Reconceptualizing Self-Directed Learning in the Era of Generative AI: An Exploratory Analysis of Language Learning

Belle Li, Curtis J. Bonk, Chaoran Wang, and Xiaojing Kou

***Abstract*—This exploratory analysis investigates the integration of ChatGPT in self-directed learning (SDL). Specifically, this study examines YouTube content creators' language-learning experiences and the role of ChatGPT in their SDL, building upon Song and Hill's conceptual model of SDL in online contexts. Thematic analysis of interviews with 19 YouTubers and relevant video contents reveals distinct constructs of ChatGPT-integrated SDL, suggesting a reconceptualization and refinement of the SDL framework in the consideration of generative artificial intelligence (AI). This framework emphasizes critical aspects of utilizing ChatGPT as an SDL tool on two distinct levels: 1) the interactive relationships and interplay between learners' personal traits and their ongoing learning processes (local) and 2) the evolving nature of SDL in the rapidly advancing landscape of generative AI, with socio-political-cultural foundations of AI constantly shaping the learning environment where SDL occurs (global). The study highlights the potential of ChatGPT as a tool for promoting self-directed language learning (SDLL) and provides implications for the development of learning technologies and research on AI-facilitated SDL.**

***Index Terms*—Artificial intelligence (AI), ChatGPT, language learning, self-directed learning (SDL), YouTuber.**

I. Introduction

ADVANCEMENTS in artificial intelligence (AI) tools, such as ChatGPT, have the potential to reshape education and how students approach their academic journey [2], [3], [4], [5]. Self-directed learning (SDL) can play a pivotal role in maximizing the educational benefits of ChatGPT in the era of generative AI. Through SDL, learners can actively explore the features of ChatGPT, experiment with different conversational strategies, and evaluate its effectiveness in achieving their learning goals. SDL empowers learners to adapt ChatGPT to their individual needs [6], integrate it into their existing learning practices, and make informed decisions regarding its utilization. Likewise, ChatGPT offers promise for open education by providing practical and adaptable support that enhances the independence and autonomy of self-directed learners [3].

With the growth of open education contents and learning portals on nearly any topic of importance, individuals in the 21st century now have a plethora of choices and opportunities regarding what they will learn. Mol and van Dam [7] noted that the future of the workplace is constantly evolving and, as a result, demanding people's capability to acquire new skills in response to shifting requirements when necessary. With the advent of automation, AI, and digital technologies, individuals need to actively acquire the necessary skills and knowledge to adapt to these trends. The ability to engage in SDL becomes crucial as individuals take increasing ownership of their educational journey while being continuously forced to learn new skills and make concerted attempts to stay employable in a rapidly changing job market.

However, this also raises concerns about the widening gap between individuals proficient in utilizing AI for learning and those who are not [8]. The ability to effectively harness AI tools for SDL is becoming increasingly crucial, potentially leading to disparities in learning outcomes and opportunities. Moreover, despite the widely acknowledged potential of AI in education, there is a dearth of focused research on how generative AI specifically influences SDL processes. The existing theoretical frameworks in SDL may not fully account for the nuances introduced by AI tools, such as ChatGPT.

In recent months, numerous YouTube videos about using ChatGPT and other AI tools for learning have emerged. Li et al. [9] conducted a mixed-method netnographic study that identified 140 videos focusing on ChatGPT in language education, categorizing content creators into four groups: 1) educators; 2) learners; 3) technology professionals; and 4) e-learning providers. The majority of content creators were educators, primarily language teachers (91.4%), with English and Japanese teachers being the most prevalent. Due to the longer format, YouTube videos allow content creators to produce more in-depth content compared to other video platforms, such as TikTok. This is particularly relevant in contexts where detailed explanations or extensive coverage of a topic is necessary [10], [11]. Studies have found that YouTube videos tend to have higher quality content compared to TikTok; nevertheless, both the platforms have issues with unreliable information [11], [12].

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Belle Li is with Purdue University, West Lafayette, IN 47907 USA (e-mail: li4808@purdue.edu).

Curtis J. Bonk and Xiaojing Kou are with Indiana University, Bloomington, IN 47405 USA (e-mail: cjbonk@indiana.edu; xkou@indiana.edu).

Chaoran Wang is with Colby College, Waterville, ME 04901 USA (e-mail: chaowang@colby.edu).

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With more than two billion monthly accesses, YouTube has been widely used for learning purposes, offering various learning objects [13]. Through interactions on social media, influencers can gradually change the opinions of their followers, including learners [14]. YouTube empowers users to take charge of their own learning, facilitating an SDL platform [15]. YouTube users frequently engage in SDL, seeking specific cues and video metadata to understand content with minimal effort [16], [17]. This study, thus, examines YouTube content creators' experiences due to their wide impact on self-directed learners around the world.

The present study puts SDL in the spotlight, examining how various dimensions of SDL are manifested in a significantly changing learning environment with the emergence of ChatGPT, a disruptive tool that enters both the formal and informal learning landscapes. In other words, through analyzing the perceptions of pioneer users of ChatGPT (YouTubers), we aim to understand how ChatGPT and generative AIs, in general, redefine SDL. In achieving this goal, this study does not limit SDL to a particular type of learning, i.e., formal or informal. Furthermore, we focus on language learning as the subject area in this study, due to the particular multitude of strengths and opportunities that ChatGPT, an advanced large language model, brings to language learning. However, language learning only serves as the context of the SDL framework we study. The implications of the findings presented here extend far beyond the context of language learning to countless other domains utilizing generative AI for SDL.

II. Literature Review

The emergence of ChatGPT has garnered significant attention from scholars and practitioners in the field of education. In a relatively short time, numerous studies have investigated the advantages and challenges associated with the use of ChatGPT in different educational settings [18], [19]. These studies have focused on various domains within education, such as medical education [4], [20], engineering education [21], journalism and media education [22], [23], science education [24], [25], and language education [18], [26], [27]. In addition, concerns have been raised regarding the responsible and ethical use of ChatGPT for lifelong learning [28] and the potential impact on educational assessment practices [29]. Equally important, some researchers have explored the use of ChatGPT for personalized learning experiences. For instance, ChatGPT has been employed as a tutor to facilitate personalized learning [30], and it has been utilized for personalized English language learning for Japanese students [31].

However, an area that has received much attention yet lacks extensive research is the potential of ChatGPT to enhance learners' ability to guide and direct their own learning [3], [6], [32], commonly referred to as SDL. SDL refers to learning situations, where the learner takes charge or control to plan, implement, and assess his/her own learning process and results [33], [34], [35]. In this age of increasingly online, informal, open, and distance forms of learning and expanded notions of learning environments, SDL has become a critical competency for learner success [36], [37], [38].

The study of SDL has been extensively explored prior to the emergence of ChatGPT. Over the past decade, there has been increasing research attention on SDL in both the formal and informal learning environments. In formal settings, studies have focused on implementing SDL approaches in courses and utilizing blended learning environments [39]. These studies emphasize the importance of learners becoming aware of their existing knowledge and expanding it through interaction with peers and teachers [40]. In the context of informal learning, studies have evaluated the effectiveness of SDL in the workplace [41] and examined the value of interactions in informal learning environments, such as YouTube [15], [42], Facebook [43], [44], and Duolingo [45], [46].

