Chapter 2

Beyond known and unknown: Is language learning a set of habits?

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Abstract

Linguists and psychologists disagree on how important habit formation is in language learning. The notion of habit, which makes sense in the behaviorist tradition, is formed through repeated association between certain stimuli and responses, and language learning involves a kind of conditioning process. In contrast, cognitivists consider language learning as a cognitive process linked to understanding and have severely criticized behaviorists for ignoring the communicative and semantic aspects of language. Since the 1960s, when cognitivism flourished, the notion of habit has been treated as the ugly duckling shunned by its mother in the field of language acquisition. Fortunately, recent psychological research on habit provides cues that language learning is a set of habits. This article challenges the idea that language learning strategies and learning styles have a universal and ultimate influence on learners' language learning, arguing that they are in fact a reflection of habit formation. In this context, the results of research in psychology on language learning strategies, learning styles and habituation were reviewed and the processes of habit formation in the language learning process were discussed.

1. Introduction

Educational technologies used to enhance language instruction has undergone many evolutions since 1893, in which the commercial recordings of Thomas Edison's phonograph were first used for teaching English and Spanish as a foreign language (Tanır, 2022). Although the phonograph was used both by educators in traditional classroom settings and by its individual users at home to learn a foreign language, it was difficult to ascertain its effects on foreign language teaching and learning due to the lack of the related research (Tanır, 2022; Roby, 2004; Peterson, 1974; Leon, 1962).

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However, it is an undeniable fact that the phonograph has created the concept of distance education (DE). Thanks to the combination of internet and computer technology that emerged in the following years, this local-based application has come online and has gained the dimension of universality. This has paved the way for many scholars and educators to explore the potential effects of online distance education on learners' competencies in the target language. For this purpose, they designed and implemented various online learning modes (e.g., synchronous, asynchronous, bichronous and hybrid modes), which were regulated and monitored within a well-situated program. While teaching and learning activities continue to take place in these online learning environments, educational institutions are the primary learning environments worldwide and learners continue to interact with each other in person, so it does not mean that such environments have been completely abandoned. By 2020, for the first time in world history, a pandemic called COVID-19 threatened all humanity, educational institutions were unexpectedly suspended, and quarantine processes started around the world. In other words, face-to-face (F2F) education, which has been continuing uninterruptedly since the existence of humanity, has temporarily ended for the first time. Indeed, COVID-19 constituted the first considerable effort and genuine attempt to answer the question of how effective the current DE applications, which have been designing and developing for nearly 130 years, were for all academic disciplines. Consequently, COVID-19 has provided a delayed milestone in raising awareness of better understanding the current presence of DE and its future resuscitation.

The issue of what the mandatory transition from F2F to DE means for learners and instructors, and so, what it means to learn and teach in the shadow of the COVID-19 pandemic, has become a common object of research for many scholars from almost all academic disciplines for three years. During the pandemic, many scholars began to conduct an increasing amount of research to explore the status quo of foreign language learning in various online modes in the context of DE. However, research data were obtained from self-reported questionnaires or one-time data collection due to the pandemic preventing the use of multiple sources of data collection tools (Nugroho et al., 2021). The results presented a pessimistic picture that COVID-19 negatively affected the sustainability of the FLL process (Byrnes et al., 2020; Winters & Patel, 2021), low motivated learners did not participate in online lessons (Aucejo et al., 2020; Onyema et al., 2020; Kohnke & Jarvis, 2021), all learners experienced moderately high stress and anxiety both mentally and psychologically (MacIntyre et al., 2020; Ardan et al., 2020), there were technical glitches in accessing online lessons (Mishra

et al., 2020), and instructors suffered from burnout syndrome (McMurtrie, 2020; Woods et al., 2020). In addition, some researchers (El Refae et al., 2021; Berga et al., 2021) reported that students were not as successful in online courses during COVID-19 as they were in F2F courses. This may be because the success of online learning is not only related to well-designed course content, but also to students' ability to adapt their learning habits to the needs of DE.

