# Analyzing Second Language Acquisition in mediating 21st-Century Skills: Understanding the Theoretical Foundations of Digital Language Teaching

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**Abstract:** The educational needs of the modern society in the 21st century has been transformational, more so with the post-pandemic period. *Second language acquisition theory* cites that language is a continuous practice of acquiring details, consuming the information and producing it in a meaningful way. Language acquisition is obtained through subjection to contexts, understanding discourse, and then using language in natural communicative contexts. Despite the revolutionary transformation in academics, the attitude of inquiry, critical thinking, creativity and self-motivated learning serves as foundational blocks for any learning environment. Language plays a crucial role in coping and mediating between the self (as a learner) and the other (the change). Using *second language acquisition theory*, the study seeks to find out among the undergraduate university students, how they acquire the three types of skills as envisaged by the P21 model (partnership for 21st century skills). The primary aim of this study is to understand the effectiveness of digital language teaching and learning in developing 21st century skills among undergraduate students and teachers in Delhi NCR and to identify the most suitable theoretical framework that aligns with the P21 model. The study uses a mixed methodology involving questionnaires among participants from the institutions across Delhi NCR which is a hub for prestigious institutions in India. Through this research, the study seeks to find out the best suitable theory among the three (second language acquisition theory, socio-cultural theory and constructivism theory), that suits the P21 model.

**Keywords:** language acquisition, second language, digital interaction, undergraduate students

## Introduction:

Digital education has seen substantial pedagogical development due to innovations in technology. They combine to create an inclusive discourse about the benefits and problems of digital education, covering everything from the viewpoint of decision-making to the highly grounded experience of skilled language instruction. Teachers can no longer ignore or embrace digital education as a trendy gimmick. In these technologically advanced times, it has become a standard part of education and, as such, it plays a significant role in instructors' careers. The tangible and fruitful knowledge transfers that link digital development tools with the pedagogical requirements and unique characteristics of subjects taught in educational institutions' curricula are a crucial component of the permanent digitalization of education.

The advent of digitalization in education necessitates that students not only gain new knowledge, but also cultivate abilities like imaginative problem-solving, and interpersonal interaction so they

can apply what they have acquired to real-life scenarios. Students benefit from these freshly gained abilities and information as they adjust to a modern culture that is ever changing and highly competitive (Shadiev, Yeh, Dang, & Sintawati, 2022). The P21 model is perhaps the most widely used of these, which are referred to as 21st century skills framework to implement reforms to education (Lin, Bonk, & Reeves, 2020). The US Department of Education, along with businesses like Apple, AOL, Microsoft, Cisco, and SAP, as well as educational institutions like NEA, established the P21 concept to teach 21st century skills. The Partnership for 21st Century Learning is the collective name for this group. First released in 2006, it has undergone several revisions, the most recent of which has been revised in 2015.This model was created to help instructors train students 21st century abilities and to provide a set of competencies that emphasizes those talents. It teaches learning and innovation skills, media and technology skills, and social and job skills through core academic programs. Through a sampling size of 107 university undergraduate students and 33 faculty members from across educational institutions in Delhi NCR, the chapter aimed to determine which of the P21 competencies is most appealing to students as well as instructors. The findings have led to the key answer that communication holds the most important skill in the P21 model both for the teachers and students alike. At the same time, constructivist theory is well relatable to the above P21 skills as stated by the instructors for imparting knowledge in terms of the P21 skills instead of the most popularly held belief of second language acquisition theory aligning with P21 skills.

## Research Objectives

- To assess the effectiveness of digital language learning in promoting 21st-century skills (Learning & Innovation, Digital Literacy, Career & Life Skills) among undergraduate students.

- To identify the most suitable theoretical framework—Second Language Acquisition Theory, Socio-cultural Theory, or Constructivism—that aligns with the P21 skill model in the context of digital language education.

**Review of Literature:** The clarity and brevity of the concept 'the digital' is often challenging to lay out. In German, the term *Digitalisierung* incorporates one interpretation that implies both separate ideas in English: digitization and digitalization. The distinctions are not particularly evident, and they are frequently employed alternately. In broad terms, digitization can be defined as the creation of an electronic representation of material things such as paper records, words, and images, or the transforming of conventional information into digital format. The rise of digitization, furthermore, encompasses the hallmarks of digitalization while also incorporating additional operations and interactions, as well as digital operations in various formats. The analysis now includes the concept of digital transformation. Broadly, digital evolution corresponds to a transformative tool of digitization. Innovation and creative thinking are two critical notions linked with the digital shift. When it comes to the technical interpretation of digitization/digitalization terminologies, this phrase is a prime candidate for distraction. The rapidity with which digital innovations and adaptations occur has had a significant impact on all aspects of civilization. The rapid rate of digital growth and alteration has had a significant impact on all aspects of humanity (Lütge & Merse, 2021).