Recently, there has been a shift in focus toward the online context and the role of technology in facilitating SDL [47], [48], [49]. Studies have examined the effectiveness of SDL in massive open online courses (MOOCs) and other online learning platforms [48], [50]. Sumuer's [50] study examined the factors influencing college students' SDL with technology. Findings showed that SDL readiness and the use of Web 2.0 tools significantly predicted students' SDL with technology. The use of Web 2.0 tools also mediated the influence of online communication and computer self-efficacy on SDL. Sumuer's [50] research further emphasized the significance of supporting students in developing SDL skills, effectively utilizing Web 2.0 tools, honing computer skills, and fostering online communication to enhance their learning experiences.

Researchers have developed guidelines and frameworks specifically designed to promote SDL in online contexts. For instance, Zhu and Bonk [48] have recently designed 15 guidelines to foster SDL in online MOOC environments. In addition, investigations have been conducted to understand online language learners' experiences of self-directed language learning (SDLL) using educational tools and technologies, such as Duolingo [45], [46]. Karimi [51] introduced and empirically tested a framework that considers learners' characteristics, mobile platform features, and the learning context. The results suggested that learning style and perceived playfulness have a significant influence on mobile learning usage in both the formal and informal learning situations. Lai [52] examined the influence of teacher behaviors on learners' self-directed use of technology for learning outside the classroom. Based on interviews with undergraduate foreign language learners, a conceptual model was developed, which included three types of teacher support: 1) affection support; 2) capacity support; and 3) behavior support.

These studies show that the landscape of SDL is evolving significantly due to digital technologies and social media [53]. Learners were no longer confined to the structured curricula of formal education; instead, they were empowered to pursue language learning through a mixture of structured guidance and self-driven exploration, often mediated by digital platforms, such as YouTube [15] and Duolingo [46]. The advent of ChatGPT further accelerates this trend. Thus, when discussing SDL in the era of ChatGPT, we believe that it is crucial to recognize that the traditional boundaries between formal and informal

learning environments are increasingly blurred. In this context, we define SDL in the age of ChatGPT as a dynamic and fluid process, where learners autonomously navigate and integrate resources from both formal educational structures and informal digital platforms. We examine how ChatGPT, a versatile AI tool, can facilitate this integration by providing accessible personalized learning experiences that transcend conventional educational settings.

Recent research on ChatGPT in language education has found that, unlike traditional search engines, ChatGPT can sustain conversations and provide tailored responses, supporting learners' self-reflection and critical thinking. However, to effectively implement ChatGPT in SDLL, it is essential to consider factors, such as perceived usefulness, enjoyment, and alignment, with learners' goals and intentions [54], [55].

Liu and Ma [54] evaluated the process by which English as a foreign language (EFL) learners accept ChatGPT in their informal digital learning of English to explain EFL learners' acceptance of ChatGPT in their self-directed English learning beyond the classroom. They found that while the perceived ease of using ChatGPT does not directly influence learners' attitudes, it impacts attitudes through the full mediator perceived usefulness of ChatGPT. Learners who view ChatGPT as useful demonstrate a higher level of behavioral intention, which strongly predicts their actual use of ChatGPT for English learning outside the classroom.

Cai et al. [55] found that factors such as information system quality and hedonic motivation (i.e., the fun or pleasure derived from using the technology) significantly contribute to performance expectancy and perceived satisfaction in ChatGPT-assisted language learning. Behavioral intention (i.e., the degree to which learners intend to use ChatGPT for language learning) is noted as a better predictor of learning effectiveness compared to perceived satisfaction and performance expectancy [55]. The study reveals that ChatGPT enhances SDLL by fostering engagement, autonomy, and effectiveness, contingent on the alignment of tool quality with learner intentions.

While SDL has its own established principles and practices, the emergence of AI technologies, such as ChatGPT, introduces new possibilities and challenges. One challenge is the rapid evolution of generative AI, making it difficult for learners to keep up and effectively utilize available AI tools. This phenomenon highlights the presence of a "learning optimization gap" wherein learners struggle to fully leverage ChatGPT's technical affordances [18]. In addition, there is a "knowledge comprehension gap" [18] between the content generated by ChatGPT and learners' capacity to understand and integrate such content into their existing knowledge framework. Hence, further research is now needed to understand how ChatGPT might be featured in the various aspects of SDL and, as a result, may potentially redefine SDL in education including instructor emphasis and learner reliance on it. The understanding will help educators effectively guide learners in utilizing AI technologies to optimize their learning experiences.

We used the following questions to guide our data analysis.

1) What motivates YouTubers to use ChatGPT for SDLL?
2) How do YouTubers define and understand SDLL?
3) What learning strategies did YouTubers employ when using ChatGPT to support their SDLL?
4) What features or aspects of ChatGPT facilitate learners' SDLL?

The result of the exploration serves as the foundation for us to answer the following open-ended research question.

How well does the current SDL model explain AI-assisted SDL? For instance, what dimensions and indicators need to be adjusted, added, or removed?

III. Theoretical Framework

A. Self-Directed Learning

The underlying premise of this study is that a change in the learning environment can lead to the discovery of a new agency in the way students perceive their learning process [56]. The present study primarily adopted Song and Hill's [1] model of SDL and, accordingly, does not "isolate technology as one of the dimensions of online learning" [57]. Notably, Song and Hill's [1] study attempts to provide a comprehensive model for understanding SDL in an online environment. Song and Hill's [1] model is based on the models of Candy [34], Hiemstra [33], and Garrison [35]. The resulting framework contains three primary constructs (see Fig. 1): 1) personal attributes; 2) autonomous process; and 3) learning context. First, personal attributes refer to the moral, emotional, and intellectual management of a person. Second, the process construct indicates learner autonomy over the learning process. Third, the context construct refers to the environment where learning takes place. This third variable, the learning context, was added as a new dimension to reflect the impact of environmental factors on SDL. This framework was developed to better understand SDL in the online learning context.

In this study, ChatGPT serves as the context through which we investigate SDL. Meanwhile, we also aim to understand how SDL unfolds in environments enriched by AI tools, such as ChatGPT. Such a perspective allows us to examine the interactive relationships between learners and AI technologies in the process of language learning. This examination involves investigating how ChatGPT's functionalities—such as conversational interaction, personalized feedback, and content generation—support and enhance the SDL experience. In particular, our analysis delves into how learners leverage ChatGPT to achieve their language-learning objectives, thereby illustrating the tool's capacity to aid SDL.

IV. Research Design

This qualitative study adopted a phenomenological research design [58]. Phenomenological research is a qualitative approach that focuses on understanding and interpreting the essence of human experiences [59], [60], seeking to capture the subjective perspectives and lived realities of participants. In this study, the use of a phenomenological research design is justified due to the limited existing knowledge about the intersections between ChatGPT and SDL. The exploratory nature of phenomenological study allows us to delve into the depth of

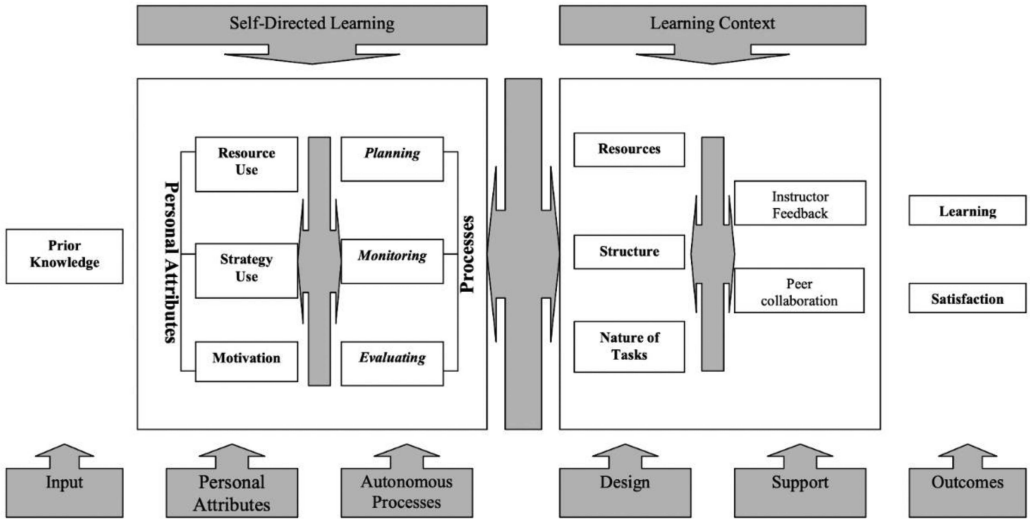

Fig. 1. Song and Hill's [1] model for SDL in online contexts.

participants' experiences, providing valuable insights into the complex dynamics and implications of utilizing generative AI in the context of SDL.