Differences between generations and learning contexts require distinctive expectations, experiences, readiness levels, knowledge, and perceptions of the technology in which language learners have grown up. According to some researchers (e.g., Garner-O'Neale & Harrison, 2013; Molnár et al., 2020), this was related to the fact that learners prefer to use different learning strategies and styles while learning a foreign language on digital platforms. However, almost all researchers have stand away the concept of habit, and this trend has continued to increase steadily since the emergence of cognitivism. Cognitivists (e.g., Chomsky, 1964, 2003, 2006, 2012; McNeill, 1966) challenged the behaviorist view (e.g., Skinner, 1957; Lado, 1964; Ross, 1976) that language learning is a process of habit formation or conditioning and argued that it is a cognitive process based on understanding. According to Brooks (1968), behaviorist approach of language learning was vulnerable because of the ignorance of meaning and communicative aspect of language. Cognitivists filled this gap with the idea that the unobservable behavioral responses of language learners in various contexts are controlled by a cognitive mechanism (Bever, 1970). They used the concepts of "strategy" and "style" in language learning to explain these cognitive mechanisms. Recently, however, a growing body of research results, particularly in neuroscience research, has occupied the literature suggesting that the concepts of strategy and style are nothing more than a myth. This is because these concepts vary with each new method and learning context and new ones are emerging every day. Surveys and questionnaires that are based on learners' judgments and are assessed at specific time intervals, are used to explore language learning strategies (LLSs) and learning styles of learners (Truong, 2016). These tools have been criticized on the grounds that they may not accurately reflect learners' actual perceptions or may unintentionally encourage them to comply with researchers' expectations (Moser et al., 2021). Fortunately, new research in psychology provides promising evidence for the concept of habit. Moreover, the latent existence of habit, which has been neglected in foreign language learning for many years and ignored by researchers, seems to be re-emerging.

This article challenges the idea that style and strategy have a universal and ultimate influence on students' foreign language learning. Besides supporting the behaviorists' claim that language learning is a habit formation process or a kind of conditioning, the article argues that learning habit is much more than repeated associations between some stimuli and some responses. Firstly, the research results that reveal the uncertainties about the concepts of strategy and style are emphasized. Second, research on the concept and formation of habituation from the perspective of the field of psychology is briefly reviewed. Third, it discusses evidence on habit formation that has been hidden in research on how online environments affect learners' language learning processes before and during COVID-19. Finally, the principles of how technology integration in foreign language teaching involves a habit formation process and how this process takes place are introduced and discussed.

2. Strategy and Style in Foreign Language Learning as a Myth

The FLL process is as complex as it is difficult (Özyurt & Özyurt, 2015). Many scholars have introduced a number of learning terms to describe this complexity from the perspective of learners. Of these terms, strategy and style are the concepts that most frequently occupy the literature, but there is no clear demarcation between them (Urh & Jereb, 2014). The emergence of these terms may be traced to developments in philosophy and psychology. For example, cognitivism, which emerged in reaction to behaviorism, has led foreign language researchers to explore how learners mentally learn a language. In particular, the question of how good learners learn a foreign language (Wiliams & Burden, 1997; Hismanoğlu, 2000; Çelikkaya & Balkaya, 2020) has led researchers to pay great attention to the concept of language learning strategies (LLS) for more than 60 years. As a result of the fact that the amount of information in a language varies according to individual characteristics (Lim et al., 2021), the number of learning strategies known and regularly used today exceeds one hundred (Lee, 2010), and efforts to define, explain and classify them are still ongoing (Pradhan & Das, 2021; Tran & Tran, 2021). The concept of learning strategy was most recently defined by Griffiths (2018, p. 88) as "the actions chosen by learners for language learning". However, it is unclear how learners choose these strategies while learning a language or how they are cognitively formed in the mind. On the other hand, the Strategy Inventory for Language Learning (SILL), a Likert-scale self-scoring questionnaire developed by Oxford (1990), is considered the most comprehensive and widely used strategy assessment tool (Bruen, 2020). Despite more than half