There have been considerable contrasts and alterations that have emerged when evaluating the launch and the formation of new digital media, apps, and technology among the twenty-first century and fifty years before. People's communication methods have evolved over time. Close interaction with others is no longer the sole method of interaction. Individuals are currently able to participate in both asynchronous and synchronized electronic transmission by using message services, calls via video, and social media discussions. In a comparable manner diversified electronic assets provide people with the ability to utilize a wide range of materials for visually appealing, artistic, and commercial expression. Speech and photos can now be accessible with a single button press or screen swipe. For instance, people may now more easily convey thoughts, messages, or services through posts and videos on YouTube and Instagram that are accessible from everywhere at any point. The way that people engage in their social, cultural, civic, exclusive, and business activities is significantly impacted by this digital transformation. These revolutionary innovations have an impact on the community as a whole, causing people to respond in very different ways depending on how they view digital innovations (Lütge & Merse, 2021).

Many fields have been touched by digital modifications and enhancements, which is why we have chosen these important areas as useful places to start when developing digital andragogy. They are texts, culture, language, and interaction.

1. Language: Availability to technological medium has expanded potential in many ways, especially in the areas of acquiring knowledge, such as viewing YouTube videos for insights into culinary or style, or perusing blogs to get news and inspiration about traveling or by following celebrities on Instagram or TikTok. The conventional method and linguistic abilities like reading and listening are still crucial for interacting with the language used in digital environments, as Dudeny et al. highlighted. When instructors intentionally use technological tools into their classroom instruction, they can spread novel approaches to language exploration and development in methods of learning.

2. Communication: Contemporary digital technologies have influenced the way individuals share and exchange information, work and associate with others in technologically embedded environments. This includes but is not limited to creating a virtual identity, interacting with peers in social platforms, creating and sharing private spaces for getting in touch with friends and family, posting comments on YouTube and X, sharing updates on one's newsfeed to name a few. In short, in today's digital space, learners have several newer alternatives to produce meaning, and this does not involve only using language for speaking and writing but also experimenting with other communication interfaces like visuals, aural and multi-media interfaces.

3. Culture: Digital media unquestionably make it easier to contact Anglophone cultures, which in turn supports multicultural and international learning practices. Think about how digital media can make it easier for students to gain insight into civilizations that are ordinarily located far away. In this "global community", students can stay up to date on present and evolving socio-cultural advancements, such as food and sport trends, youth and anti-racism movements, activism against homophobia and sexism, or political debates and controversies, by using digital platforms like Twitter, Instagram, or news websites. Additionally, as increasing quantities of digital media become engaging and collaborative,

students can build ties with classmates from diverse cultural environment to discuss and share their perspectives on the world. However, students and educators should simultaneously take a more prudent stance: Interactions between cultures can also reinforce biases and preconceptions without educational orientation, and not all cultural knowledge acquired online is always reliable and may need to be critically questioned and evaluated. (Dudeney, Hockly, & Pegrum, 2013, p. 22).

4. Texts: Since texts have long been a staple of English language instruction, the expansion of digital media and the internet has increased the variety of text formats that are suitable for instruction. For instance, the variety of YouTube video categories enables students to articulate themselves creatively or with sincere answers (particularly if instructors embrace the productive side of such texts in addition to dealing with them attentively). Additionally, when writing turns digital, it offers fascinating new perspectives. Learners can immerse themselves in immersive story worlds through augmented or virtual reality, watch stage adaptations of plays by streaming shows from the London Globe Theatre or the New York Broadway, or engage with original interactive narrative. Practically speaking, digital texts can also be used to augment standard coursebooks, which may eventually become obsolete over time (Lutge & Merse, 2021).

To many it is crucial to highlight that these viewpoints and developments - that impact the fundamental substance of the study of English as a philological discipline rather than focusing solely on technology problems (such as how to use a "mobile device"). This echoes a single of the opening quotes gathered above, which states that modern education involves not just teaching kids how to employ technology but also teaching them how to utilize it to learn. The use of the latest technology is therefore only one aspect of digital approaches on English instruction. It has more profound effects on the teaching of languages in terms of how we want to learn and interact with one another, discover methods to express ourselves and our voices through language and other mediums, and interact with the technological and social settings that encircle us. All of the aforementioned impulses pertaining to language, communication, culture, and texts will be emphasized and illustrated. Teachers must obviously traverse increasingly complicated repertoires of choices as a result of the variety of digital activities made accessible in English teaching and learning. It is becoming more and more difficult for teachers to incorporate technological assets into their lessons, provide digital learning opportunities for individual study periods, select appropriate tools and applications, and correlate their goals for education appropriately when incorporating them into digital situations. The three suggestions are offered to overcome this obstacle and lessen the possible sense of being overworked or overburdened.