A. Data Collection

Our study's emphasis on YouTubers as the primary subjects is grounded in the unique and influential role that YouTube, as a Web 2.0 platform, plays in the current educational landscape. First, YouTubers in this niche are not only content creators, but more importantly, they are early adopters and adept users of new technologies, such as ChatGPT. The participants in this study are experienced SDLLs who have extensively experimented with using ChatGPT to facilitate language learning. Their engagement with ChatGPT and other generative AI platforms for language-learning purposes provides a unique lens through which we can understand the practical applications, challenges, and strategies associated with using such AI tools and platforms in SDLL. YouTubers serve as intermediaries who experiment with, interpret, and disseminate innovative language-learning methods to a broader audience. Second, YouTubers have an influence on shaping the perceptions and learning approaches of their viewers, many of whom are language learners themselves. Unlike individual language learners, YouTubers often engage with feedback and discussions from their audience, thereby providing a richer and more diverse range of insights and experiences. This communal aspect is crucial in understanding how SDL, especially in the context of AI tools, such as ChatGPT, is evolving in response to collective experiences and discussions. Their publicly available content provides an accessible and comprehensive dataset for analysis. Importantly, these YouTubers have extensively used ChatGPT for language learning, as evidenced by their detailed and informative content about it. Finally, YouTube as a platform potentially provides the largest amount of relevant data (videos from a range of content providers in this case) as the world's most dominant social media and video hosting platform [61]. Notably, YouTube has content from more than 100 countries across 80 languages [62]. The richness and width of content coverage as well as the diversity in YouTubers and YouTube viewers make YouTube an excellent platform that provides sufficient data for our research purposes.

Upon obtaining ethical approval from our university's Institutional Review Board, we started our data collection process as follows.

1) Interviews: Data sources include interviews with 19 YouTubers, with each YouTuber being interviewed once. Our prior research, involving a detailed examination of 140 YouTube videos centered on ChatGPT and language education, yielded a pool of content creators who were actively discussing and utilizing ChatGPT for language-learning purposes [12].

Once we had compiled a list of potential interviewees, we reached out to them via email (which can be found on their "About" page). Our emails were tailored to each YouTuber, acknowledging their unique contributions to the discussion of ChatGPT in language education and inviting them to participate in our study. We explained the purpose of our research, the significance of their insights, and how their experiences with ChatGPT could contribute to a deeper understanding of its role in language learning and, in turn, help others similarly engaged in online language learning around the world.

The participants in this study represent a wide range of backgrounds, experiences, and demographics (see Table I). The YouTubers providing educational content on YouTube are themselves language learners; in fact, all the individuals we interviewed possessed proficiency in at least two languages. Eight of our participants are polyglots who have acquired multiple languages through SDL methods. The number of subscribers among participants provides relevant contextual information about their influence, expertise, and potential representativeness within the language learning or teaching community, strengthening the validity and applicability of the study's findings. The participant diversity helped ensure that the findings of the study could capture a comprehensive understanding of the research topic. Of note, all the interviewees were YouTubers who, not too

TABLE I
NINETEEN INTERVIEWEES' DEMOGRAPHIC INFORMATION

Interviewee	Subscribers as of July 5, 2023	Target Language Learning/Teaching	Positioning on YouTube
Grace Kuo	208K	Chinese	Mandarin Teacher
Carlos	5.48K	Spanish; Portuguese; Korean; Latino; French; German; Mandarin; Italian; Serbian; Judeo Spanish; Judas	Polyglot Activist
Craig Whelans	12.6K	English	English Teacher
Lucas & Fabricio	38.7K	Portuguese; English; Russian; Spanish; German; Italian; Polish; Ukrainian; Thai; Armenian; Turkish; Mandarin	Polyglot Teacher
Elisabeth & Mathieu	129K	French	French Teacher
Mark Bacon	7.13K	Brazilian Portuguese	Software Engineer/ Language Learner
Jo Gakonga	36.9K	English	English teacher trainer
Russell	76.3K	English(teaching), French, Spanish and nail polish (can speak)	English teacher trainer
PolyglotPanda	11.6K	Spanish, English, Italian and Esperanto	Spanish Teacher
Herr Antrim	194K	German	German Teacher
Tom Gally	939	Japanese	Professor/Japanese learner
Shuo Xiong	171K	Chinese	Chinese Teacher
Dustin Schermaul	2.06K	English; French; Italian; Dutch; Spanish	Language Learner/ Polyglot/Product Manager
Eric Williams	2.24K	Spanish; Japanese	Language Learner/ Polyglot
Clay	22.9K	Japanese	Japanese learner/Producer
Leodannis	3.7K	Spanish	Spanish Teacher
Pablo Román	113K	Spanish	Language Learner/ Polyglot
Colleen	799	Korean, French and Spanish	Language Learner/ Polyglot
Catherine Introligator	1.62K	French, English, German, Spanish	French Teacher/Polyglot

surprisingly, preferred to be addressed by their names during the study.

We conducted semistructured interviews with the YouTubers to gather in-depth rich information about their learning and teaching experiences with ChatGPT. The semistructured interview protocol, designed with Song and Hill's model of SDL in mind, included five parts: 1) consent information; 2) one question about the interviewees' background; 3) one question about SDL definition; 4) three questions about the motivation for using ChatGPT; and 5) six questions about their personal attributes, learning processes, and the learning context of using ChatGPT (see Appendix A). To conduct the interviews, the researchers utilized Zoom, an online meeting tool. Each interview session lasted approximately 45–60 min. The interviews were all conducted by the same three research team members consistently via video format, and they were recorded using Zoom and transcribed using Otter.ai.

2) Videos: The data collection from videos involved gathering content from the YouTube channels of the 19 YouTubers who were interviewed. These videos were chosen to complement the insights obtained from the semistructured interviews and gain a deeper understanding of the participants' experiences with ChatGPT and SDLL. Any videos published after July 5, 2023 were not included. To ensure the relevance and alignment of the video data with the research focus, the following three criteria were applied during the video selection process.

1) *Topic relevance:* Only videos directly related to the YouTubers' experiences with ChatGPT in the context of SDLL were chosen.
2) *Authorship:* The videos selected were exclusively those created and uploaded by the 19 YouTubers who participated in the interviews.
3) *Content depth:* A range of videos, including instructional tutorials, language practice sessions, reflections on language-learning progress, and discussions about ChatGPT's impact on SDL, were included to obtain comprehensive insights.

Details of selected videos from YouTubers' channels are provided (see Appendix B).

