect (e.g., *consequently*) or contrast (e.g., *however*). (4) Vocabulary: Studying related terms together using concept maps and infer meanings from context, morphology (prefixes/suffixes), and parts of speech. (5) Grammar and Writing: Analyzing sentence structures and improving writing through journaling, summarizing, outlining, and participating in discussion forums.

The **autonomous learning for Saudi students studying abroad (Al-Jarf 2010b)** study argues that instead of relying on the textbook, students must be trained as autonomous learners who actively manage their language acquisition outside the classroom using a structured three-step framework. First, learners establish a baseline by using online diagnostic placement tests to identify personal weaknesses, which they use to design a personalized self-study plan featuring defined skill goals, specific materials, and strict timelines. Second, students cultivate their skills using digital tools: they improve writing and interaction by keeping daily journals, publishing on blogs, and conversing with native speakers; they boost listening and media literacy by utilizing MP3 lessons, educational videos, and news podcasts; and they enhance oral reading and pronunciation by using Text-to-Speech software like NaturalReaders to hear written text rendered aloud. Finally, to ensure continuous improvement and remain accountable, students maintain a detailed study log and perform systematic biweekly, monthly, and biannual self-assessments, comparing their ongoing test scores against their initial baselines to empirically audit their progress toward full academic readiness.

The **strategies for autonomous learning in an Arabization course (Al-Jarf, 2010i)** study used a series of student-centered activities that aimed at helping students become autonomous learners. These included: (i) Weekly assignments posted in a discussion forum, that required the students to apply the Arabization processes taught, to search for articles on Arabization topics not covered in class, to post summaries of those articles read, posting English and Arabic political, business, and technological news headlines. (ii) A term-paper that required the students to select a topic, search for references, read, summarize, paraphrase and synthesize information from several sources. Several drafts were written and feedback was given. Based on the paper, each student was required to give a PPT presentation in class using the smart board. (iii) Compiling newly derived and coined Arabic terms. (iv) Exams required the students to analyze and apply information. Posttest results, a post-treatment questionnaire and a course diary revealed significant improvements in students' autonomy, ability to analyze, synthesize and apply knowledge of the English and Arabic word formation processes to new situations. Teaching strategies that focus on students' needs, provide guidelines for performing a task, feedback during the performance of the task, tolerance of mistakes, enhancement of background knowledge and positive reinforcement proved to be effective in enhancing students' autonomy. Use of technology was effective in helping students compare performance with and learn from each other.

The study titled **helping EFL college students become autonomous presenters (Al-Jarf, 2010g)** was conducted with a sample of EFL college students enrolled in a Speaking course 3. At the beginning of the semester, the students were shy, refused to talk, could not generate ideas and produce correct sentences. Three months later, their speaking ability significantly improved. They could speak fluently and confidently, using correct grammar and pronunciation and could easily generate ideas. Improvement was due to efficient instruction that aimed at helping students become autonomous presenters. Each week, a presentation theme was assigned and the students were free to select sub-themes of their own, search the topic selected online, read about it, synthesize information, and present the topic in class individually, in pairs, or in small groups. The students felt free to choose their own presentation mode such as PPT with audio, video, still images, animation, role playing and dramatization. Discussion and comments followed each presentation. I made sure the students understood what they were supposed to do. Vocabulary items, a function, or a grammatical structure that might help them express themselves were given and explained briefly. Presentations were always

performed within a time limit. To help the students speak in front of class, a public speaking tip was given each class session. I would also smile at them, reassure them, prompt them with a sense of humor using questions or keywords and praise performance.

Cluster 2: Autonomous Learning of language skills

Sub-cluster A: Autonomous Listening and Speaking

In the study titled **mobile technology and student autonomy in oral skill acquisition (Al-Jarf 2012b),** pre-test scores showed no significant differences in oral proficiency level between the experimental (EG) and control group (CG). Both groups were exposed to the same textbook-based in-class instruction. The EG used a self-study MP3 English listening and speaking program and the CG used textbook-based instruction only. EG students covered 90 lessons and listened to 900 short audio files of Basic English structures and commonly used expressions on their own out of class. They could read, listen to and mimic as many times as they needed. They practiced and average of 3.5 hours a week. Post-test results showed significant differences in favor of the EG who used an MP3 self-study program. Improvement was noted in listening comprehension, oral expression, fluency, pronunciation correctness and vocabulary knowledge. After eight weeks, the EG's oral fluency scores improved by 32%, compared to 12% in the CG. The EG's listening mean score rose from 41% to 68%, compared to 40% to 52% for the CG. Auditory discrimination accuracy increased by 29% in the EG versus 10% in the CG. Self-reported autonomy scores increased from 2.4 to 4.1 in the EG, compared 2.5 to 2.9 in the CG. There were positive correlations between practice time and number of lessons covered by the students and listening and speaking posttest scores. EG students reported positive attitudes towards the MP3 self-study listening and speaking lessons. 78% reported that MP3 lessons made them more willing to practice English on their own outside class, and 72% indicated that the MP3 lessons improved their confidence in speaking. Overall, results demonstrated that the mobile-assisted self-study significantly enhanced oral fluency, listening comprehension, auditory discrimination, and learner autonomy, outperforming traditional textbook-only instruction across all measured variables.

This study titled **developing EFL students' listening and speaking skills with Talkenglish (Al-Jarf 2015a)** presents a pedagogical model demonstrating how EFL instructors can introduce the TalkEnglish self-study program to students to promote autonomous listening and speaking practice. The program offers lessons in basic, regular, business, interview, and travel English, along with modules on listening, pronunciation, intonation, basic grammar, and speaking speed. Its instructional approach centers on repeated practice of high-frequency sentences used in everyday communication. TalkEnglish provides 873 pages of lessons, 307 long-audio MP3 files, and 8,000 short audio files, allowing learners to listen and practice the lesson on their smartphones, MP3 players, or computers on their own. The instructor acts as a facilitator: she demonstrates how to use the program, helps students set structured schedules for autonomous practice, answers questions, monitors engagement, encourages consistent use, and provides feedback. The study highlights how TalkEnglish can support learners' oral-skill development by enabling flexible, self-paced, independent practice beyond the classroom.

The study titled **mobile audiobooks, listening comprehension and EFL college students (Al-Jarf 2021g)** identified a strong need for additional listening support among Saudi EFL students, who struggle with understanding main ideas, making inferences, interpreting figurative language, and analyzing spoken discourse. It proposed a full instructional model for integrating MABs, that shows how to locate and select appropriate audiobooks, the listening skills they can develop, and detailed pre-listening, while-listening, and post-listening phases. The students reported that MABs improved comprehension, literary appreciation, and engagement, offering accessible practice that matched learners' proficiency levels and addressed their weaknesses. They also reported positive attitudes toward MABs despite challenges such as narrator speed and accent. The study recommended gradual progression from video to audio-only formats, structured tasks to ensure active listening, and the creation of an interactive MAB repository to support sustained listening development.