**Theoretical Framework:** The P21 framework holds the view that students need firm opportunities and avenues to gain skills for a grounded career. This framework was formed to ensure that students are better prepared to face the modern-day working world challenges. The skills endorsed by P21 are regarded significant in achieving success by all entities in the workplace. Contemporary learning space has become much more complicated than what we used to have a decade ago. This has led for students to merge existing core academic skills with comprehensive skills that are more reflective of those intricacies. Learners can transform these competencies by integrating essential academic subjects with cross-disciplinary ideas and participate in tasks that

advance innovation, analytical reasoning, effective communication and teamwork- commonly termed as the 4Cs as identified by P21.

The 21st century skills are: (1) learning and innovation skills (critical thinking and problem solving, creativity and innovation, and communication and collaboration),

(2) digital literacy (information literacy, media literacy, and information and communication technologies (ICT) literacy), and

(3) career and life skills (flexibility and adaptability, initiative and self-direction, social and cross-cultural interaction, productivity and accountability, and leadership and responsibility).

**Methodology:** The research design involves a mixed method approach involving both qualitative and quantitative approaches. This methodology has been mainly used to ensure the objectives of the study are fulfilled that is to gain a holistic understanding of how digital language teaching and learning influence the development of 21st-century skills, and how different educational theories align with this process. In terms of the quantitative method, structured questionnaires were floated to collect data on student and teacher perceptions regarding digital tools and skill development. In terms of qualitative method, a content analysis was conducted after the questionnaire was floated with its varied responses for both students and teachers alike to gain deeper insights into the lived experiences, attitudes, and theoretical preferences of both students and educators. The target population comprised of undergraduate students and language teachers from higher educational institutions in Delhi NCR, a region with a diverse mix of prestigious institutions. A purposive sampling method has been used to select participants from institutions that actively implement digital tools in language education. Institutions have been chosen to ensure diversity in terms of type (public/private), discipline, and language instruction methods. A total of 33 faculty members from the colleges and universities of Delhi NCR were sampled to reflect a range of teaching experiences and familiarity with digital pedagogy. It aligns with the aim of the study to compare theoretical preferences and comprehend how teachers perceive and integrate digital tools in their classrooms. A total of 107 undergraduate students who use digital platforms for classroom learning from the colleges and universities of Delhi NCR gave their consent to answer and get their feedback from the questionnaires that were floated to collect the data. This sample was large enough to study the trends and variations in digital learning habits, preferences and 21$^{st}$ century skill development.

This study employs a mixed-methods research design, combining both quantitative and qualitative approaches. The rationale behind using a mixed design is to gain a holistic understanding of how digital language teaching and learning influence the development of 21st-century skills, and how different educational theories align with this process. The focus here was on the rich, contextual data rather than the statistical generalization. Quantitative methods have been used to collect measurable data on student and teacher perceptions regarding digital tools and skill development through structured questionnaires. Qualitative methods via content analysis provided a deeper insight into the lived experiences, attitudes, and theoretical preferences of both students and educators. The data collection tools included structured questionnaires for students and teachers designed to collect data on use and frequency of digital tools, perceived development of 21$^{st}$ century skills, teaching-learning strategies and theoretical alignment with learning preferences.

These sample sizes supported meaningful content analysis and allowed for credible comparative study between the two categories of students and faculty. The statements in the questionnaire were carefully carved out to indicate the extent to which a respondent would agree or disagree on a 5-point Likert scale that showed as:

1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree

**Data Analysis:** Under Digital Language Learning and 21st century skills, the responses were recorded for 109 students across the universities and colleges in Delhi NCR region. In terms of P21 skills, the majority of the students opted for flexibility and adaptability (20.8%), followed by digital literacy(20.3), creativity (20.1%), social and cross-cultural skills (19.6%) and critical thinking(19.1%). In terms of theoretical preference, majority of students opined that socio-cultural theory(48.1%) holds the best when it comes to identifying the most suitable theoretical framework that aligned with the P21 skill model in the context of digital language education. While a total of 27.8% opined for constructivist theory, 24.1% of students held that second language acquisition theory was the most suitable theoretical framework that aligned with the P21 skill model meeting the needs. Similarly, data was collected from 33 teachers across the universities and colleges in Delhi NCR region. For P21 skills promotion, 16.4% of teachers opined for creativity and technological literacy while, 13.7% opined for collaboration and communication and 12.7% opined for critical thinking, 11.8% selected initiative and self-direction making it the least attributed P21 skill. When it came to selecting the most preferred theory that aligned with the P21 skill model, 51.5% teachers opined for constructivist theory, 30.3% selected socio-cultural theory while 18.2% selected second language acquisition theory. This shows how the theory of second language acquisition have been outrightly rejected by students and teachers alike when it comes to P21 learning skills. The data offers a conclusive view that digital language learning benefits not only in the improvement of core 21$^{st}$ century skills like adaptability, creativity, and digital literacy but also provides a pedagogical shift in learning towards theories that offer collaboration, experiential learning, and cultural engagement. It further reinforces the requirement of a reconceived theoretical foundation in language education-one that surpasses the traditional acquisition model and embraces multi-faceted, digitally driven teaching-learning environment of today.