It is important to point out that while the YouTube videos uploaded by these content creators were considered valuable sources of information, they played a secondary role in our analysis. These videos were primarily leveraged to: 1) assist in identifying the most suitable participants; 2) aid in the development of individualized interview questions tailored to each participant; and 3) contribute to the triangulation of our data. They informed our understanding of each YouTuber's approach to discussing and demonstrating ChatGPT in a language-learning context. This foundational information provided extended context and background information, helping us to frame our interview questions and interpret the responses more effectively. We tailored our questions to explore specific strategies, challenges, and perceptions highlighted in their videos. This ensured that our interviews were deeply relevant to each participant's experiences and expertise. Importantly, the interview protocol was adapted based on whether participants positioned themselves more as teachers or learners.

B. Data Analysis

To analyze the interview data, the researchers employed open coding followed by thematic analysis (TA). During the open coding phase, the researchers approached the data with their research questions in mind. Open coding was conducted using Google spreadsheet. The researchers thoroughly read through

TABLE II
CATEGORIES AND INDICATORS

Category	Subcategory	Indicator
	Input	*Technology Readiness
		*Content Area Knowledge
		*Prior Learning Experience
SDL	Personal Attribute	*Self-efficacy Beliefs
		*Attitude — Dispositions, Emotions, and Perspectives
		Motivation
		Resource Use
	Autonomous-Adaptive Process	Strategy Use
		Planning
		Monitoring
		Adapting
		Evaluating
Learning Context	Design Elements	Resources
		Structure
		Nature of the Task
		*Computational Agency
	*Social Elements	*Institutional Policy for AI Adoption
		*Social Justice Considerations
		*Ethical Considerations
		*Sociocultural and geopolitical norms
	Support Elements	*Non-human (video, OER, other learning resources)
		Human (instructor, mentor, peer support)
	Outcomes	Positive Reinforcement
		Learning

Note: * indicates added sub-categories or indicators.

the entire dataset to familiarize themselves with the content. Subsequently, they divided the data into smaller meaningful parts or chunks. Each chunk was assigned a code that represented its essence or main idea. The researchers compared each new chunk of data to previously coded descriptions, assigning similar chunks to the same code.

The TA was conducted using the TA method by Braun and Clarke [63] and Braun et al. [64]. Once the individual coding was finished, two members of the research team collaborated and discussed the analysis results, including the identified categories and themes. This debriefing process served to enhance the reliability and validity of the analysis.

While conducting the data analysis, the researchers identified several explicit and distinguished constructs that could not be fully explained by Song and Hill's [1] model of SDL. As a result, the researchers decided to further develop the model, incorporating the unique insights from the data collected during the interviews.

C. Expert Review of the Framework

The developed framework is an expansion and adaptation of Song and Hill's [1] model to incorporate the novel aspects discovered during the research. As a crucial step in the validation process, the research framework underwent expert review by two subject matter experts in the fields of SDL and natural language understanding.

Experts received the research framework and relevant documentation, including its development rationale, components, and intended application. Feedback was collected through individual meetings and written correspondence. The feedback was thoroughly analyzed and used to refine the framework, addressing ambiguities and improving alignment with research objectives and the existing literature. The iterative expert review process led to a finalized research framework.

V. FINDINGS

The study's findings highlight distinct constructs that are both aligned with and extend beyond the scope of Song and Hill's [1] model of SDL when integrating ChatGPT into the language-learning process. We identified and added indicators (i.e., technology readiness, content area knowledge, and prior learning experience) in the input category. In addition, we added a new subcategory (i.e., social elements) in the learning context category as well as new indicators and considerations within the personal attribute subcategory, namely, self-efficacy beliefs and attitude dispositions, emotions, and perspectives). Final modifications to Song and Hill's [1] SDL model included adding "adapting" as an indicator within the autonomous adaptive process subcategory for the SDL category and "computational agency" as an indicator in the design element subcategory within the learning context category. These results are organized according to the categories and indicators presented in Table II.

All the indicators and subcategories were derived from the views expressed by YouTubers. Table III presents example statements provided by several participants in the study.

In the following section, we will provide a more detailed explanation of the features, dimensions, and elements involved in ChatGPT-facilitated SDLL as presented in the aforementioned tables.

A. SDL Personal Attribute With Generative AI Integration

In Song and Hill's [1] original model, personal attributes refer to the characteristics a learner brings to a particular learning context. These characteristics include learners' motivation and their cognitive strategies for managing and taking responsibility for their own learning. In our study, we find that personal attributes can also encompass the moral and emotional dimensions that shape learners' engagement with ChatGPT as an SDL tool. Learners' personal attributes can be shaped by

TABLE III
SUBCATEGORIES, INDICATORS, AND STATEMENTS

Subcategory	Indicator and Statements
Input	*Technology Readiness* "So you've got this barrier of technology, then that's not a fault of ChatGPT, that's a fault of maybe age or awareness of how to use the technology in the first place." (Craig Wheland) *Content Area Knowledge* "I know enough Portuguese words to form sentences. Let me go to ChatGPT and see if I can use this in practice." (Mark Bacon) *Learning Experience* "More advanced students who are able to...compare what ChatGPT gives them and their own input [can benefit more], because they have a good passive knowledge base." (Catherine Introligator)
Personal Attribute	*Self-efficacy Beliefs* "But I think it depends in general, since the heart of my language learning comes from consuming comprehensible and compelling input. I don't really have the risk that I overuse ChatGPT or language learning. And I really value human interaction." (Dustin Schermaul) *Attitude - Dispositions, Emotions, and Perspectives* "If I have some sentences and I'm not sure if I write them correctly, I just pass it into ChatGPT and ask it to correct it, or to check if that's natural. So, I feel like it's useful to solve your confusion in time." (Grace) *Motivation* "So, the motivation to learn languages and to use languages is driven mainly by the desire to interact…" (Tom Gally) *Resource Use* "I think I need to be more patient with ChatGPT in 2023, so I made a bit more modification [of the prompt]…" (2:05 from Shuo Xiong's video) *Strategy Use* "If you are reading an article that is a bit more advanced than your own level, you can use it to make it more simple or easier, that you can understand, you don't have to ask to translate it. You just ask it to transfer from a more difficult article to an easier one." (Shuo Xiong)
Autonomous-Adaptive Process	*Planning* "I think with ChatGPT, it helps me understand how I can stay structured as a person that can honestly be sporadic and all over the place." (Eric Williams) *Monitoring* "So, every Sunday I will sit down and kind of plan my language-learning week and about two or three languages per day that I will study and the level of interest." (Colleen) *Adapting* "Let me just adapt it a little bit. Let me maybe remove these words and remove this expression…" (Leodanis) *Evaluating* "And then more advanced students who are able to self-evaluate or compare their production with what ChatGPT gives them and what their own input and take what they need and leave out the rest because they have a good passive knowledge base." (Catherine Introligator)
Design Elements	*Resources* "When it comes to conversation, casual speech, they [ChatGPT] don't have the data because it's all oral communication." (Catherine Introligator) *Structure* "I always say, first, you need to keep updated about what ChatGPT can do because it's developing really fast." (Grace) *Nature of the task* "If I paste that text in Solitaire…I wouldn't be able to paste it first. If I were able to paste it and send it, it wouldn't be recognized. And if you were recognized, you wouldn't be able to use it. So, there are three steps of which GPT will fail." (Carlos) *Computational agency* "[The AI can] know what language level can be for different levels of learners." (Jo Gakonga)
Social Elements	*Social justice considerations* "…it does reproduce ideology that feeds off the ideological biases of its creators very clearly." (Carlos) *Ethical considerations* "The ethical issues are huge, and they go far beyond education..." (Tom Gally) *School policy for using ChatGPT* "They've issued statements within the last month or two telling students you cannot use it." (Tom Gally) *Sociocultural and political norms* "I heard that other AI programs now have the function to double check it against another search engine which is also biased in the same political sense." (Carlos)
Support Elements	*Nonhuman (video, OER, other learning resources)* "I will go to YouTube…because I feel like it's more difficult for me to read than to just listen to it." (Shuo Xiong) *Human (Instructor, mentor, peer support)* "I wrote a short paragraph and I asked ChatGPT to check it. So after I got all the corrections I posted it on my Instagram and I asked my other Spanish native speakers to check it for me." (Shuo Xiong)
Outcomes	*Positive Reinforcement* "The biggest motivator is results. So if people see results after a day they started, they get more motivated to continue." (Lucas & Fabricio) *Learning* "Learning happens if something clicks, say I saw the correction and I understood. I can use that concept in my own context.…" (Catherine Introligator)