The study titled **TED talks as a listening resource in EFL college classrooms (Al-Jarf 2021i) and integrating TED lectures in EFL college listening practice (Al-Jarf 2020d)** studies present a comprehensive model for integrating TED Talks into EFL college listening courses. The model explains where instructors can locate suitable TED Talks, outlines criteria for selecting appropriate lectures (topic familiarity, linguistic difficulty, length, speaker speed and accent), and describes a structured sequence of pre-listening, while-listening, and post-listening activities. Students watch TED Talks individually or in groups, take notes, answer guiding questions, and discuss their responses, while the instructor provides scaffolding, feedback, and encouragement. TED Talks offer authentic themes, diverse speakers, and rich audiovisual input, making listening classes more engaging and reducing preparation time for instructors. While the 2021 study is descriptive, the 2020 study includes an experimental component showing significant improvement in students' listening ability after systematic TED-based practice. Together, the two studies demonstrate the pedagogical value of TED Talks as an effective resource that EFL students can listen to on their own to enhance their listening skills.

The study titled **enhancing EFL students' oral skills with online videos (Al Jarf, 2010c)** shows (i) how online videos can be integrated in listening and speaking instruction, (ii) the advantages of integrating online videos: They are free, provide variety of topics, speakers, difficulty level, can be easily downloaded to laptop or mobile phone and can be viewed anywhere and anytime, (iii) gives examples of websites where online langue learning videos can be downloaded, (iv) criteria for selecting videos: video length in minutes, topic familiarity, difficulty level, speed of the speakers, students' proficiency level, and students' interests. Videos can provide global systems, current local and global issues, human values, and history, listening and speaking skills that can be developed through online supplementary videos. It also gives the types of listening and speaking tasks that can be designed based on online videos selected, how teachers can create student-centered listening and speaking activities based on the videos selected, phases of teaching and learning with online videos: Before watching a video, while watching the video and after watching the video; evaluation and assessment, and sample videos and sample listening and speaking tasks and activities.

Sub-cluster B: Autonomous Pronunciation

The study titled **YouTube videos as a resource for self-regulated pronunciation practice (Al-Jarf 2022l)** proposes using YouTube videos to improve EFL students' pronunciation. It shows (i) how YouTube videos can be integrated in EFL instruction to teach pronunciation; (ii) the advantages of integrating YouTube videos: They are free, provide variety of topics, speakers, difficulty level, can be easily downloaded to the laptop or mobile phone and can be viewed anywhere and anytime; (iii) how to locate YouTube videos that target a specific pronunciation skill; (iv) criteria for selecting online videos such as the video length in minutes, topic familiarity, difficulty level, speed of the speakers, students' proficiency level, and students' interests; (v) pronunciation subskills that can be developed through supplementary YouTube videos; (vi) teaching and learning with YouTube videos before watching a video, while watching the video and after watching the video. The students watch the selected YouTube videos on their own. The instructor acts as a facilitator. She demonstrates how the students can use YouTube videos autonomously, answers questions, monitors engagement, encourages consistent use, provides feedback and encourages flexible, self-paced independent practice.

The study titled **improving students' pronunciation with online videos (Al-Jarf, 2013b)** shows criteria for selecting online pronunciation videos. It gives samples of websites where online pronunciation videos can be downloaded. gives examples of pronunciation skills that can be developed through supplementary online pronunciation videos: Pronunciation of vowels sounds, consonants such as *th (ð), f, i, ɪ, z, g, ʊ, d, r*, p, l, glottal stop, American English consonants, plural endings (-S/-ES), verbs ending in -ed, irregular verbs, contractions, numbers, Past Tense Regular verbs, several sounds/words, minimal pairs, word stress, rhythm. Advanced students may use the interactive phonetic chart for English pronunciation and the International Phonetic alphabet (IPA); where online pronunciation videos can be viewed (at home, in a classroom with an interactive smart board, or in a digital multimedia language lab); phases of teaching and learning with online pronunciation videos; advantages of integrating online pronunciation videos; shortcomings of online pronunciation videos; and students views.

The study titled **text-to-speech software for promoting EFL freshman students' decoding skills and pronunciation accuracy (Al-Jarf, 2022k)** examined the effectiveness of NaturalReader as a self-study tool for enhancing freshman EFL students' decoding skills, reading fluency, and pronunciation accuracy. Two groups enrolled in Vocabulary I and Reading I received the same textbook-based instruction, but the experimental group supplemented classroom learning with weekly autonomous practice using NaturalReader. Students typed or pasted their textbook lessons into the software and listened to the texts repeatedly at adjustable speeds, either in the language lab or at home. Every four weeks, the experimental group completed oral-reading and vocabulary tests, and both groups took recognition (vocabulary) and production (oral-reading) posttests at the end of the 12-week semester. Results showed significant gains for the experimental group in decoding, reading fluency, and pronunciation accuracy, with improvements becoming particularly pronounced after 8 and 12 weeks. Vocabulary knowledge, however, did not differ significantly between groups. Positive correlations emerged between the amount of autonomous practice, number of lessons completed and weekly practice time—and posttest decoding and pronunciation scores. Students also expressed favorable attitudes toward using NaturalReader for independent practice, reporting that the software supported repeated exposure, clearer decoding, and more confident oral reading.

Sub-cluster C: Autonomous Reading

The study titled **enhancing EFL students' reading skills with online videos (Al-Jarf, 2010d)** shows how online videos can be integrated in reading instruction; gives samples of websites where online language learning videos can be downloaded, and how online videos can be used to enhance EFL students' reading skills. Online videos are multimodal: use audio, video, animation, color, text, sound, music…etc. Subtitles help students listen and read. They provide a variety of genres (narrations, news, inspirational quotes, health, history, stories, jokes, study skills, audio & text, picture & captions, picture, text & music, animations, commentary & labels). They have a cultural content. Numerous reading skills can be developed such as learning to read, phonics, reading with songs, reading speed, academic reading, context clues, making inferences, making predictions, and following directions, reading comprehension, academic reading and reader's purpose from comprehension. Reading instruction with online videos goes through

3 phases: Before watching a video, introduce video: title, content summary, vocabulary overview, give pre-questions, set goals for the tasks, tell the students what they need to do & focus on. The students predict content from title, give the procedures to be followed to complete each task and give the order in which tasks will be completed. While watching the video, the students take notes on main ideas, important details, names, dates. They pay attention to specific information while reading such as names, dates, places, figures. They answer questions while reading, make an outline, pay attention to organizational clues, and use context clues to infer meaning of difficult words. After watching the video, the students discuss answers, summarize/retell orally, use a flow chart and mind maps to show details & relations, discuss difficulties, talk about certain aspects, comment on story or movie topic, give impression, give morale or lessons learnt, give solutions to a problem, give a summary of the tasks that were performed, always set a time limit for reading, you may use small group discussions. Provide feedback on areas of improvement. Praise performance & give extra. Encourage students to read. Always thank students for their efforts.