**Discussion:** Digital learning is the application of technology to the process of learning and teaching (Carrier, 2017, p. 1). As defined by the Alliance for Excellent Education in 2016, it states that *any instructional practice that effectively uses technology to strengthen a student's learning experience.* This is in direct relation to the responses that were collected from the 109 students' data that were recorded, 78% were female students and 21.1% were male students. The highest students that responded came from the second year and stood at 69.7%. In the category of *Digital Language Learning Experience*, when they were asked how often were they engaged in digital language learning platforms,40.4% respondents replied as occasionally, wherein 24.8% responded daily, 17.4% weekly and 15.6% rarely. The next question was which tools they had used the most for language learning, majority of them claimed it was from YouTube Tutorials (73.4%), google classroom (45.9%), language learning apps (37.6%), zoom/google meet (31.2%) and moodle stood at 4.6%. Lastly, when the respondents were asked how effective they found digital methods in enhancing language learning, 38.5% very effective, 37.6% as effective and 13.8% as most

effective. The term digital learning here embraces all the functions of technology that is used in language education. It also provides the umbrella term to refer to the tools, techniques, methodologies, and activities that have been borrowed by researchers and practitioners of previous disciplines like computer-assisted language learning (CALL), technology-enhances language learning (TELL), computer-mediated communication (CMC), and various historical subdivisions of digital learning. Recent innovations in digital technologies have opened up newer opportunities for language learning and communicative competence development within and beyond the classroom setting (Asratie, Wale, & Aylet, 2023).

When it came to the category of *21st century skills (P21 model);* when the students were asked to rate each of the skills from critical thinking, creativity, digital literacy, flexibility and adaptability to social and cross-cultural skills, flexibility and adaptability received the highest rating with 4.03 followed by digital literacy with 3.93, creativity followed next with 3.89, social and cross-cultural skills with 3.80 and the last one with critical thinking with 3.69. The reason here flexibility and adaptability show the highest responses is due to the fact that the advantages for students include being able to access authentic language learning inputs at any time and being able to choose a program of learning in one's convenient time (Carrier, Damerow, & Bailey 2017,p. 2). Social and cross-cultural skills also garnered the second highest response along with creativity for the reason that it allowed students to interact with learning colleagues and peers in all parts of the world at any time, to have the control to constantly to monitor one's learning success, strengths and weaknesses. To the question regarding if the students felt more confident in expressing ideas when they were exposed to digital platforms a significant percentage of 52.3% responded as yes, and 46.8% responded as somewhat. On being asked if digital tools helped them to prepare for real world situations like facing an interview, around 34.9% agreed, 18.3% strongly agreed and 44% remained neutral.

The category of theoretical perspectives remains highly important as it measured the students understanding of the theoretical knowledge in relation their learning process. While the majority of the students, i.e., 48.1%, attributed socio-cultural theory as the learning approach which they relate it most to their learning process,27.8% attributed constructivism and 24.1% attributed it to second language acquisition theory. Learning to read in another language requires readers to both bring their previously acquired knowledge to a topic and at the same time develop their own understanding of the language itself (Gibbons, 1991).

On being asked the reason behind selecting their preferred theory in relation to their learning process, the respondents with *socio-cultural theory* as their preferred choice had various answers. While one said it made learning easy, another said to get a better understanding. Other answers for selection of socio-cultural theory included more relevant theory, theory that proved to be effective and preferred because it included cognitive benefits, it allowed to actively build their own understanding through experience, reflection, and problem-solving. One of the respondents replied in the following way, "As someone who has ventured into both the humanities and sciences, I have found my own experiences and reflections to be the best possible way for problem-solving that is both contextual and experiential". Another respondent believed that sociocultural theory, developed by Lev Vygotsky, emphasized the role of social interactions, culture, and language in shaping human development and learning. Some key aspects that the respondent highlighted include: a. social constructivism: Knowledge is constructed through social interactions. b. cultural

influence: Culture plays a significant role in shaping individual development. c. language: Language is a crucial tool for communication and learning.

Sociocultural theory as another respondent answered is valuable in understanding human behavior, learning, and development, particularly in educational and social contexts. “I think real world experience and collective learning is better, I personally believe it to be the fastest way to learn and understand a language and also the nuances that come with a certain area or locality. As it emphasizes the crucial role of social interaction and cultural context, socio - cultural theory is most relative as I learnt languages easily and properly with understanding the culture of people and being in that social environment. This theory is more like gives the proper learning than the other kind of learning, it gave me wider knowledge about things, it helped me in discovering and learning about the culture of the region of whose language I am learning. Learning a language along with its culture makes it easier to grasp the meaning and tone of words”.