their familiarity, comfort, and proficiency with the technological tools and platforms (in this case, ChatGPT), learner's existing knowledge of the target content they are learning (e.g., current language proficiency), and their past learning experiences and backgrounds.

One particular indicator we added is the self-efficacy beliefs of the learner. Self-efficacy beliefs, as proposed and defined by Bandura [65], [66], refer to a learner's beliefs in their ability to succeed in a particular situation or activity. In the context of utilizing ChatGPT as a tool for SDL and acquiring knowledge, our findings show that self-efficacy involves the learner's perceptions of their own competence and confidence in effectively interacting with the language model. These perceptions reflect their ability to ask relevant questions, receive valuable information and guidance, and overcome any potential limitations or misunderstandings associated with ChatGPT to achieve their intended learning outcomes.

According to our findings, an individual's attitudes, especially their overall mindset, perspective, and disposition toward utilizing ChatGPT as a learning tool, also play an important role

in shaping their SDLL practices. While Song and Hill's [1] model did not mention this indicator for personal attributes, we highlight the importance of recognizing the role that learners' opinions and expectations regarding the effectiveness and value in the capabilities and suitability of ChatGPT in supporting their goals could influence their learning in major or more modest ways. Furthermore, learners' dispositions, emotions, and feelings toward ChatGPT were also intertwined with their level of trust in AI systems. Trust was viewed as a form of judgment that encompassed both cognitive and affective elements [67]. Learners who had positive attitudes and emotional receptivity were more likely to have a "leap of faith" toward a favorable outcome, believing that ChatGPT may serve as a beneficial language-learning tool [68].

Motivation refers to the intrinsic and extrinsic motivation that drives an individual's behavior, engagement, and persistence toward achieving a goal or fulfilling a need [1]. When using ChatGPT for language learning, the YouTube content creators highlighted that intrinsic motivation (e.g., curiosity; novelty effect of chatbots [69]) fueled their exploration and discovery of new information, while extrinsic motivation (e.g., educational achievement [29]; professional productivity [70]) also influenced their engagement with ChatGPT.

Resource use refers to the utilization of available information, tools, and references, both within ChatGPT and with external sources, to support and enhance the learning process. It involves accessing, evaluating, and incorporating relevant resources to gather information, verify answers, deepen understanding, and achieve the desired learning goals.

Strategy use involves employing effective approaches and techniques during interactions with ChatGPT to achieve desired outcomes. The reported SDLL strategies of YouTubers include: 1) clearly defining the purpose; 2) asking specific questions; 3) providing clear context; 4) breaking down complex queries into simpler ones; 5) using probing techniques (such as asking follow-up questions, seeking clarification, requesting more information, and exploring different perspectives) to gather more information; and 6) critically evaluating and validating responses the responses generated by ChatGPT. These strategies involve a back-and-forth exchange of information and ideas between the learner and the AI model.

B. SDL Autonomous-Adaptive Process

The autonomous-adaptive process, originally named as "autonomous process" in the Song and Hill [1] model, represents a continuum of learners' control over their learning journey. We acknowledge that, at one end, learners exercise a high degree of autonomy and take charge of their learning process while utilizing ChatGPT, and at the other end, adaptivity is equally important. It is a dynamic process that can evolve into a strategy with repeated usage.

Simply put, our emphasis on adaptivity demonstrates that learners display a dynamic and agile approach to their interactions with the AI model to enhance their learning experience. This adaptivity entails the learners' capacity to flexibly adjust and fine-tune their engagement with the AI system in pursuit of personalized and optimized learning outcomes. The autonomous-adaptive process involves learners' iterative, rather than linear, process of planning, monitoring, adapting, and evaluating the learning experience with ChatGPT. Their continuous adjustments and adaptations optimize the learning experience and foster personalized and effective learning outcomes. As learners acquire new knowledge and insights, they adeptly adapt their queries, prompts, and modes of engagement to reflect their evolving cognitive states and learning objectives.

C. SDLL Learning Context

Context refers to the learning environment in which learners interact with ChatGPT. Focusing on the learning context highlights the environmental factors that influence the level of self-direction provided to the learner [1]. In this study, we found that in addition to the design elements and the support elements demonstrated in Song and Hill's [1] conceptualization, social elements also greatly impacted learners' ChatGPT-facilitated SDLL learning experiences.

The design elements of ChatGPT encompass a multifaceted array of components including: 1) resources; 2) structure; 3) nature of tasks; and 4) computational agency that significantly influence its capabilities and functionality as a language model for learning. First, resources, such as its architecture, foundation model [71], [72], and training data profoundly impact ChatGPT's language use, domain expertise, and potential data biases.

Second, the structure of the AI model incorporates vital aspects such as content moderation and ensuring that its responses adhere to ethical guidelines and societal values. That structure also includes the regulation of the system, represented by policies set by the provider (e.g., OpenAI) that govern its use, accessibility, and updates.

The third design element, the nature of the task in the context of ChatGPT, involves two fundamental aspects: 1) the type of task (e.g., seeking clarification/feedback, translation, providing examples, etc.) and 2) the language used to interact with the AI model during the task (e.g., English, Chinese, Māori, Python, Java, etc.).

The fourth design element, computational agency, refers to the level of control and autonomy that the AI model has in generating responses [73]. Although the current level of computational agency in ChatGPT is still limited, it is considered a developing and anticipated future trend in AI language models. This aspect of design has been recognized and emphasized by YouTubers, who express the need and expectation for AI models to exhibit more advanced computational agency. As technology evolves and AI research progresses, the enhancement of computational agency in ChatGPT holds the potential to revolutionize its capabilities, making it more adept at generating nuanced and contextually relevant responses to complex and personalized tasks for SDL.