In the study titled **effects of online collaborative activities on second language acquisition (Al-Jarf, 2009b),** pretests revealed no significant differences between the experimental (EG) and control groups (CG) in their English proficiency level. Then both groups received textbook-based instruction only. In addition, EG used an online course with Nicenet from home. EG students were divided into small teams of 5 students and were assigned weekly topics (themes) such as types of natural disasters (as tsunami in Indonesia, Hurricane Katrina, earthquake in Iran). Each team selected a sub-topic, searched and synthesized information about it, posted a paragraph and asked questions about the main idea, details, guessing meanings of words from context, connecting pronouns with their referents and so on. The rest were required to answer the questions of other teams and write comments. Each team gave feedback and commented on their classmate's answers. Study skills and self-improvement tips and websites were posted. On the post-tests EG students made higher gains in reading skill development. Surveys several factors leading to improvement as student-centered activities, real-life concrete topics, topics of interest for the students, students encouraged to express themselves, active participation and practice, clear instructions, a secure environment for making mistakes, instructor and peer support.

The study titled **collaborative mobile ebook reading for struggling EFL college readers (Al-Jarf, 2021b)** examined the effectiveness of integrating mobile e-books, Blackboard, and Elluminate into extensive reading instruction for struggling EFL freshman readers. Two groups were involved: the experimental group engaged in collaborative, extensive e-book reading activities, whereas the control group read paper books, answered questions on paper, and engaged in face-to-face discussions. Experimental students worked in small groups, read simplified e-books, posted outlines and summaries, questions about the topic, details, meanings of difficult words, pronouns and their referents on Blackboard. They participated in synchronous discussions via Elluminate, answered questions, and gave feedback and comments. Post-test results showed higher gains in reading skills for experimental students, attributed to student-centered activities, active participation, peer interaction, a secure environment for making mistakes, and instructor and peer support. The study demonstrates that collaborative mobile e-book reading can effectively enhance reading comprehension among struggling EFL college students.

The study titled **reading in the App Store (Al-Jarf, 2012)** explored the use of smartphone reading applications as out-of-class extensive reading activities for EFL freshman students. The students downloaded reading apps and used them as out-of-class extensive activities. Every two weeks, they downloaded an assigned e-book, and each student read a chapter, followed by weekly oral discussions about what each student read. The students answered questions about main ideas, details, and word meaning. Instruction followed a three-stage model involving pre-reading questions, guided reading, and post-reading discussion, with the instructor serving as facilitator. The students reported that the reading apps were convenient, accessible, and enjoyable, allowing them to read anytime and anywhere. The study highlights the pedagogical value of mobile reading apps in motivating learners and supporting reading comprehension development.

Sub-cluster D: Autonomous Writing

Across these three related studies **exploring discourse and creativity in Facebook creative writing by non-native speakers (Al-Jarf 2018a), and discourse and creativity issues in EFL Creative Writing on Facebook (Al-Jarf, 2015b) and social networks and creative writing in EFL (Al-Jarf 2014c),** the author examined creative writing produced by EFL learners on Facebook to explore discourse features, creativity, and the motivations behind students' voluntary online writing. Using a consistent qualitative methodology, the studies collected poems, short narratives, reflections, and thematic posts shared in public Facebook spaces, and supplemented the textual analysis with students' explanations of why they engaged in creative writing on social media. Findings across all datasets showed that Facebook provides a low-pressure, socially supportive environment that encourages experimentation with language, imagery, and narrative voice, leading to richer creativity than typically observed in classroom writing. Despite linguistic inaccuracies, students demonstrated strong expressive ability, meaningful audience engagement, and a willingness to take risks. Their self-reports revealed that they wrote creatively to express emotions, connect with peers, build

identity, and enjoy the freedom of an authentic, interactive space. Together, the studies concluded that social networks function as powerful platforms for fostering creativity, motivation, and discourse development among EFL writers outside formal instruction.

The study titled **online instruction and creative writing by Saudi EFL freshman students (Al-Jarf 2007)** examined spontaneous, self-initiated creative writing by 38 Saudi EFL freshman students enrolled in an online grammar (not writing) course, analyzing 54 poems, stories, plays, and essays together with students' pre/posttest scores and interview data. Findings showed that spontaneous creative writing ability was not connected to English proficiency, as students across all achievement levels produced meaningful and original texts on their own. Higher-proficiency writers demonstrated greater verbal originality and fewer errors, while less proficient writers relied more on spoken English and phonetic spelling. Interviews revealed that these freshman creative writers were intrinsically motivated, enthusiastic, socially engaged, and avid readers who enjoyed English media. Factors such as travel or studying abroad did not influence creativity. The online learning environment was the strongest catalyst for creativity: it provided a supportive, low-anxiety space for experimentation, fostered peer interaction and encouragement, and enabled students to express themselves freely. The students felt that these conditions were absent in a traditional classroom. The study concluded that creativity in EFL writing can flourish when students receive positive feedback, write for communication rather than correctness, and participate in interactive, technology-mediated writing activities that nurture confidence, enjoyment, and self-expression.

These three studies **blogging about sustainable development in the EFL college classroom (Al-Jarf, 2025), blogging about current global events in the EFL Writing classroom: effects on skill improvement, global awareness and attitudes (Al-Jarf, 2022a), and blogging about the Covid-19 pandemic in EFL writing courses (Al-Jarf, 2022b)** employed a class blog as a writing activity in freshman EFL writing courses, using themes such as Sustainable Development Goals, current global events, and COVID-19. In all three, students searched for multimodal materials, wrote summaries and reactions, and interacted through comments and peer feedback, while the instructor acted as a facilitator. Across the three studies, blogging consistently led to significantly higher writing-skill gains than paper-and-pencil assignments and fostered positive attitudes, collaboration, and reflective engagement with writing.

The study titled **cross-cultural communication: Saudi, Ukrainian, and Russian students online (Al-Jarf, 2004a)** describes a cross-cultural online writing project in which three English-as-a foreign language (EFL) college instructors in Ukraine, Russia and Saudi Arabia and their undergraduate students participated. The aim of the project was to develop students' writing skills in EFL, to develop their awareness of local and global cultural issues and events, and to develop their ability to communicate and interact with students from other cultures. Thirteen discussion threads, twenty external links, nine documents, three assignments, a photo gallery and Powerpoint presentations were posted in the Nicenet course-site by the students. Quantitative and qualitative analyses of the students' messages and reactions showed great improvement in the students' writing skills and attitudes towards the online cross-cultural activity.

Sub-cluster E: Autonomous learning of English grammar

The study titled **grammar podcasts for EFL college students (Al-Jarf 2011a)** investigated the effectiveness of integrating grammar podcasts into the Grammar 3 course for sophomore students at COLT. Two groups (EG and CG) received the same in-class instruction based on Mosaic 2. Pretests showed no significant differences in grammatical knowledge between both groups and weaknesses in basic English grammar. In addition to classroom instruction, the EG used a BBC grammar podcast, which the instructor introduced and demonstrated, including how to download episodes to smartphones or MP3 players. Students independently listened to weekly podcast episodes, kept logs of their listening time, and accessed downloadable podcasts featuring expert commentary, grammar explanations, interactive quizzes, and practice activities. On the posttest, EG made students made higher gains in grammatical knowledge, and had a positive attitude towards the grammar podcasts., describing them as enjoyable and helpful. The study recommended aligning podcast content with course topics and ensuring that the linguistic difficulty of the podcasts matches students' proficiency levels.