When it came to the respondents’ choice for the selection of *constructivist theory*, these were few of the answers that were being collected: For constructivism, one of the respondents claimed in this way, “I relate most to Constructivism because it focuses on learning through experience and building on prior knowledge”. Another responded in the following way: “I prefer it because it encourages active thinking, personal understanding, and real-world application—making learning more meaningful and lasting, It allows to actively build our own understanding through experience, reflection, and problem-solving”, “I learn best through hands on learning and experimenting, Constructivism is all about building knowledge based on experiences, connecting new info to what’s already known, and actively constructing meaning—which is kind of how I work too,” “I generate responses by connecting patterns from tons of information and adjusting based on feedback, like how learners constantly refine their understanding”, “The literal criticism that one gets on the basis of what they do shapes better outcomes, Constructivism emphasizes that learners actively construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences”, “This aligns with how I learn best—by engaging with content, connecting it to what I already know, asking questions, and applying it in real contexts rather than just memorizing facts”, “I relate most to Constructivism because it focuses on learning through experience and building on prior knowledge”, “I prefer it because it encourages active thinking, personal understanding, and real-world application—making learning more meaningful and lasting”. "I prefer Constructivism because it emphasizes active learning, where I build my understanding through experience and reflection. It allows me to connect new knowledge with my existing knowledge, making learning more meaningful and long-lasting."

With the choice of *second language acquisition theory*, we had the following answers from the respondents: “I am an experiential and experimental learner and most of my real learning happens in isolation, often acquiring feedback after I’m done with an assignment for example. I observe first, understand as much as i can either through active recall or hands-on short term practice, and then try to replicate and incorporate the knowledge into my processes.”, “most of the time I am also learning as I go, As someone who has ventured into both the humanities and sciences, I have found my own experiences and reflections to be the best possible way for problem-solving that is both contextual and experiential,” “As I am learning French and Japanese as a foreign language, and I keep working on my English skills, I find the ideas behind this theory very insightful for my learning process, proved to be effective, made learning easier”.

From the 33 respondents that include faculty members from various disciplines across universities and colleges in Delhi NCR, 69.7% were female faculty members and 30.3% were male faculty members. Majority of the teachers had ten years of teaching experience and more while another 9.1% had 2.5 years and more of teaching experience. Around 51.5% had received training in digital pedagogy or language teaching while 48.5% received no training in digital pedagogy.

On the category of digital language teaching experience, 90.9% responded as using google classroom as the most used platform for language teaching, 60.6% responded using Microsoft teams, 42.4% used Kahoot/Quizlet, 30.3% used Moodle, others included blackboard, google forms, Quiziz, Mentimeter, zoom. For the respondents 51.5% believed that these digital tools have been effective for engaging students in their classroom teaching. While 60.6% faculty members believed that there was some improvement in students' language abilities through these digital tools, 15.2% responded there were significant improvement, while another 15.2% responded that there was no improvement. Digital texts provide newer opportunities for teaching reading skills as Al-Yaqout and Nikolajeva points out (Al-Yaqout and Nikolajeva 2015; Manresa and Real 2015). Multimedia features allows user interactions and vocabulary support that promotes independent reading, foster reading motivation and help develop reading strategies (Brunsmeier and Kolb 2017, 2018)

On the category of *P21 skills development*, the question was being asked to the teachers to what extent digital classes promote critical thinking, creativity, communication, collaboration, information literacy and technology literacy, 42.4% teachers were of the view that digital classes promoted critical thinking to an extent, 54.5% responded that creativity was promoted to an extent, 45.5% responded for communication, 45.5% responded for collaboration, 51.5% for information literacy, 54.5% for technological literacy and 39.4% for initiative and self-direction. So, in short, the teachers were of the view that creativity and technological literacy were promoted the highest by exposure to these digital classes.

On the integration of real-life exercises in their classroom teachings, 60.6% teachers responded as often, 27.3% as sometimes, and 9.1% as rarely. When it came to the challenges faced in implementing the 21st century skills, the teachers responded in varied ways. They are as follows: "Universities are lacking in providing ICT labs where students can research and get acquaintance of digital learning. Even if teachers helping them in digital learning, students do not have resources. Sometimes there is network connectivity issues. Many of the digital tools are chargeable and not free, hence affordability is the main challenge". The teachers also cited lack of skill base education, lack of students' engagement, lack of clarity for future, unavailability of digital facilities in the university campus like absence of proper Wi-Fi, absence of digital equipment pose as major challenges. Other challenges include maintaining focus for a long time, lack of uniformity in participation by the students, lack of knowledge and proper information regarding the technologies and their features, limited access to updated technology and digital tools, absence of hands-on training program, plagiarism which impacts creativity and critical thinking, unequal access to digital tools and internet connectivity thus creating a digital divide among students were the responses that the teachers cited.

A very important challenge was language barriers particularly in multilingual or ESL settings where it becomes difficult to engage students in communication and critical thinking. Online platforms make it infinitely harder for students to keep their attention focus for a longer period of time. Additionally, the rapid pace and evolution of educational technology demands continuous adaptation and professional development that becomes a hurdle at times. Most of the time the students use them as aids and not as tools. Addressing the needs of the students becomes difficult due to diversity, and executing different pedagogy. Lack of proper training among teachers is huge challenge as one of the teachers pointed out. "Teachers need to be trained enough in these tools available for teaching. Majority of the teachers have either less or no knowledge about them which turns out to be a disadvantage to them".