Incorporating social elements is of paramount importance in the integration of ChatGPT as demonstrated by our findings. These results resonate with the broader discourse and public debates surrounding the challenges that generative AI tools and platforms pose to society. Social justice considerations become instrumental in fostering equity, fairness, and inclusivity, while ethical considerations encompass issues of academic integrity,

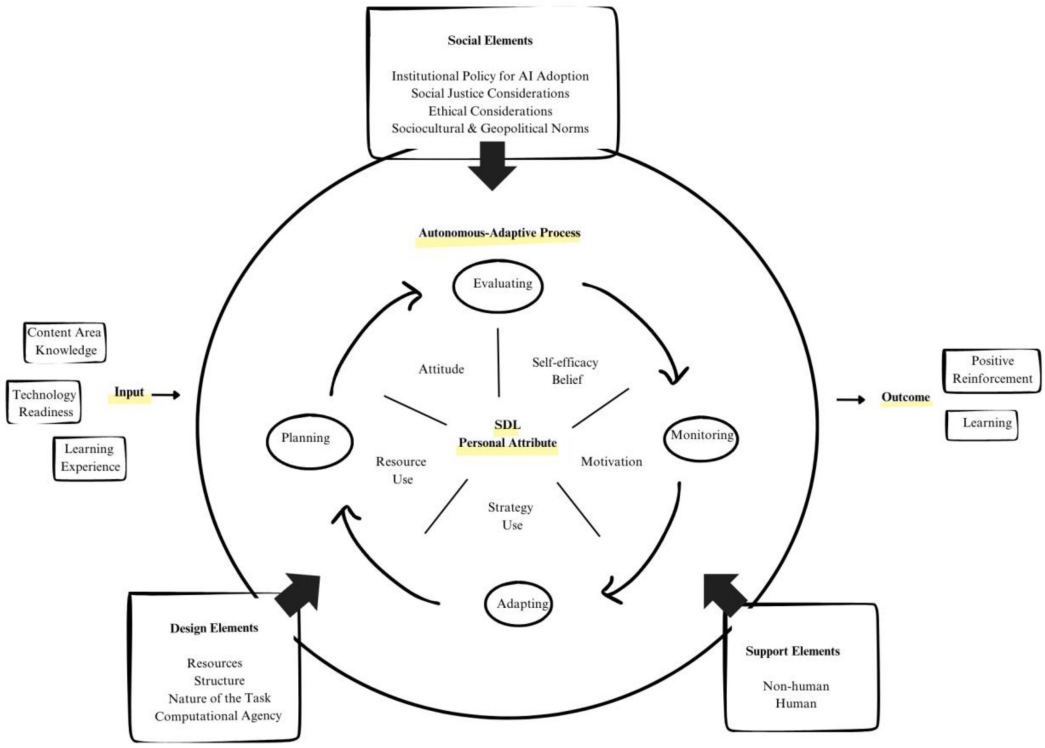

Fig. 2. AI-integrated SDL framework.

intellectual property, privacy, security, and transparency, as mentioned by YouTube content creators. School, department, or specific course policies assume a guiding role for learners in accessing and interacting with ChatGPT, ensuring that its implementation aligns harmoniously with the values and standards of the educational institution or organization. Moreover, the cultural and political norms prevailing within the learning community significantly influence the adoption and effectiveness of ChatGPT, calling for thoughtful integration to resonate with the values and expectations of the broader context.

With regard to support elements, nonhuman learning resources, such as shared online videos, audio-based podcasts, and open educational resources (OERs) such as digital books and open-access research articles, complement the use of ChatGPT. Human resources, including guidance provided by instructors or mentors and support from peers, can help learners navigate their SDL endeavors and ensure learners' use of nonhuman learning resources aligns with their learning goals.

VI. Discussion

We visualized our findings and proposed a refined framework of SDL with the integration of generative AI in Fig. 2.

While Song and Hill's [1] model provides a comprehensive framework for understanding SDL in an online environment, our proposed framework refines and extends this model by incorporating unique constructs emerging from the empirical evidence that specifically addresses the integration of generative AI. This extension acknowledges the changing landscape of language learning in the era of AI and how learners' interactions with such technologies shape their SDL experiences.

The updated framework highlights the importance of learners' technology readiness, self-efficacy beliefs, attitudes, and adaptive strategies in their interactions with ChatGPT. It also recognizes the influence of social elements and AI-assisted learning context on the integration of ChatGPT in language-learning environments.

Moreover, this framework makes salient the critical aspects of SDL in the context of utilizing generative AI as an SDL tool at two distinct levels: 1) the interactive relationships and interplay between learners' personal traits and their ongoing learning processes (at a more local or personal level) and 2) the evolving nature of SDL when generative AI platforms such as ChatGPT, acting as a catalyst, are rapidly advancing, and the socio-political-cultural foundations of AI are constantly shaping the learning environment where SDL happens (at a more global or societal level). Both of these levels or dimensions play pivotal roles in shaping learners' SDL experiences as they engage with the AI model for their educational pursuits.

The local interactive relationships emphasize the intricate interplay between learners' personal attributes and learning processes. Learners' personal attributes, such as self-efficacy beliefs, attitudes, motivations, and cognitive strategies, influence the level of engagement and control over of one's learning journey with ChatGPT. For instance, learners with higher self-efficacy beliefs may demonstrate greater confidence in interacting with ChatGPT and utilizing its resources to achieve their learning goals. Similarly, positive attitudes and strong motivations toward using ChatGPT as a learning tool can play a proactive role in learners' planning, monitoring, adaptation, and evaluation of their learning experiences. The study of Tossell et al. [74] explores how ChatGPT impacted the learning

process, grading, and students' trust in AI. Students initially viewed ChatGPT as a potential "cheating tool" but evolved to recognize it as a collaborative resource. This shift underscores the interplay between students' attitudes (toward ethical use) and their learning process, highlighting how positive attitudes toward technology can enhance engagement and learning outcomes.

At the same time, cognitive strategies, such as critical thinking and evaluation of the responses generated by ChatGPT, enhance the reliability and relevance of the information acquired. It is important to note that proficient self-directed language learners recognize the benefits of utilizing ChatGPT as a learning tool while acknowledging its limitations. As shown in the findings, many YouTubers adopt a critical and cautious approach in their strategy and resource use when incorporating ChatGPT into SDLL. This discerning approach was reflected in both their personal learning attributes and their autonomous-adaptive process, allowing them to make informed decisions on when and how to utilize ChatGPT effectively, thereby maximizing its advantages while being mindful of its potential shortcomings. As learners continuously engage with the AI model, their experiences evolve and transform over time. This added experience also interacts with learners' self-efficacy beliefs, motivation, and cognitive strategies in using ChatGPT effectively.

On the global level, the framework acknowledges the evolving and dynamic nature of AI-facilitated SDL. The global dimension of the framework, encompassing important social elements as well as design and support related ones, takes into account the broader contextual factors that influence the integration of generative AI in the SDL environment. As technology advances, the potential enhancement of AI's computational agency [73] and other design elements hold promise for generating more contextually relevant responses, further benefiting learners. Moreover, the societal impacts of AI also influence institutional policies and individuals' perceptions and decision making when utilizing ChatGPT. Ethical and social justice considerations, therefore, play a crucial role in learners' autonomous-adaptive processes, as well as their attitudes, emotions, and cognitive strategies when leveraging AI for SDL.

The interactive relationships and evolving nature of SDL emphasized by our model converge to create a comprehensive learning ecosystem, where learners' personal attributes and proactive engagement interact with ChatGPT's dynamic capabilities, resulting in an AI-enhanced personalized learning experience. This framework acknowledges the importance of learner autonomy and the potential for AI technology to support SDLL effectively. It also underscores the need for thoughtful consideration of learners' unique attributes and responsible implications and ongoing updates of AI to maximize the benefits for learners while ensuring the ethical and equitable integration of AI in education. As AI technologies and the understanding of learners continue to evolve, this framework serves as a foundational model for harnessing the full potential of ChatGPT as an empowering tool for SDL in an ever-changing educational landscape.

While acknowledging ChatGPT's potential in enhancing SDL, we want to outline several limitations. These limitations are inherent in the nature of generative AI and its integration into the learning process. First of all, the constant advancement of AI technologies, including ChatGPT, poses a challenge for learners to keep up and utilize these tools effectively. This rapid technological evolution leads to a "learning optimization gap," where learners struggle to fully leverage the technical affordances of ChatGPT [18]. The dynamic nature of SDL in the context of fast-evolving AI requires learners to continually adapt their strategies to effectively harness AI tools such as ChatGPT.