The study titled **grammar podcasts for ESL college students in distance learning (Al-Jarf, 2023d)** proposed a model for integrating grammar podcasts in teaching English grammar to EFL/ESL college students. It gives examples of English grammar podcasts that can be integrated in in-class grammar instruction. Grammar podcasts contain 2-5-minute-long audio explanations of a particular grammatical point or structure. They include a lesson script, exercises, quizzes with an answer key, and/or English grammar help where answers are given to students' questions about problematic grammatical points. Students can download podcasts, print the script, do the exercises and score their answers themselves. Elementary, intermediate, and advanced level grammar podcasts can be downloaded depending on the students' needs and proficiency level. Students can listen to grammar podcasts anywhere, anytime and as many times as they need. Classroom discussions on a grammar podcast can be performed in pairs, small groups or even whole class. End-of-semester grammar tests can be given to find out improvements in the students'

grammatical knowledge/achievement as a result of integrating grammar podcasts in EFL grammar courses. Recommendations for the effective use of grammar podcasts are given.

Sub-cluster F: Autonomous Learning of Vocabulary

The article titled **learning vocabulary in the app store by EFL college students (Al-Jarf, 2022e)** gives examples of mobile vocabulary apps (MVAs) that can be downloaded from the Google Play or Apple App Stores and used as extension activities or a supplement to in-class vocabulary instruction in EFL such as English word study, advanced English vocabulary, test your English vocabulary, English vocabulary level I, II & III, 1000 TOEFL words and others. There are also mobile dictionary apps, graded vocabulary tests for assessing vocabulary knowledge and skills and vocabulary trainers for the TOEFL and IELTS test vocabulary. In addition, the article gives guidelines for searching for, selecting, and using MVAs, the phases of teaching with MVAs and the instructor's role. The instructor can help the students find and download relevant MVAs, give pre-questions, and follow the students up to make sure they are making the best use of them.

The study titled **standardized test preparation with mobile flashcard apps (Al-Jarf, 2021h)** proposes a model for using a variety of Flashcard Apps (FCAs) for standardized tests such as the IELTS, TOEFL, TOEIC, GRE and SAT, how they can be downloaded from the Google Play, and iPhone App Stores for free and used by the students to prepare for any of those tests. FCAs contain thousands of essential words and specialized vocabulary in many fields. They have customizable features. They have several learning modes: Study, Slide show, Matching, Memorize and Quiz. Students can listen and learn without having to look at the screen. Multiple choice tests, Group choice tests, Word choice tests are provided as well. Words can be browsed alphabetically, sequentially, or randomly. They are a good tool for improving vocabulary and helping the students learn faster and remember more in a shorter time. Words that are important or difficult can be starred and revised on demand. This article gives examples of standardized test mobile flashcard apps (MFCAs), shows how FCAs can be located and gives some criteria for selecting relevant flashcards apps. Instruction with the MFCAs goes through three stages: pre task, task, and post-task phases. The instructor serves as a facilitator. She can help the students find and download flashcards that meet their needs and purposes and match their proficiency level, gives pre-questions, and tracks the students' progress to make sure they are making the best use of them.

Sub-cluster G: Autonomous Learning of ESP

The study titled **teaching & learning with medical animations & videos (Al Jarf, 2017b)** demonstrates how supplementary online medical animations and videos can help address students' difficulties in understanding lectures in specialized courses such as medicine, dentistry, pharmacy, biology, biochemistry, anatomy, and physiology, and challenges they face when reading technical texts and learning specialized terminology by providing multimodal explanations that engage both visual and auditory senses, simplify complex concepts, and expose learners to varied accents and levels of difficulty. It outlines how instructors can integrate these resources into healthcare courses to enhance students' listening, speaking, reading, writing, and vocabulary skills, and recommends selecting YouTube content based on student proficiency while maintaining a repository of animations covering topics such as cell structure, the digestive system, and osteoporosis. Effective implementation requires structured instructional stages, including pre watching vocabulary preparation, guided viewing, and post watching tasks such as summarizing content, analyzing medical roots, completing anatomical diagrams, and practicing terminology. The success of these tools depends on the instructor's role as a facilitator who provides clear guidance, encourages active engagement, and designs activities that ensure the acquisition of both linguistic skills and medical knowledge.

The three studies **helping medical students with online videos (Al-Jarf 2011b), enhancing students' comprehension of medical lectures with online videos (Al-Jarf 2010f),** and **online videos for specific purposes (Al-Jarf 2012c)** collectively propose a unified instructional model for integrating specialized online videos into medical and ESP courses. The three studies outline clear criteria for selecting videos, provide repositories and sample websites, and describe structured teaching phases (pre-watching, while-watching, post-watching) supported by student-centered tasks that develop listening comprehension, technical terminology, background knowledge, and academic skills. All three emphasize the advantages of online videos—accessibility, varied difficulty levels, authentic content, and flexible pacing—and highlight the importance of designing purposeful tasks and assessment procedures. Together, they offer a comprehensive framework for using specialized online videos to enhance students' linguistic and disciplinary readiness.

Sub-cluster H: Autonomous Learning of Culture

The study titled **integrating cultural podcasts in EFL college classrooms (Al-Jarf 2011c)** proposes the integration of cultural podcasts in a Language and Culture course that students take in level 4, a Comparative Culture course they take in level 5 and a Readings in the Target Culture course they take in level 7 course as a supplement to in-class instruction. Students can download cultural podcasts about American and British customs, traditions, holidays, celebrations, architecture (houses, castles, palaces, churches, mosques), art, literature, music, costumes, museums, folk tales, sports, games, weddings, city life, rural life, food and

drink, recreation, religion, museums and libraries, transportation, educational, health, political and economic systems …etc. from travel websites such as a "walking tour podcast", "Nationalgeographic.com", "Walks of a lifetime" and "Lonely planet" to their BlackBerry, mobile phone, iPod or MP3 player and listen to them on their own. Cultural awareness exercises that require the students to describe, summarize, analyze, compare or contrast aspects of Saudi and British/American cultures can be prepared by the instructor and used after listening to each cultural podcast. Students can listen to those podcasts on their own anywhere, anytime and as many times as they need. Classroom discussions on a cultural podcast can be performed in pairs, small groups or even the whole class. Cultural podcasts also serve as a basis for individual, interactive or collaborative theme-based projects.