As cited above, digital learning has definitely changed the role of the teacher but despite the fears of many teachers, it does not entail the requirement of the teacher to become technologically expert. However, it does require the teacher to engage with the affordance and course design components of digital learning. With this affordance the teacher can enhance the learning component of the program that the students follow. At the same time, digital learning ensures that the teacher is comfortable with moving towards the role of a facilitator and guide rather than the knower of all things – *the sage on the stage* (Carrier & Nye, 2017, p.208)

The next category on *theoretical perspectives* for the teachers totally aligned with what the students also responded even though the questionnaires were floated differently for both the set of respondents. On being asked which theory best aligns with the digital language teaching, 51.5% respondents answered constructivism, while 30.3% responded as socio-cultural theory and 18.2% responded as second language acquisition. The reasons being cited for responding *constructivist theory* have been varied and many, few of them are: "Constructivism aligns best with digital language teaching because it promotes learning through real-world, meaningful tasks. Example in environmental law students use an online platform to analyze a short video or article about a recent oil spill. They then collaborate in groups to write a policy response in the target language, using key environmental law terms. This task helps them build language skills while engaging with real legal issues—reflecting constructivist learning. Learners actively build their knowledge with interaction and experience". Another response was, "Constructivism posits that learners construct their own understanding and knowledge of the world through experiences and reflection. Learners actively construct knowledge through experience". For *socio-cultural theory*, the response garnered was, "Sociocultural Theory fits well with digital language teaching. It emphasizes social interaction and technology, which are key in online learning. For example, in online discussions and virtual classrooms students interact, share ideas, and get feedback. Digital tools like video conferencing and interactive exercises also help language learning. This creates a collaborative environment that promotes language skills and engagement. If used properly, students can work constructively on topics they want to learn. It also helps in the study of techniques for understanding social practices. The respondents also justified their answer that a student's interest largely depends on his socio-cultural background, his peer group and his secondary school level education. For those respondents who cited *second language acquisition (SLA) theory*, the response came as in the following way: Second Language Acquisition (SLA) theory as the foundation for digital language teaching is justified because many digital tools are explicitly designed to support the natural processes of language learning outlined in SLA research. For example, applications like Duolingo provide learners with comprehensible input through reading

and listening tasks. Through learning by doing learners acquire language skills via authentic tasks like role plays, discussions, writing.

As is evident from the data collected from the teachers and learners alike, there is a huge transformation in the way we communicate because of the internet and the mobile devices in our rapidly changing world today. And the future can only be predicted and not ascertained. The results also indicate that the answers revolve around the concept of digital literacies(Dudeney, Hockly, & Pegrum, 2013) and digital competence (Vuorikari, Punie, Carretero, & Van den Brande, 2016). Researchers and educators opine that "digital learning is here to stay"(Carrier, 2017). Various strategies have already been adopted to conceptualise digital literacies and digital competence so that learners can familarise with the skills required in our digitized world. In this context, a new framework has emerged that unites digital competence with global competence which is commonly termed as DigCompGlobal. By contextualising theory to practice, this framework has helped to address how digital competence can be developed in the context of global education. Digital learning refers to the implementation of technology to the learning and teaching process. In reality, digital learning embraces all uses of technology and seeks to absorb its additional benefits. The fact that learners and teachers must be prepared with digital competence to participate and benefit from digital opportunities to mitigate known problems that confronts digital learning and education (Vuorikari et al. 2016, p. 3). This at the same turn raises the question as to what digital competence encompasses that goes beyond the usage of digital technologies.

Digital literacy was devised by Dudeney, Hockly and Pegrum in 2013 and includes four overlapping dimensions of language, information, connections and re-design.Competence is usually applied both in its singularity and in plurality. This implies that digital media competence/s have sub-competences or additional competences that can be integrated under the umbrella term can overlap and are interdependent. Digital literacies include the individual and the social skills required to effectively interpret, manage, share and create meaning in the ever increasing competition of digital communication channels (Dudeney, Hockly & Pegrum, 2013, p.3). Within this context, there is a very important argument that language and literacy are tightly intertwined, partly because the very concept of literacy as its base in language and also because all literacies are linked with the communication of meaning. At the same time, we need to be aware that the terminology digital literacy's potential lies in its comprehensiveness and openness leading to accumulation of additional literacies to be included as digital technologies that are prone to change over time. Digicomp illustrates five competence areas- : information and media literacy (e.g. articulating information needs, retrieving digital content, judging the relevance of sources, organising digital data);digital communication and collaboration (e.g. interacting and collaborating through digital technologies, being aware of cultural and generational diversity, participating in society through participatory citizenship, managing one's own identity);digital content creation (e.g. creating and editing digital content, improving content of an existing body of knowledge, applying copyright); responsible use or safety (e.g. protecting devices, personal data, privacy, being aware of technologies' environmental impact);digital problem solving (e.g. identifying needs and problems, keeping up-to-date with the digital evolution).
This lead to the conclusion that these five areas include competences that need to be acquired to maximize the potential given by digital content and technology while protecting an individual's own identity and navigating safely.