Second, as discussed in Warschauer's [8] work, there is a tension between learning and assistance. Second language learners may become overly reliant on AI tools for constructing sentences, choosing vocabulary, and forming grammatical structures. While these tools can provide immediate assistance and examples, there is a risk that learners might use them as a crutch, reducing their active intellectual engagement in the SDLL process [8].

Finally, ethical and social considerations, including concerns about academic integrity, privacy, and inclusivity, also pose significant challenges. A key issue is maintaining academic integrity, as perhaps best seen in the ease of generating text with AI raises, which poses serious concerns about plagiarism and the authenticity of learner-produced content. Clearly, SDL thrives when there is active engagement and motivation. The limitations of AI, particularly in inclusivity and bias, might affect learner engagement, especially for those from diverse linguistic and cultural backgrounds. This well-documented limitation can lead to decreased motivation and engagement in the learning process.

VII. Implications for Education and Development of Learning Technologies

The framework's emphasis on learner autonomy and adaption when using ChatGPT as an SDL tool calls for a shift in traditional pedagogical approaches. Incorporating ChatGPT as a resource for students allows them to explore topics, seek clarification, and engage in critical thinking, thereby promoting a more learner-centered and personalized learning experience. As the integration of ChatGPT encourages students to actively plan, monitor, adapt, and evaluate their learning processes, educators can adopt facilitative roles, guiding learners in optimizing their interactions with ChatGPT while fostering their SDL skills. Teachers should also focus on cultivating learners' AI literacy [75], digital skills, and strategies for integrating ChatGPT into their learning. To provide meaningful support for learners, educators need to understand the nuances of learners' interactions with the AI model and assist students in reflecting on the ethical, responsible, and critical use of AI.

Informed by our research findings and SDL framework, we suggest that the development of AI-powered learning technologies should be driven by a comprehensive consideration of learners' unique needs and abilities, as well as the collaborative interplay of the various social, design, and support elements. By aligning design and development efforts with learners' needs and socio-political-cultural considerations, AI and learning technologies can optimize SDL and provide transformative and empowering learning experiences for learners. Such design and development efforts could involve refining the architecture and training data, adding plug-ins or add-ons, and developing the

computational agency of AI models. In addition, investigating the use of adaptive learning algorithms and personalized learning platforms can also enhance the capability and functionality of AI models, supporting learners in their SDL journey. Since social elements also play a vital role in SDL, we suggest that the design of AI technologies should respond to ethical considerations, data privacy, and social justice issues to ensure that AI systems can be developed and utilized responsibly. By aligning design choices with ethical principles [76], AI technologies will be able to create a more supportive and inclusive learning environment for all learners.

The ongoing development of AI technologies and innovations should be directed toward addressing the "learning optimization gap" and "knowledge comprehension gap" to enhance SDL practices [18]. Research has proved that prompt engineering with ChatGPT can optimize information retrieval [77], thereby improving learning outcomes and addressing the "learning optimization gap." By mastering prompt engineering techniques, students can more effectively utilize ChatGPT for their learning needs, suggesting a pathway toward enhancing SDL practices. By continuously refining AI models and considering various ethical and social aspects, developers can create powerful tools to help learners achieve more effective and personalized learning goals since learners' personal attributes and cognitive strategies also influence the effectiveness of using AI as an SDL tool.

VIII. Limitations and Implications for Future Research

The current study has several limitations. First, the study's scope was confined to the integration of ChatGPT in language-learning contexts. As AI technologies are rapidly evolving, there may be other emerging AI models and applications that could significantly impact the landscape of SDLL in the future. Thus, we encourage future researchers to reevaluate our proposed model in light of new AI advancements and innovations. These could include investigating the use of advanced natural language processing, adaptive learning algorithms, and personalized learning platforms to further optimize AI-assisted SDLL experiences.

Second, the study primarily relied on learners' self-reported statements and perspectives. While efforts such as expert reviews were made to ensure the validity and credibility of the framework, the research findings could be further enhanced by triangulating with other types of data such as observations of participants' SDLL process. Also, the study only focused on 19 YouTube content creators as language learners. More research on different student populations of diverse grade levels with larger samples is needed to understand AI-assisted SDLL more comprehensively and systematically.

Furthermore, ChatGPT's primary application is in natural language processing and generation, making it particularly suitable for language-learning tasks. Its ability to generate coherent and contextually relevant responses aligns well with the language proficiency focus of language learning. However, the AI-integrated SDL framework extends its potential beyond language learning alone. The fundamental principles and constructs of the framework, including learners' personal attributes, adaptive strategies, AI-assisted learning context, and social elements, hold significant applicability and adaptability across diverse educational domains. Thus, future empirical research on other educational content areas and learning environments can be conducted to test, validate, and extend the framework. For instance, studies can examine the impact of AI technologies on learners' SDL behaviors, outcomes, and motivation in STEM education, professional development, health and medical education, and other fields.

Finally, longitudinal studies should be conducted to understand the long-term impact of AI-integrated SDL on learners' academic achievements, career readiness, and lifelong learning habits. Tracking learners' progress over extended periods can provide valuable insights into the sustained benefits and challenges of utilizing AI technologies for SDL. As was alluded to at the start of this manuscript, deeper understanding of how intelligent nonhuman partners, such as ChatGPT, enhance, extend, refine, and potentially even transform one's SDLL experiences, as captured by content creators on YouTube, might prove highly beneficial and impactful to countless formal and informal language learners and instructors in this highly digital learning age.

Appendix A
Interview Questions

1) Could you please briefly introduce yourself including where you are from and your background in terms of language learning/teaching?
2) People are using your shared online videos in YouTube, podcast shows, online news reports and videos, e-books, social media exchanges, and other technology resources to learn one or more languages with ChatGPT. We call such learning SDL. What is your definition of SDL?
3) What inspired you to start using ChatGPT in language education?
4) Why do you want to make a video about ChatGPT in language education?
5) How do you currently incorporate ChatGPT into your language teaching/learning practice?
6) Have you encountered any notable challenges or limitations when using ChatGPT, and how did you address them?
7) In your opinion, what are some of the most important considerations for educators who are considering incorporating generative AI into their teaching/learning practices? What could go wrong ethically, educationally, cognitively, practically, emotionally, psychologically, etc.?
8) What is/are the most innovative pedagogical ideas, teaching/learning strategies, or creative application(s) of ChatGPT you have seen?
9) Can you use three words to describe ChatGPT? Explain.
10) What advice would you give to other language instructors/learners in terms of integrating ChatGPT and related AI tools into their language practices?