In the study titled **enhancing freshman students' listening skills with news podcasts (Al-Jarf 2010e),** the experimental group (EG) students downloaded news podcasts from the CNN & BBC websites to their BlackBerry, mobile phone or MP3 players. They listened to those on their own at home. Comprehension questions and auditory listening exercises were prepared by the instructor and were used after listening to each news podcast. End-of-semester listening comprehension and auditory discrimination tests showed significant improvement in the students' listening comprehension and auditory discrimination skills as a result of integrating news podcasts in listening instruction. Introduction EFL freshman students have no opportunities to listen to native speakers of English outside the classroom. They have problems in auditory discrimination and listening comprehension.

In the study titled **teaching the target culture using a wiki (Al-Jarf, 2008b) study,** 70 female students were divided into an experimental group (wiki + in-class instruction) and a control group (in-class instruction only). Pretests showed no significant differences between the two groups in their knowledge of British culture. Both groups received the same six-week module on British culture through LCD-enhanced lectures supported by pictures and contextualized explanations of cultural terminology. The instructional content covered British history, government, daily life, education, economy, arts, geography, and communication systems. In addition, the experimental group used a culture-focused wiki, where students created and edited pages, selected subtopics, searched for information, summarized content, added images, linked related pages, cited references, and engaged in online discussions. Posttest results revealed significant improvement in both groups, but the experimental group outperformed the control group due to participation in the wiki. Positive correlations were found between the wiki usage frequency and the posttest scores, as well as between cultural terminology knowledge and cultural awareness. 90% of the students enjoyed the wiki. It was motivating, and helpful for learning and information sharing. The study concluded that wikis enhance cultural learning and recommended their integration into culture courses, along with instructor training and broader collaborative use across institutions.

Sub-cluster I: Autonomous learning of Multiple Language Skills

The study titled **assistive technologies for EFL students (Al-Jarf 2010a)** defines assistive technologies and shows kinds of assistive technologies that can be used free of charge in the EFL college classroom to develop students' listening, speaking, reading, writing, vocabulary, grammar, dictionary and note-taking skills, such as: (i) using a blog or a discussion forum to develop students' writing skills; (ii) using MP3 lessons and podcasts to develop students' pronunciation, listening comprehension and speaking skills (iii) a text to-speech software to improve their oral reading skills; (iv) online videos to develop students ability to take notes, and record vocabulary and expressions and others. The study shows how the students can download, install and independently use under the instructor's supervision, kinds of exercises and activities that can be developed and used for practice and evaluation

The study titled **learning English on Facebook (Al-Jarf 2012a)** demonstrates how Facebook (FB) can serve as a platform for autonomous, self-directed English learning by exposing students to a wide range of skill-specific pages that they can explore independently. Learners can use listening pages (e.g., *Listen to English*, *IUJ English Listening Comprehension Club*) to access podcasts, TV clips, and weekly listening tasks at their own pace; speaking pages that provide daily prompts, audio models, and discussion questions; reading pages that offer news articles, reading tips, and literacy resources; and writing pages that encourage voluntary posting, commenting, and participation in thematic discussions. General English pages supply grammar explanations, idioms, videos, and authentic input that students can browse according to their interests and proficiency levels. The study outlines criteria that help learners select pages autonomously, such as skill focus, difficulty level, number of users, and relevance to personal goals. The instructor acts as a facilitator who guides students toward suitable pages and monitors students' integration. The learning process is student-initiated, with learners choosing what to read, watch, listen to, and write. Overall, Facebook provides a low-pressure, interactive, and learner-centered environment that expands opportunities for autonomous practice, increases exposure to authentic content, and accommodates diverse learning styles.

The study titled **how to learn English autonomously with technology (Al-Jarf 2020c)** explains how EFL college students can improve their English autonomously by using freely available technologies outside the classroom. Students can choose apps based on their proficiency level, needs, and preferred skills, since multiple tools exist for each subskill. The study lists technologies for listening, pronunciation, speaking, reading, writing, vocabulary, grammar, dictionaries, literature, daily lessons, and standardized

test preparation. Students can search for apps that match the skill they want to develop, contain sufficient practice material, and accommodate different learning styles. They assess their skills before and after practice using online tests and placement tools. They create a self-study schedule for practicing specific skills. The study provides examples of autonomous activities as MP3 lessons, podcasts, and videos for listening and speaking; text-to-speech software, ebooks, and reading apps for reading; and blogs, forums, journals, grammar apps, and writing apps for writing development. Overall, the study shows that technology empowers students to take responsibility for their own learning by offering flexible, skill-specific, and self-paced opportunities for continuous English practice beyond classroom limitations.

The study titled **inspiring, teaching and learning with online animations and videos (Al-Jarf, 2016)** proposes the integration of online specialized animations and videos in English for engineering, business and computer science courses to help students improve their listening, speaking, reading, writing and vocabulary skills and fill the gap in their background knowledge. The study shows how supplementary online engineering, business and computer science animations & videos can be integrated in ESP course to enhance students' listening, speaking, reading, writing and vocabulary skills; the advantages of integrating specialized online animations and videos, give a sample of websites where specialized online animations and videos can be downloaded, show a sample of specialized online animations and videos, describe the criteria for selecting specialized online animations and videos, outline the skills that can be developed through supplementary specialized online animations and videos, and present a scheme for the phases of teaching and learning with specialized online animations and videos.

The study titled **online video lessons for EFL students (Al-Jarf, 2012d)** proposes integrating online video lessons as supplementary instructional materials in EFL courses. The study demonstrates how video lessons can enrich instruction by providing diverse topics, speakers, difficulty levels, and authentic language input that students can access anytime and anywhere. The study outlines clear criteria for selecting effective video lessons as video length, difficulty level, speaker speed, students' proficiency level, availability of closed captions, interactivity, and the need for teacher guidance. It highlights the multiple skills that can be developed through online video lessons, such as listening, speaking, communicative functions, grammatical structures, vocabulary development, and test preparation for TOEFL, IELTS, and TOEIC. It proposes three-phase instruction: (i) Before watching: setting goals, introducing the video, previewing content, and providing guiding questions. (ii) While watching: taking notes, identifying main ideas and details, answering questions, and outlining the lecture. (iii) After watching: group or pair discussions, summarizing or retelling content, and using visual organizers such as flowcharts, diagrams, and mind maps. The study provides sample websites, sample video lessons, and sample tasks to illustrate practical implementation. To motivate students to watch the video lessons, they can be given extra credit, by assigning written tasks, and including video-based content on tests. Overall, the study demonstrates how online video lessons can support multi-skill development and enhance learner engagement through flexible, student-centered, and visually rich instructional materials.

The article titled **specialized dictionary mobile apps for students learning English for engineering, business and computer science (Al-Jarf, 2022i)** shows ESP instructors examples of engineering, computer science and business specialized mobile dictionaries Apps (MDAs) available in the Google Play or Apple Stores; how they can be located; criteria for selecting specialized MDAs; the lexicographical features of specialized MDA and instructional stages with MDAs. Instruction with MDAs goes through three stages: pre-task, task, and post-task phases. The instructor serves as a facilitator. She can help students find and download MDAs that meet their needs and purposes and match their proficiency level; gives pre-questions; and tracks the students' progress to make sure they are making the best use of MDAs. The students can download and use MDAs on their own to learn and consolidate essential specialize technical terms covering several sub-categories within the engineering, business and computer science fields.