a century of work on the application of LLSs, inconsistency in the concepts and definitions of LLSs persists (Dörnyei & Skehan, 2003; Esmaeil Nejad et al., 2022; Balkaya & Akpınar-Dellal, 2022). This is because LLSs focus on identification, transferability across contexts and individuals, and the temporal and imprecise nature of classifications (Pawlak, 2021; Ellis, 1986; Stevick, 1990; Rees-Miller, 1993). For this reason, language learning strategies have been severely criticized by some researchers (e.g., Dörnyei, 2005; Dörnyei & Skehan, 2003). Since some well-executed learning procedures may take place below the threshold of consciousness, controversy persists about the extent to which strategy use is conscious, and it has been argued that the concept of strategy should be abandoned and replaced by the concept of self-regulation (e.g., Dörnyei & Skehan, 2003; Dörnyei, 2005; Dörnyei & Ryan, 2015). Therefore, learning a language may be closely related to the process by which learners develop behaviors and manage their emotions in response to the stimuli they encounter in learning contexts.

Similarly, the concept of learning style has no clear definition in the literature and is constantly debated in the field of education and pedagogy (Hu et al., 2021). However, Keefe's (1979, p. 2) definition of learning style as "a combination of characteristic cognitive, affective, and physiological factors that serve as relatively stable indicators of how the learner perceives, interacts with, and responds to the learning environment" seems to be more acceptable. Therefore, although individuals have some strong style preferences and tendencies, learning styles are not fixed forms of behavior and styles can be expanded and modified based on different situations and tasks (Reid 1987; Zhou, 2011; Balkaya & Çelikkaya, 2022). Many learning style models have been developed, but they are based on personality traits in a general learning context, not only in the foreign language learning domain. The Visual, Auditory and Kinesthetic model (VAK), first proposed by Dunn and Dunn (1978), is the most widely researched and well-known 30-question questionnaire (Lethaby & Mayne, 2018). In addition to identifying VAK preferences, the questionnaire included students' preferred time of day to study, dietary requirements, and 18 other categories that teachers could test (Dunn & Dunn, 1978). For this reason, the literature shows research using learning style models under the heading of learning habits. Far from definitions in the context of social and personality psychology, this concept refers to a learner's tendency to focus continuously on acquiring knowledge through systematic routines (Khurshid et al., 2012) and effective study strategies and techniques in time management, among other resources to achieve academic success (Credé & Kuncel, 2008). However, the concept of habit is very different from the one addressed in these studies and causes

conceptual confusion in the foreign language literature. Habit, which is the most important argument of the behaviorist tradition, refers to a response to environmental stimuli. On the other hand, research has shown in various ways that students do not benefit from their preferred style, that teachers and students have different ideas about which learning styles work for them, and that we have little insight into how much we learn from various methods (Dimastoro & Bharati, 2022). Similarly, well-known and leading researchers in the fields of developmental and educational psychology, neuroscience, and learning on children's learning styles (e.g., Pashler et al., 2008; Riener & Willingham, 2010; Tardif et al., 2015; Willingham et al., 2015; Kirschner, 2017; Husmann & O'Loughlin, 2018; Nancekivell et al., 2020; Yale Poorvu Center for Teaching and Learning, 2021; Nguyen et al., 2022) have extensively reviewed the existing literature on learning styles and found no reliable evidence or measurable data to support claims of teaching to a specific learning style. Neuroscience helps to clarify that there is no reliable evidence for the claim that children have different learning styles (Kirschner, 2017). For example, research in neuroscience confirms that the distinction often made between cognitive and emotional aspects of development is not an accurate representation of how the brain processes information (Wasserman & Zambo, 2013). Neuroscience provides a well-documented rationale for challenging the myth of learning styles. Brain development is shaped by experience (Howard-Jones et al., 2013). A child may have a preferred modality for responding to incoming stimuli; however, responding to the environment is not limited to a pre-programmed learning style or modality (Kirschner, 2017). Young children learn most effectively in socially and emotionally responsive play environments that provide multimodal stimulation (Mosier, 2013). Overall, research rejects the argument that learners learn better through their self-reported learning style.