APPENDIX B
YOUTUBE VIDEO LIST FOR THIS STUDY

Video No.	Interview No.	Title	Interviewee	Channel Name	Video views/video focus on ChatGPT until July 5	Subscribers until July 5	Likes until July 5
1	1	Will AI change the future of language learning? | ChatGPT	Grace	Grace Mandarin Chinese	13 008 views	208K subscribers	823
2	2	Does ChatGPT Reproduce or Challenge Language Ideologies?	Carlos	The Hyperpolyglot Activist — Dr. Yebra López	1 182 views	5.48K	8
3	3	How to Use ChatGPT for English Self-study	Craig Whelans	La Mansion del Ingles— Improve your English	7 198 views	12.6K subscribers	261
4	4	President Obama: ChatGPT, AI, and the Future of Language Learning	Lucas & Fabricio	Language Boost	19 270 views	38.7K subscribers	82
5	5	Je teste le ChatGPT pour apprendre le français. #learnfrenchwithAI	Elisabeth & Mathieu	Learn French with Elisabeth — HelloFrench	6 884 views	129K subscribers	618
6	6	Using ChatGPT-3 for Language Learning Conversations (Japanese, Brazilian Portuguese, French)	Mark Bacon	Mark Bacon	394 views	7.13K subscribers	16
7	7	Practice the present perfect- Using Chat GPT EFFECTIVELY for language learning	Elttraining (Jo Gakonga)	elttraining	1 948 views	36.9K subscribers	155
8	8	Chat GPT tutorial for teachers	Russell	Russell Stannard (Teacher Training Videos)	25 458 views	76.3K subscribers	788
9	9	11 Ways to Boost Your Spanish with ChatGPT AI Chatbot	PolyglotPanda	PolyglotPanda — Learn Spanish with TV Series	2 755 views	11.6K subscribers	87
10	10	Can ChatGPT really teach you German?	Herr Antrim	Learn German with Herr Antrim	3 990 views	194K subscribers	139
11	11	ChatGPT and Language Education	Tom Gally	Tom Gally	4 433 views	939 subscribers	132
12	11	ChatGPT and the Future of Language Learning	Tom Gally	Tom Gally	2 955 views	939 subscribers	0
13	11	What do we mean by language in the age of GPT?	Tom Gally	Tom Gally	455 views	939 subscribers	0
14	11	Translating with ChatGPT	Tom Gally	Tom Gally	6 757 views	939 subscribers	0
15	12	How to MAXIMIZE the use of ChatGPT's current functions to learn Chinese in 2023 (The Ultimate Guide)	Shuo shuo Chinese	ShuoshuoChinese 说说中文	20 813 views	171K subscribers	1.1k
16	13	Your Personalized Free Language-Learning Content Guide!	Dustin Schermaul	Dustin Schermaul	229 views	2.06K subscribers	23
17	13	Writing for Fluency | ChatGPT, Journaly or Freestyle?	Dustin Schermaul	Dustin Schermaul	324 views	2.06K subscribers	25
18	13	From Fear to Fluency: Speak with ChatGPT's Help	Dustin Schermaul	Dustin Schermaul	2,805 views	2.06K subscribers	107
19	13	The Future of Text-to-Speech: A Hands-On Review	Dustin Schermaul	Dustin Schermaul	602 views	2.06K subscribers	22
20	13	An Interactive Text Adventure | Learn German with ChatGPT	Dustin Schermaul	Dustin Schermaul	2 281 views	2.06K subscribers	101
21	13	A Storytelling Adventure | Learn French With Chatgpt	Dustin Schermaul	Dustin Schermaul	2 858 views	2.06K subscribers	124
22	13	Can ChatGPT Teach You a Foreign Language?	Dustin Schermaul	Dustin Schermaul	22 691 views	2.06K subscribers	739
23	14	I tried learning Japanese with ChatGPT and here's what happened...JP	Eric Williams	Eric Williams	889 views	2.24K subscribers	38
24	15	Using ChatGPT to Learn Japanese - Translation Practice	Clay (The Japanese Page)	The Japanese Page	1 449 views	22.9K subscribers	50
25	15	Which is better for learning Japanese? ChatGPT 4 or Bing Chat?	Clay (The Japanese Page)	The Japanese Page	405 views	22.9K subscribers	23
26	15	Using ChatGPT 4 to Practice Japanese Translation — Learn Japanese with AI Chatbots	Clay (The Japanese Page)	The Japanese Page	717 views	22.9K subscribers	26
27	16	✅ SPANISH CONVERSATION FOR BEGINNERS, USING CHAT GPT	Leodannis (My Spanish Lesson TV)	My Spanish Lesson TV	212 views	3.7K subscribers	9
28	17	How intelligent is ChatGPT in Spanish? — Intermediate Spanish	Pablo Román (Dreaming Spanish)	Dreaming Spanish	5 573 views	113K subscribers	240
29	18	My (new) Language Study Routine: Spanish Edition MX	Coleen	myuni	399 views	799 subscribers	43
30	19	How to learn French using ChatGPT | A DEMO of its possibilities and limits	Cathy	My Polyglot Life · Cathy Intro	1 627 views	1.62K subscribers	60

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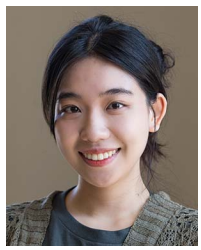

Belle Li received the master's degree in instructional systems technology from Indiana University Bloomington, Bloomington, IN, USA, in 2020.

She is currently a Dean's full scholarship doctoral student studying Learning Design and Technology with Purdue University, West Lafayette, IN. Her research interests include development and integration of instructional methods and technologies, including artificial intelligence, mobile applications, virtual reality, augmented reality, and mixed reality for collaborative, contextual, experiential, and authentic learning experiences in blended and online learning environments. She designed and developed a mobile application, TIC APP, available for download on the App Store.

Curtis J. Bonk received the B.A. degree in accounting from the University of Wisconsin-Whitewater, Whitewater, WI, USA, in 1981, and the M.S. degree in educational psychology and the Ph.D. degree in educational psychology (minor in educational technology) from the University of Wisconsin-Madison, Madison, WI, in 1987 and 1989, respectively.

He is a Professor with the School of Education, Indiana University, Bloomington, IN, USA, where he teaches psychology and technology courses and is adjunct with the School of Informatics. He is a passionate and energetic speaker, award-winning writer, educational psychologist, instructional technologist, and software entrepreneur, and a former CPA and corporate controller. He has given hundreds of keynote talks and is an author/editor of more than 400 publications, including 20 books and 160 journal articles.

Dr. Bonk became a Fellow of AERA in 2022. He was also listed in the top 2% of scientists in the world based on publication citations for his career. He co-hosts the award-winning podcast show Silver Lining for Learning.

Chaoran Wang received the BA degree in teaching Chinese as a second language from Nanjing Normal University, Nanjing, China, in 2013, and the Ph.D. degree in literacy, culture, and language education from Indiana University, Bloomington, IN, USA, in 2021.

She is a Multilingual Writing Specialist and an Assistant Professor of Writing with Colby College, Waterville, ME, USA. Her recent publications have included articles in *Language Teaching* and *Journal of Global Literacies, Technologies, and Emerging Pedagogies* and book chapters in *Research Methods in Language Teaching and Learning* and *Transformative Teaching Around the World.* Her current research interests include technology-enhanced language learning through the intersecting perspectives of language studies, sociocultural theories, and educational technologies.

Dr. Wang is a recipient of the Open Educational Resources Research Fellowship by the Open Education Group and the Doctoral Dissertation Grant by the International Research Foundation for English Language Education.

Xiaojing Kou received the M.A. degree in linguistics from the College of English Language and Literature, Shanghai International Studies University, Shanghai, China, in 1999, and the Ph.D. degree in instructional systems technology from the School of Education, Indiana University, Bloomington, IN, USA, 2011.

Since 2012, she has been the Director of the Center for Language Technology, Indiana University. With her leadership, the center provides technology and instructional support to language teaching instructors through audio and video services, specialized language instructional space, Web hosting of language materials, professional development opportunities, and promotion of world languages programs. She also provides consultation on technology integration in language instructional design and development.

Ms. Kou is a Member of the Advisory Board for the Less Commonly Taught and Indigenous Languages Partnership, a cross-university initiative among the Big Ten Academic Alliance.