In the study titled **issues in using Periscope for Live academic lectures during the Covid-19 Pandemic (Al-Jarf, 2021f),** *the* author used Periscope to broadcast live language, translation and technology lectures to her Twitter followers. The Periscope lecture analytics showed that lectures with the highest viewers, impressions and engagement were those about how to develop translation and interpreting skills and how to integrate Elluminate in teaching. Followers' surveys indicated that the Periscope lectures and their replays were beneficial, interesting, enriching, invaluable, and fulfilling their needs. As a lecturer, the author found Periscope easy to use. She could go live anytime and anywhere. She did not have to register students. Replays can be accessed via Periscope or Twitter. However, reading comments and questions while live-streaming was somewhat challenging. When lecturing via Periscope, the author could not hear viewers' voices or see their facial expressions as in Zoom. Engagement, interaction and communication among the viewers themselves, and between the viewers and the instructor were very low.

The study titled **Periscope as a tool for delivering live academic lectures (Al-Jarf, 2020g)** gives the purpose of the live translation, linguistics, teaching methodology, and academic lectures; examples of the Periscope live academic lectures; procedures of delivering live academic lectures through Periscope; some Periscope lecture analytics; students' and instructor's views on the

advantages and shortcomings of using Periscope to deliver live academic lectures. Students' surveys indicated that the live lectures and their replays were beneficial. Students could watch lectures on their smart phones, iPad, or computer, anywhere and anytime. They described my Periscope lectures as interesting, enriching, invaluable and fulfilled their needs. They helped them understand and clarify some difficult concepts. They learnt a lot. They could ask me to deliver lectures on any academic issue of interest to them. Some students could not follow the live broadcast as they were busy but were able to replay the recorded lectures on Twitter. Some suggested that I upload the Periscope lectures on You Tube to be viewed anytime and to avoid removal. Others suggested the use of other Apps such as Zoom. As a lecturer, I found Periscope easy in that I could go live anytime and anywhere, as long as I have access to a Wi Fi network. I did not have to register students interested in viewing the live lectures. In addition, no time is required to upload and post the recorded lecture on Twitter. However, reading the comments and questions while presenting was somewhat challenging as the author had to interrupt the lecture to answer the questions or respond to the comments. Sometimes I answered the questions orally at the end of the lecture or in tweets. Lecturing via Periscope is not like face-to-face lectures in that I could not hear viewers' voices or see their facial expressions.

The aim of **using social media live video streaming to broadcast lectures to college students (Al-Jarf, 2018c)** was to help the author's student followers on Twitter to develop language, translation and interpreting skills, respond to their academic needs and introduce them to the latest language and translation research. Responses to a questionnaire-survey showed that followers found the live lectures and their replays beneficial. Some followers could not follow the live broadcast as they were busy but were able to replay the recorded lectures on Twitter. Some suggested that I upload the Periscope lectures on YouTube to be viewed anytime. As a lecturer, I found Periscope easy in that I could go live anytime. I did not have to register students. Lectures are automatically recorded and posted on Twitter. However, reading comments and questions while presenting was somewhat challenging as I had to interrupt the lecture to answer the questions or respond to the comments. Lecturing via Periscope is not like face-to-face lectures as I could not hear viewers' voices or see their facial expressions.

Sub-cluster J: Autonomous Interpreting

The study titled **text-to-speech software as a resource for independent interpreting practice (Al-Jarf 2022j)** proposes a model for integrating text-to-speech software (TTS) in students' interpreting training and practice. The students can use TTS software online or download it to their laptop or use it as a mobile app. The instructor introduces students to the TTS, how to copy and paste a text in the text area block, choosing a male or female reader, American or British accent, and reading speed. The students practice interpreting with TTS on their own, out of class. They listen and interpret without looking at the screen. They practice different interpreting modes (simultaneous, consecutive, liaison and sight interpreting). In sight interpreting, they interpret while reading the text from the screen silently without listening to the text being read. The instructor can also help the students select texts for practice. She tracks the students' progress up to make sure they are making the best use of the TTS software.

Sub-cluster K: Autonomous Translation

In the **issues in Interactive Translation Practice on Twitter (Al-Jarf, 2020e)** study, I used my Twitter account to tweet images of English and Arabic texts to be translated by my student followers who are translation majors. My followers translated the texts and corrected the translation errors, tweeted and re-tweeted their translations and corrections for feedback. I gave feedback on the location and types of translation errors, tweeted prompts, translation tips and resources while followers were re-thinking and working on their answers. The followers reported that they benefited from the variety of translation tips, feedback and dictionaries tweeted. Further pedagogical issues, reflections and recommendations on interactive translation practice via Twitter are given.

In the **exploring Online Collaborative Translator Training in an Online Discussion Forum (Al-Jarf, 2017a)** study, an asynchronous online translation discussion forum was created and used to post texts to be translated by participating English-Arabic student translators from different countries. Volunteer translation instructors read participants' translations and gave communicative feedback on the location and types of errors. Errors were color-coded. No correct translations were provided. The participants revised their translations and re-posted them for further feedback. Each translation was subjected to several revisions and re-submissions before it reached an acceptable level. Translation tips were given. The participants had access to a variety of online dictionaries and resources. At the end of the semester, participants responded to a questionnaire regarding their online collaborative experience.

The study titled **translation students' online discussion forums (Al-Jarf, 2009c)** focused on the COLT Forum and examined the kinds of topics, issues and problems posted, benefits and shortcomings of those forums as perceived by the participants and the linguistic and cultural characteristics. Data analysis showed that students post the following types of topics: translation job opportunities, future of female translators, sample translations, bilingual dictionaries, translation websites, machine translation on the internet, terminology websites, translator's day, translators' forum, common errors in translation, Arabization, lack of concentration during oral translation, translation and language lessons, and Trados, Participants surveyed find the topical language

and translation resources, language learning lessons and translation issues discussed helpful. They receive feedback and moral support when they post academic inquiries or problems related to the college programs, registration, transferring to and from the college and others. The linguistic features of the students' posts are characterized by using slang and colloquial instead of Standard Arabic, transliterating English or French words are interspersed; spelling and grammatical mistakes are common. Issues, responses and comments are written with a humorous style. Large logos with pictures and mottos are inserted in the posts. Varying font size and color. The forums support collaborative knowledge creation and sharing in an academic environment. Some of the posts are trivial particularly in the general chat forum which has 8011 posts (6.6%). 90% of the students use a nickname to conceal their identity. Some instructors believe that the COLT forum lacks a purposeful choice of discussion topics of common interest. It is difficult to locate a topic due to *volume of topics and responses. System's search tool is inefficient. Searching archives.* Time-consuming to read & respond to messages of so many students. 32% of threads are not related to forum's main theme. Message subject is not specified: *"have a problem, what do you think, need help, have a question".* No specific language and translation sub-forums. They assume a passive role, and stick to a unilateral point of view.