To summarize, there is an endless framework for categorizing learning strategies and styles. Learners may have more than just ways of gathering information and regulating their behavior in the psychological, cognitive, and affective domains while learning a language in various learning contexts. The literature on learning strategies and styles indicated that they are constantly varying across new methods and in various learning contexts. Thus, unlike strategy and style, the relevant studies have provided clear insights into the habit formation that occurs in the background of the mind during language learning under the influence of environment and intervention procedures.

3. Opposition to the Notion of Habit in Language Learning

More than a century ago, the notion of habit was well understood by the pragmatist philosophers and psychologists William James and John Dewey and the institutional economist Thorstein Veblen (Hodgson, 2010). In parallel, the notion of habit gave meaning to the behavioral perspective through Thorndike's (1898) law of effect, Hull's (1943) impulse reduction theory, Skinner's (1938) operant conditioning (see Smith & Graybiel, 2016). As a result of these studies, habit was defined as behaviors based on stimulus-response relationships acquired through reinforcement-based learning (e.g., Hull, 1943; Holland, 2008). These developments brought the behaviorist approach to language learning to the agenda for the first time and formed the basis of the psychology of language education. It has therefore been argued that language learning involves a process of habit formation or conditioning and that imperfectly formed habits lead to errors (e.g., Skinner, 1957; Lado, 1964; Ross, 1976). According to this view, second language acquisition is regarded as the process of overcoming the habits of the native language in order to acquire new habits of the target language (Wang & Wu, 2020). For those who think of language as a system of habits, learning a language consists of adopting the tools for the formation of that habit. These include a process of overlearning through dialogue memorization, imitation, and stereotyping techniques (Mackey, 1965). The process results in automation, i.e., habit formation.

Skinner's (1957) "Verbal Behavior", one of the most famous proponents of the behaviorist approach, argued that language is not a complex mental construct with rules and representations, but instead, like classical and operant conditioning, the connections between stimuli and responses are formed and shaped by experience. On this view, a child saying "I want to watch a cartoon" may result in the child watching a cartoon, which reinforces (or conditions) the use of the verbal behavior. However, the behaviorist paradigm has failed to account for the so-called logical problem of language acquisition, namely the fact that children produce linguistic forms and elements that they have never heard in their environment (Chomsky 1964; McNeill, 1966; Brooks, 1968; Bever, 1970). The behaviorist understanding of language ignored meaning and did language learning without the communicative aspect of language.

Chomsky (2003) harshly criticized Skinner's verbal behavior and made several important points. He argued that the language is recursive and can generate an infinite number of sentences from a finite set of systematic rules and representations. Therefore, the complexity of the language created by

these rules is difficult (if not impossible) to explain in simple stimulus-response terms. In addition, he made an important distinction between an individual's "proficiency" knowledge of a language and his/her "performance" in using it. Chomsky's proposals on the nature of syntactic structure, especially his work on transformative grammar, led psychologists in the 1960s to conduct a number of experiments on how grammatical rules are processed in the mind. The key research question was whether allegedly more linguistically complex structures would lead to longer processing times. The results were mixed - research showed a significant relationship between linguistic structure and psychological processing, but despite early successes did not support the specific relationship proposed by transformative grammar (e.g., Miller & McKean, 1964; Slobin, 1966). It has also become increasingly clear that this distinction between proficiency and performance is not trivial and that the theories of proficiency proposed by linguists cannot simply be transferred to performance.