It becomes a really very crucial question to reflect then with which skills learners require to handle digital content and become digitally literate while concerning with global issues that promotes a change in learner's attitude and behaviour (Redecker, 2017, p. 23; Vuorikari, Punie, Carretero, & Van den Brande, 2016, pp. 8–9). The area of competence is termed as 'digital content literacy' because the term refers to all types of content that has the potential to be used and analysed for global learning including texts, videos, tweets/short interviews which are embedded with factual information. While digital content refers to those content that sets its presence in the form of digital data that are encoded in a machine-readable format and can be produced, viewed, distributed, modified and stored using systems and digital technologies, example the internet (Vuorikari et.al, 2016, p.10).

Where global issues are concerned inside the classroom, digital content comprises a very essential feature of any lesson since it provides learners with the required language and content input. The second area of competence is 'digital engagement'. Digital engagement encompasses communication, collaboration and participation. This component becomes all the more important because in the present day scenario of global education, learners not only communicate and collaborate but also actively acquire new knowledge to become change agents (Cates, 2013). The third area of competence, i.e, *re-designing* caters to the learners' capacities to create and design digital content all by themselves through the application of various digital tools to create new meanings through re-design. This component of re-design which also finds its presence in the concept of digital literacies ( Dudeney et al, 2013, p.367) was added to DigiComp to represent the area of *digital content creation* of the DigiComp framework. At the same time, this feature also explicitly includes significant features such as creating new meanings through sampling and collaborating pre-existing texts. The fourth area of competence *responsible use* refers to various safety issues ranging from safeguarding learners' self-health to environmental threats such as preserving the environment and creating awareness of the impact of digital technologies and their usage upon the environment (Vuorikari et.al; 2016, p.9). The context of global education also leads us to re-consider our global resources which is significant for it affirms our faith in reflecting the avoidance of unnecessary usage of resources. The primary idea behind this is as learners undertake digital learning projects, the prime importance must be centred around the goals of actual learning and its content. Digital technology must be treated as an aid that supports the process of learning and not an end in itself. In case the digital technology supports the subject matter or the process of learning are not evident, digital technology can be avoided and therefore learning can take place without the application of digital media in the everyday discourse of the learning process. In the arena of global education system where the usage of tablets and application of digital devices provide for the foundation of classroom learning the environmental cost of equipping each and every classroom all over the world with digital technology becomes not only financially expensive but also impact its creation, distribution, application, renewal, recycling and disposal become heavily detrimental to the global environment.

The production and usage of digital technologies account for 2-2.5% of global carbon emissions (Dudeney et.al, 2013, p.41) Therefore, the usage of sustainable digital technologies to develop digital and global competence is the need of the hour. The fifth area of competence is the digital problem solving that includes the technical aspect. It called for learners to solve technical problems and shift their knowledge to newer situations. This seeks to address problems being solved in terms of content at the same time focussing on global issues from varied perspectives. Thus, digital

problem solving becomes an essential requisite for an effective application of digital technologies and relevant for global education as a whole. Lastly, the sixth area of competence is the *reflexive and critical thinking* that compares and critically evaluates the credibility and reliability of information and its shared sources. This ensures that the sixth component is expanded to include a different reflective and critical element essential for coping with global issues. This is also a reflection of Volkmann's concept of *critical reflexive* media competence. It includes the ability to identify unreliable tendencies in media representations and deal with media more consciously (Volkmann 2010, p. 220). In certain contexts, concerned with global issues there are representations that differ depending on the perspective of a text's designer. It is at this juncture, that this critical reflexive component becomes vital. It then becomes highly pertinent for learners to critically reflect upon an issue first by taking into consideration various perspectives during the learning process itself since global competence requires an active component which urges an active component which urges learners to act for collective well-being. As is cited by Volkmann:

" such as while forming their own opinion and making plans for action, as well as reflecting upon their actions and their effects afterwards".

Appropriate education and the development of respective competencies becomes significant at this critical juncture that needs to be integrated in all subjects. English commonly used as the language of digital technology and the world wide web, needs to contribute to the shared goal of enabling students to access, evaluate and participate in these new forms of communication, information and entertainment. A contributing factor is that any language cannot be taught or learnt without citing to the cultures in which the language is spoken (Kramsch, 1993).

In English language teaching, Byram's seminal text about intercultural communicative competence has highly anchored cultural learning. " "Yet, in view of the way in which digital media have changed and extended social and economic interaction, it is worthwhile considering in how far these changes also demand a change in the conceptualization and the practice of developing digital cultural competences. Digitalization offers access to different cultures and lifestyles and makes insights to the ways others live available with a mouse click or typing in respective key terms in search bars. Students may encounter forms of otherness far beyond what is included in textbooks and teaching material, which underlines the importance of a cultural competence orientation." (Byram, 1997).