Sub-cluster L: Autonomous Learning of Arabic as a foreign language

The **self-study of Arabic as a foreign language in the digital age: Current status and future perspectives (Al-Jarf 2012f)** surveyed websites, YouTube video lessons, Facebook pages, audio lessons, and mobile applications that non-native students learning Arabic as a foreign language (AFL) can use to practice Arabic language skills. Results revealed a significant gap and distinct weaknesses in the digital content for teaching Arabic compared to other foreign languages. Online portals are severely limited in quantity and quality. Most are dedicated to absolute beginners, teaching the alphabet and basic reading, while completely neglecting intermediate and advanced learners. Listening, speaking, and writing skills are heavily marginalized, and there is a total absence of student-targeted dictionaries or varied reading materials suitable for different age groups. Outdated instructional methods (such as the *Noorania* method) are frequently utilized. Many platforms mimic teaching methodologies designed for native Arabic speakers instead of adopting modern foreign language acquisition approaches. There is a lack of specialized, institutional efforts. Most existing platforms are non-specialized individual initiatives reliant on volunteers, which leads to scattered resources, duplicate directories, and broken links. Furthermore, many require paid subscriptions, whereas their counterparts in other languages are widely accessible for free.

The study strongly recommends the establishment of an integrated digital portal/network for teaching Arabic to non-native speakers that meets the following criteria: (i) Management by a full-time, dedicated team of academic specialists; (ii) covering all proficiency levels (beginner, intermediate, advanced) and all skills (listening, speaking, reading, writing, spelling, grammar, morphology, rhetoric, and literature), alongside providing electronic libraries, student dictionaries, and a system to answer learners' inquiries; (iii) presenting the content through modern instructional frameworks supported by interactive multimedia, practical exercises, and diagnostic tests; and (iv) securing permanent financial backing to continuously update and expand the platform, making the learning experience engaging and attractive for students worldwide.

Cluster 3: Autonomous Learning by Special-Needs Students

Blind Saudi female college students and assistive technologies (Al-Jarf 2021a) is a case study of a blind freshman student at COLT who relies extensively on assistive technologies to manage her learning autonomously. Using her iPhone, iPad, laptop, and social media accounts, she independently accesses course materials, communicates with peers and instructors, and navigates digital spaces. VoiceOver and the Braille Sense Notetaker enable her to surf the internet, read silently through a refreshable Braille display, take notes in class, synchronize her calendar, and complete academic tasks without assistance. She also uses voice commands to operate her camera and caption photos, and navigation software to move around campus on her own. Sonia reported that voice-based tools significantly enhance her ability to interact socially and academically, especially on platforms like Twitter and WhatsApp. Despite this high level of self-directed technology use, institutional barriers persist: the Multimedia Language Lab lacks screen-reading software such as HAL or JAWS, and instructors do not adjust the pace of listening and interpreting classes to accommodate her needs. Although the Braille Sense Notetaker is essential for her autonomous learning, she cannot afford it and must borrow it from the university's Center for Special Needs Students. The case illustrates both the potential of assistive technologies to support autonomous learning and the structural limitations that hinder full accessibility.

4. Discussion

4.1 Meta-Conclusion

Across the 55 studies, a coherent and cumulative body of evidence demonstrates that autonomous learning in the Saudi and Arab foreign language context is both achievable and pedagogically transformative when learners are provided with structured guidance, accessible digital tools, and opportunities for self-directed engagement. The breadth of this 55-study corpus, spanning

multiple skills, technologies, and learner profiles, reinforces the robustness of these conclusions and demonstrates the consistency of autonomous learning outcomes across diverse instructional contexts.

The corpus shows that autonomy is not a single skill but a multidimensional construct encompassing goal-setting, time management, information-seeking, metacognitive regulation, and sustained independent practice. Whether leveraging mobile apps, podcasts, TED Talks, blogs, online courses, assistive technologies, or various online video, animation, and social media platforms, students consistently achieved measurable gains in listening, speaking, pronunciation, writing, interpreting, and general English proficiency. The studies collectively confirm that when learners are empowered to take responsibility for their progress, supported by clear models, scaffolded tasks, and flexible digital environments, their linguistic performance, confidence, and motivation improve significantly. Overall, the corpus establishes a strong empirical foundation for autonomous learning as a viable, effective, and highly reliable approach in Saudi higher education.

4.2 Meta-Interpretation

Taken together, the findings suggest that autonomous learning succeeds not because of technology alone, but because technology creates conditions that enable autonomy: flexibility, personalization, repetition, multimodal input, and authentic engagement. The studies reveal that Saudi learners thrive when they can control the pace, timing, and mode of their learning, especially in contexts where traditional instruction is heavily textbook-driven and teacher-centered. The corpus also shows that autonomy develops progressively: students first need explicit training in planning, organization, and self-assessment before they can effectively use digital tools for independent practice. Once these foundational skills are in place, learners demonstrate a strong capacity to regulate their learning, select appropriate resources, and sustain long-term engagement. Importantly, the studies indicate that autonomy is deeply social: platforms like Facebook, YouTube, and TED Talks foster interaction, creativity, and exposure to authentic language, which in turn reinforce learners' sense of agency and identity. Thus, the corpus suggests that autonomous learning is best understood as an interplay between learner readiness, pedagogical scaffolding, and technological affordances. The consistency of these patterns across the 55 studies confirms that this interplay is stable across diverse skills, tools, and learning environments, rather than being limited to isolated interventions.

4.3 Cross-Cutting Insights

Several insights emerge across clusters. First, training for autonomy is a prerequisite for successful autonomous learning of language skills. Studies in Cluster 1 show that without explicit instruction in goal-setting, time management, and self-monitoring, learners struggle to benefit from independent digital practice. Second, technology functions as an amplifier, not a substitute, for autonomy. Whether through podcasts, mobile audiobooks, TED Talks, or YouTube videos, the most effective interventions were those that combined structured pre-listening or pre-task guidance with opportunities for self-paced practice. Third, autonomy enhances both linguistic and psychological outcomes: students reported increased confidence, reduced anxiety, stronger motivation, and greater willingness to practice outside class. Fourth, autonomy is skill-specific: listening and pronunciation benefit from repeated exposure and multimodal input; writing flourishes in socially supportive environments like Facebook; interpreting improves through tools such as text-to-speech software. Notably, these cross-cutting insights were evident across all 12 skill-based sub-clusters, confirming that the mechanisms supporting autonomy—such as scaffolding, learner agency, and multimodal input—operate similarly across different linguistic domains. Finally, the corpus highlights the overarching importance of learner agency and choice; students consistently performed better when they could select topics, tools, and modes of expression aligned with their interests and proficiency levels.