Another challenge was that language theories change rapidly, making it difficult for psychologists to test them. Chomsky's (2013) Theory of Transformational Generative Grammar proposes the existence of a language learning capacity common to all humans. Given the appropriate social environment with relevant stimuli, this capacity will develop and result in language use. The idea that language is simply a set of habits, and the explanation of habit as a fixed, automatic, unconscious neural connection or link between certain stimuli and corresponding responses, has been seen as an oversimplification, to say the least. Moreover, to think of the mind as merely "the place where stimulus becomes response" was to deprive the individual of that attribute that makes him or her rational. According to this theory, individuals learn because they have an innate capacity that allows them to establish the rules of the intended language as a normal maturation process. Chomsky (1964) believes that only primary linguistic data (PLD), i.e., data that children are exposed to and use while learning their mother tongue, can trigger the language learning mechanism. Therefore, extra-curricular inputs should be introduced to achieve the quantity required for language acquisition and emphasis should also be placed on the creative aspects of language and language use. In addition to recognizing and imitating certain sounds, newborn babies inherit some basic understandings of linguistic structure (Pinker, 1994). Once acquired, these rules will allow learners to create and understand new expressions that they could neither understand nor produce if they were limited to imitating input from the environment. Thus, the logic of Chomsky's theory of language acquisition as a process of role formation lies in what is known as "stimulus (input) poverty".

Despite the rejection of the proposition that second language learning involves habit formation, the theory of Transformative Generative Grammar suggests that language is a system governed by rules. The traditional structural approach to grammar learning and the audio-linguistic teaching method propose grammar learning as the formation of a skill-based habit or a new set of mechanical rules for language use. Chomsky's (1965, 2006) view is similar to Hegel's view that the mechanical aspect of language learning can sharpen the mind and awaken the desire to learn, and that this sharpened and awakened mind is the beginning of logical thinking (Wu, 2020; Hegel 1970). Habit and memory play an important role in the production of linguistic meaning, which behaviorists ignore. Hence, habit may be a form of mental association that develops through repetitive actions and, when necessary, the transformation of mental associations into behavior.

4. Notion of Habit and its Formation from the Perspective of Psychological Science

Modern psychology defines a habit as an automatic pattern of behavior that is learned through regular repetition towards a specific goal (Wood et al., 2014) and is formed by activating mental context-action relationships (Gardner & Rebar, 2019). Habits are usually subconscious routines of regularly repeated behaviors (Gillian & Tony, 2005) and are located in this important domain where the transition from automaticity to attentiveness takes place (Campbell, 2006). Habits do not require much attention and concentration and can be triggered or reinforced by an appropriate stimulus or context (Hodgson, 2004). Therefore, instead of using effective and complex strategies, individuals may act according to their habits when they encounter simple cues in their context.

Habits emerge with minimal prior thinking and persist as long as cues continue to be encountered (Lally et al., 2011). They are reinforced through associative and reward-learning mechanisms, and each associative repetition leads to small changes in the cognitive and neural mechanisms associated with procedural memory (Smith & Graybiel, 2016). In this context, habitualization of learners is important for the effective execution of the foreign language learning process in technology-supported learning environments. However, recent research (Hagger et al., 2010; Neal et al., 2013; Orbell & Verplanken, 2015) reported that habits proceed without cognitive mediation and continue to emerge even when self-control and motivation decline. This is because habitual behaviors are thought to be protected against any decrease in motivation (Gardner & Rebar, 2019). Moreover, habits have been found to initially develop in the presence of

reward but persist in the absence of reward (Orbell & Verplanken, 2015). Habit formation has been documented in a variety of laboratory tasks using a variety of behavioral tests, and in particular, evidence has been presented that responses are insensitive to changes in rewarding outcomes (Smith & Graybiel, 2016). Therefore, regular repetition and directing individuals towards a certain goal may not require a reward-punishment mechanism.