Stuart Hall in 1996 laid that "modern societies by definition societies of constant, rapid and permanent change. Through technological and digital advancements, societies and cultures can — less than ever — be seen as monolithic and static constructs." (Hall 1996, p.599).
With the accessibility to any kind of content from across the world, users of media channels have the freedom to upload their own content and therefore contribute to and participate in the discourses prevalent in the digital world. As they engage actively in such public discourses, they contribute to an expansion of cultural texts provided in the public sphere. The digital is realised as a space of cultural practice in which young people exercise culture as a form of social practice (Blell & Doff 2014, p.80). It is through this social practice they express their identity through a self-pronounced consumption and production of cultural identity which is not bound to any affiliation to any specific local community but affirms itself to a larger impersonal group of like-minded people. Through these virtual spaces, they create digital platforms of encounter. Bruns

labels these young people as 'produsers' because these individuals create digital spaces to a large extent based on producing content all by themselves (Bruns, 2008). They productively contribute to the digital web of information and social networks by creating and re-creating – 'produse' – their own cultural spaces.

As Hall rightly informs,

"The constant availability of information and (digital) places of belonging as well as participating in such specific areas of digital and social media led to a continuous "production" of identity, "which is never complete, always in process, and always constituted within, not outside, representation" (Hall 1990, p. 222). One could even go as far as suggesting that the flow of information and trends from around the world which are readily and immediately available allows for seeing cultural identities as performance. The inevitable and constant participation in these ubiquitous discourses allows users to express themselves simultaneously to such changes, to immediately react to these in terms of identity formation, and position themselves in relation to global cultures. However, this does not necessarily lead to unstable identities that swerve in tune with new trends or to a denial of a certain core of identity. Yet, as especially young people increasingly construct cultural identities through digital practices, e.g., via social media accounts, they face the challenge of balancing stable convictions and remaining flexible. After all, culture is no longer limited to one's immediate surroundings, but becomes a lived experience beyond local borders." (Lutge & Thorsten, 2021, p. 104)

**Conclusion:** Digital learning and teaching have changed the role of the teacher tremendously. The findings do lead to the conclusion that the students and the teachers both consider digital literacy or information literacy as the most effective 21 century skill that is being promoted through digital language learning and teaching equally. Flexibility and creativity were other 21st century skills that both students and teachers supported for. Students were also of the view that digital platforms imbibed in them the confidence to speak to be vocal about classroom teachings. In fact, digital learning put students in control of their own learning skills. The most popularly sought after digital learning platform was YouTube tutorials and that digital learning happened almost daily or occasionally for majority of them. The teachers too believed that digital language teaching helped students in being creative and information literate with google classroom as the most sought-after platform for the teachers. It is evident from the above data that constructivist theory and socio-cultural theory was accepted by both teachers and students alike as the most suitable theoretical framework that aligns with the P21 skill model in the context of digital language education. The entire theory of second language acquisition theory gets rejected in the discourse of contemporary environment of digital language teaching and learning skills as the study finds out.

The findings also suggest that students value the freedom and personalization which digital learning platforms prioritize, particularly the ability to access resources and organize their learning at their convenience. The preference for socio-cultural theory underscores the students' realization of the significance and utility of social interaction, cultural immersion, and collaborative environments in learning. Many students also held that learning was progressive when they could engage with peers, understand different cultural contexts, and participate in interactive digital spaces. Constructivist learning, another favoured theory that emphasized knowledge-building through active participation and reflection, also resonated with students who preferred experiential

and hands-on learning. In contrast, the SLA theory—which traditionally emphasizes language input, repetition, and structured exposure—was less favoured by both students and teachers alike in digitally mediated environments. Teaching members too recognized the capacity of digital tools in enhancing student's creativity and to improve their ability to use technology effectively in academic settings. However, teachers also reflected upon the challenges, such as limited access to ICT infrastructure, digital literacy gaps, and unequal participation among students. These results indicated a strong preference for learner-centric pedagogies that focussed more on meaning-making, contextual learning, and real-world application. Many teachers also opined that constructivism allowed students to actively build knowledge through authentic tasks, such as analysing case studies, engaging in group discussions, and applying learned concepts to practical problems. Socio-cultural theory was also valued for its emphasis on interaction, feedback, and collaborative learning environments which got further enhanced through digitally enabled tools like video conferencing, discussion boards, and peer-to-peer collaboration. In short, the data highlighted a transformative shift in both student and teacher perspectives toward more interactive and participatory approaches to learning. While historically central to language education, the second language acquisition theory was perceived to be less aligned with the goals and methods of 21st-century digital pedagogy. Instead, both constructivist and socio-cultural theories were identified as more pertinent to the demands of contemporary education, particularly in advancing the key competencies outlined in the P21 framework.

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