4.4 Implications

The findings carry several implications for curriculum design, pedagogy, and policy. (i) autonomous learning should be integrated systematically into language programs through explicit training in metacognitive and organizational skills, rather than treated as an optional add-on. (ii) instructors should adopt a facilitative role, providing structured models, clear expectations, and ongoing feedback while allowing learners freedom in resource selection and task execution. (iii) using medical animations, interactive Twitter practice, and translation forums) imply that autonomous learning tools are the ideal bridge for "high-cognitive-load" domains. Since classroom hours are structurally limited, institutions should design domain-specific autonomous solutions (e.g., flashcard apps for medical terminology or text-to-speech for real-time interpretation pacing) to allow standard class time to focus on complex interactive communication while automated tools handle raw input acquisition. (iv) Since a vast amount of successful autonomous growth occurred on external, non-traditional platforms like Facebook, YouTube, App Store, universities need to establish systems for formalizing informal autonomous practice. (v) assessment practices should incorporate self-evaluation, learning logs, and performance-based tasks that reflect real autonomous engagement. Finally, the corpus suggests that fostering autonomy has long-term benefits beyond language proficiency: it cultivates lifelong learning habits, digital literacy, and academic resilience, all of which are essential for success in contemporary higher education and globalized professional environments. The

comprehensive nature of this corpus indicates that these implications are not context-specific, but are highly generalizable across a wide range of skills, technologies, and learner groups within Saudi higher education.

4.5 Positioning This SR Within the Global autonomous language learning SRs

Within the broader landscape of international autonomous learning research, this SR occupies a distinct and necessary position. Existing global SRs tend to conceptualize autonomy in broad, technology-centered terms, focusing on tools such as mobile learning, AI, CALL, blended learning, or social media, while offering limited insight into how autonomy develops within specific language skills or within coherent educational systems. Moreover, prior SRs are geographically concentrated in East Asian, European, and North American contexts, leaving the Arab and Gulf regions largely unrepresented. In contrast, the present review provides a uniquely skill-specific, context-grounded, and longitudinal synthesis of autonomous learning in Saudi higher education, drawing on a unified corpus of 55 studies conducted over 21 years. The breadth of the corpus, spanning 12 skill-based sub-clusters and 11 types of technological modalities, further strengthens its contribution by offering a comprehensive and internally coherent account of how autonomy emerges across diverse linguistic domains. By integrating evidence across listening, speaking, pronunciation, writing, interpreting, and Arabic-as-a-foreign-language learning, alongside foundational training for autonomy, this SR offers a level of granularity and internal coherence absent from international reviews. It therefore extends the global literature by demonstrating how autonomous learning can be systematically cultivated within a culturally specific, technology-rich environment, and by illustrating the pedagogical pathways through which autonomy evolves when learners receive structured support, digital resources, and opportunities for self-directed engagement.

4.6 Limitations

Although this SR provides a coherent and internally consistent synthesis of 55 studies on autonomous learning in the Saudi and Arab foreign language context, several limitations should be acknowledged: First, the corpus is entirely authored by a single researcher. While this unique characteristic ensures exceptional methodological coherence and a unified conceptual framework, it limits the diversity of alternative research traditions, theoretical perspectives, and varied instructional styles typically found in multi-author SRs. Second, the studies were conducted within similar institutional, cultural, and geographic boundaries. Consequently, synthesized findings may not be generalized to international educational systems that operate under different cultural norms, learner profiles, or institutional infrastructures. Third, the synthesized research spans a 21-year period (2004–2025) during which digital platforms and learner behaviors evolved substantially. Some platforms evaluated in earlier studies may no longer align with contemporary student habits. In addition, the corpus reflects pre-AI autonomous pedagogical practices, therefore the findings do not account for the self-regulated use of AI. Finally, because the 55 empirical studies were executed by the same principal investigator, the data collection instruments (such as questionnaires, student logs, and localized testing) and pedagogical scaffolding methods are naturally homogenous. This prevents the meta-synthesis from evaluating how radically different institutional methodologies or external grading systems might impact learner autonomy outcomes.

5. Recommendations and Directions for Future Research

Based on the evidence synthesized across the 55 studies, the following recommendations are offered for enhancing autonomous learning in foreign language education: First, autonomy training must be embedded systematically into language curricula through explicit instruction in goal-setting, time management, self-monitoring, and digital literacy. Instructors should adopt a facilitative role—providing structured pre-task models and ongoing feedback while granting learners the freedom to select resources, topics, and modes of engagement.

Second, because contemporary learners have unprecedented access to 24/7 individualized feedback, future designs should leverage AI-driven pronunciation analyzers, grammar/style assistants, conversational agents, and reading companions. Furthermore, incorporating multimodal resources (interactive video lessons, captioned authentic videos, and phonetic charts) allows learners to control pacing and repetition, while interactive content-creation technologies (AI-assisted writing generators and digital storytelling tools) can elevate students from passive consumers to active creators.

Third, developing AFL Digital Resources: A critical priority is the development of high-quality Arabic-as-a-foreign-language (AFL) digital resources. This review highlights that while English learners benefit from abundant online materials, AFL learners face a severe shortage of structured, interactive, and level-appropriate media. There is a pressing need to design AI-enhanced Arabic learning platforms, graded reading libraries, and task-based modules that incorporate multimedia explanations and scaffolded cultural content for independent practice.

Finally, future work should examine how AI-driven analytics, learner modeling, and personalized recommendation systems can optimize self-regulated target setting and growth monitoring. Crucially, future research must expand beyond author-bounded

contexts by incorporating multi-institutional, cross-cultural, and comparative studies to evaluate how autonomous learning dynamics develop across structurally diverse educational systems.

6. Conclusion

This systematic review synthesizes 21 years of research on autonomous learning in Saudi and Arab foreign language education, offering a comprehensive and skill-specific account of how autonomy can be cultivated through structured training, digital tools, and learner-centered pedagogies. By drawing on this longitudinal corpus developed over two decades, this SR provides a rare, evidence-based account of autonomous learning in an underrepresented regional context, offering insights that inform both local practice and global scholarship. Together, the 55 constituent studies demonstrate that autonomy is not an innate trait but a learnable, developable ability that flourishes when learners receive explicit guidance, meaningful choice, and access to flexible technological resources. Across listening, speaking, pronunciation, reading, writing, grammar, vocabulary, ESP, translation, interpreting, and AFL learning, students consistently achieved measurable gains in proficiency, confidence, and motivation when engaged in self-directed practice supported by clear instructional frameworks. By positioning this synthesis within the global landscape of autonomous learning research, it fills a critical gap, providing a culturally grounded, skill-oriented, and internally coherent framework that complements and extends international work. The findings affirm that autonomous learning is both feasible and pedagogically powerful in the Saudi context, offering a pathway toward more resilient, self-regulated, and lifelong learners. Ultimately, this SR underscores the importance of integrating autonomy into language education as a core pedagogical principle, one that prepares learners not only for academic success but also for the demands of an increasingly digital and self-directed world.

Conflicts of Interest: The author declares no conflict of interest.
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