The amount or frequency of repetition in the habit formation process remains unclear (Lally et al., 2011). However, some researchers (e.g., Lally et al., 2010; Lally et al., 2011; Lally & Gardner, 2013) have concluded that consistent repetition of behaviors increases habit strength. As Rivers (1964, p. 35) states, "Habit strength is a function of how many of the stimuli produced by a response have this so-called reinforcing potential. If this potential is extinguished or if stimuli (...) do not appear (...) habit is lost". Habits provoke an individual to establish a mental association between the action and the situation in case that a new action is performed (Gardner & Rebar, 2019). In other words, they reinforce repeated actions in memory and reduce the accessibility between alternative actions (Lally & Gardner, 2013). Therefore, habits can be difficult to curb, even when they conflict with conscious intentions (Gardner, 2015). In such cases, habit, not intention, tends to guide behavior (Triandis, 1977; Judah et al., 2013; Gardner et al., 2016; Smith & Graybiel, 2016; Judah et al., 2018). In contrast, Rhodes and de Bruijn (2013) argue that when individuals acquire new habits, they are more likely to act in line with their intentions. This claim was supported by some researchers (Sheeran, 2002; Gardner et al., 2011; Rebar et al., 2016; Enste & Altenhöner, 2021) who concluded that there was a positive correlation between habit strength and frequency of behavior, and habit strength can bridge the gap between intention and behavior. This seems to resemble the behaviorist tradition that always equates habit with frequency of behavior. However, Verplanken (2006) argued that doing the behavior frequently does not necessarily result in a habit. Moreover, there are different explanations for the interaction between habits and intentions in the regulation of behavior (Gardner & Rebar, 2019). For example, according to Verplanken and Melkevik, (2008), high frequency of behavior does not necessarily indicate the presence of a strong habit, and habit may change independently of behavior frequency. Cues encountered in a learning context or in any environment can often result in habitual performance, and habits can be more dominant than intentions in controlling action (Hall & Fong, 2007; Verplanken & Melkevik, 2008; Lally & Gardner, 2013). More precisely, habitual behaviors come under the control of the environment and the influence of intentions and conscious attitudes to control behaviors is reduced.

On the other hand, whereas the performance of motivated behaviors typically requires deliberate effort (Lally & Gardner, 2013), cognitive effort is reduced when habits are considered to be automatically triggered (Lally et al., 2011), and thus mindfulness can occur without conscious control, mental effort, and intention (Bargh, 2014). A number of studies (e.g., Ouellette & Wood, 1998; Webb & Sheeran, 2006; Lally & Gardner, 2013) have shown that behaviors that are frequently performed in consistent settings tend to persist even when motivation changes. Therefore, habitual actions are thought to be resistant to motivational changes (Verplanken et al., 1997; Judah et al., 2013; Lally & Gardner, 2013; Gardner & Rebar, 2019), and habit formation can sustain new behaviors even when motivation is lost (Rothman et al., 2009). It's all about activating habitual responses, and an individual can act directly on mental reactions without deciding to do something (Smith & Graybiel, 2016). When individuals lack the decision-making capacity or motivation to behave unorthodoxly, they tend to return to practicing both good and bad habits (Neal et al., 2013). Habit formation does not require extrinsic rewards, where people are intrinsically motivated and where intrinsic motivation can be supported through praise and encouragement and the support of a mentor with whom the actor can relate. Undesirable habits can be broken by restructuring personal environments or programming new responses to existing environments.

The aforementioned research provides deep insights into the long process of habit formation. Habit formation requires regular repetition of intermittent stimuli in specific contexts. However, it is important to note that individuals are exposed to interventions for a specific purpose. Thus, more profitable ways out of old habits (i.e., reward) should be presented as an option. These rewards do not necessarily imply a financial expectation. For example, when a person who wants to be a pilot sees an airplane and immediately tries to gather information about it, this is a habitual behavior rather than a conscious one. In sum, habits are formed in pursuit of a goal and are transformed into behavior, consciously or unconsciously, when cues about the goal are encountered in relevant contexts.

5. Technology Provokes Habit Formation in Language Learning

Digital technologies frequently used for academic and daily life routines prior to the COVID-19 pandemic (Sousa & Rocha, 2019; Al-khresheh, 2022) have never been expected to witness such widespread use to drive an instant and specific mode of online learning worldwide (Hodges et al., 2020). F2F-education was suspended to slow and keep under control the spread of the virus worldwide (Kohnke & Jarvis, 2021; UNESCO, 2021),

and higher education institutions used Learning Management Systems (LMS) (e.g., Blackboard, Canvas, Moodle) supported by video-conferencing software (e.g., BigBlueBotton, Collaborate Ultra, Zoom, Microsoft Teams) (Hodges et al., 2020; Moorhouse & Kohnke, 2021; Kohnke & Jarvis, 2021). However, many researchers (e.g., Gacs et al., 2020; Oskoz & Smith, 2020) have suggested that the Covid-19 pandemic could change the ways of future designs and implementations of teaching styles, materials, and programs in FLL forever, assuming that it may affect perceptions and knowledge of learners and instructors about learning a foreign language online (Jin et al., 2022). Therefore, the unexpected large-scale digital transformation of learning environments, teaching methods and materials that learners have gotten accustomed for many years, is likely to affect their learning habits. However, there is a gap in the relevant literature and the question of whether changing lifestyles and primary human needs can create new habits in learners' foreign language learning is avoided. It is seen that research on foreign language learning on online platforms has not provided effective solutions since the past and similar results are obtained even though each new digital technology is integrated into the learning process.

Interestingly, prior to the COVID-19 epidemic, studies on the effects of online learning on FLL yielded similar results. Many researchers (e.g., Chenoweth & Murday, 2003; Chenoweth et al., 2006; Blake et al., 2008; Enkin & Mejías-Bikandi, 2017; Goertler & Gacs, 2018) argued that online learning was as successful as F2F language learning but concluded that this success was related to the easy accessibility and shareability of knowledge in online learning settings (Smith & Basham, 2014; Chang et al., 2018) and the minimalization effect on FLL anxiety compared to F2F learning (Muilenburg & Berge, 2005; Saadé & Kira, 2009; Sun, 2014; Shapiro et al., 2017; Wombacher et al., 2017). More crucially, the FLL success in online platforms was all about learners' choice and willingness to learn a foreign language online. This means that learners need to form habits towards the online learning process. Related to this, some researchers (e.g., Kohan et al., 2017; Dvořáková et al., 2021) argued that in online learning, learners have high expectations from the instructor and in this context, students need to be encouraged, motivated, and guided more in terms of task and content relevance to the course content. This is because a sense of community, belonging and constancy has a positive impact on academic self-efficacy, which is an important factor in student engagement and success in online courses (Dvořáková et al., 2021). Moreover, issues such as lack of direct feedback, active participation, communication, and interaction have a negative impact on instructors and lead to a negative perception of online

learning (Watts, 2016; Fojtík, 2018). To bridge the gaps between online and F2F learning, activities should include visual, auditory, behavioral cues and sensory activities to help build more social connections (Knowlton, 2000; Henrie et al., 2015). Social presence defined as students' feeling of belonging to the online course environment (Stewart, 2019) and being in contact with their peers and instructor, is claimed to increase online course satisfaction and participation rate (Zhu, 2012; Chatterjee & Correia, 2020; Bailey & Almusharraf, 2021). Another concern about online learning is the low self-regulation of learners in the online learning process. It is difficult for students to organize themselves while learning in a virtual learning environment. Self-regulation is considered a critical competence in distance education (Kuo et al., 2014; Henrie et al., 2015; de Araujo Guerra Grangeia et al., 2016). Since instructors do not have significant control over the learning process as in F2F classrooms, learners need to rely on their own self-regulation to achieve effective and efficient learning (Artino & McCoach, 2008).

The aforementioned research proves that it is becoming increasingly clear that habits provide an effective self-regulation tool and that individuals act on their habits in ways that help them achieve their goals (Wood, 2017). Acting on habits can also free up cognitive resources to tackle online learning tasks, and habits provide a ready response when learners are distracted, stressed, or unable to decide what to do (Neal et al., 2013). Habits, which are learned patterns of behavior that automatically progress in response to relevant cues, may offer a potential way for learners to sustain their behavior of participating in online courses (Judah et al., 2013). Based on all these, this paper argues that language learning involves a process of habit formation and that flawed habits are at the background of difficulties in the language learning process. From a habit perspective, the language learning process involves interventions for behavior change and context coherence.

5.1. Interventions for Behavior Change

Habits develop based on what the individual experiences as useful and beneficial (Verplanken et al., 1998.) Moreover, habits are built on mental associations such as automatized concepts and goals (Wood, 2017), and thus implicit goals may prevent habit formation. Explicitly stating goals in the language learning process can be effective in improving language learning performance. Even if learners are presented with various principles for learning a certain rule or word in the target language, they may tend to act according to their own habits. When individual differences are considered, the learning performance of each learner varies. This may be because cues related to students' own habits govern their learning process. Therefore, they

may need to be exposed to behavior change interventions to change their habitual cues. While learning a foreign language in online environments, instructors may need to consider the habits that learners have developed while learning a language in regular classroom settings or individually. For example, some researchers (e.g., Swain, 2002; Yılmaz & Keser, 2016; Tanır, 2022) found that shy learners feel more comfortable in virtual platforms and are more willing to participate in online courses compared to regular classroom settings. This may be related to the fact that students encounter cues related to the habit of shyness in the classroom environment, which develops depending on the environmental interventions they are exposed to early in their lives. These cues can be exemplified by being looked down upon by their peers, not liking the tone of their voice or the negativity caused by their physical characteristics, which can cause them to feel isolated in memory and a sense of erasure of their social presence. The lack of exposure to such cues in virtual environments may result in students forming the habit of engaging in the learning process. Therefore, long-term behavior change interventions should be conducted in the language learning process to form new habits.

5.2. Context Coherence

Animal research shows that transitions between contexts affect habit performance (Thrailkill & Bouton, 2015). In other words, continuity in a new context and stability in responding to contextualized goals are important for the formation of new habits. This is because habits reflect associative learning and the formation of context-response relationships in procedural memory (Wood, 2017). When a context-sensitive habit is formed, the automatic response mechanism becomes functional and becomes a behavior. Although the literature on language learning in online platforms presents an optimistic picture of language learning success, it shows that learner engagement is the most important factor behind the success of online language learning. However, learner engagement in online platforms remains a major challenge. Education and training activities all over the world are still perceived as activities that take place in physical buildings (Tanır, 2022). Therefore, it is difficult to break a learner's habit of going to school. From pre-school to postgraduate education, individuals actually participate in learning activities as a result of their habits. Therefore, the process of language learning through online learning or other mediated technologies is associated with breaking old habits. To form a habit, the presence of cues related to online learning environments should be repeated regularly and become a behavior (Lally et al., 2010), variables that discourage the maintenance of the behavior should

be considered (Borland, 2010). In this context, the necessity of online language learning should be conveyed to the learners, and smartphone or notification services may be used as cues to form habits.

Although we live in an age where we witness the rapid change and transformation of digital technologies, the current perception of learning still bears the traces of the 20th century. The mental representation of the triad of school-teacher-classroom that is embedded in memory is in fact a habit formation that is difficult to break. Therefore, language learning in online platforms still cannot be said to reflect the real perception of learning. The disruptions in educational activities all over the world, especially because of the emergency transition to distance education as a result of the COVID-19 pandemic, were the best example of this argumentation. Almost all researchers have focused on distance education in the shadow of COVID-19. But in the transition between learning contexts, the possibility that cues to old habits might not be encountered was ignored. Moreover, the failure of instructors and learners to develop sufficient digital learning habits resulted in dissatisfaction. Satisfaction in habit formation plays an important role in the attempt to change behavior. In this regard, Rothman (2000, p. 66) argued that "a sense of satisfaction is the first right decision to change behavior." Accordingly, habit formation attempts of learners who are dissatisfied with learning activities in new learning contexts may end in failure. Pushing learners to unrealistic expectations in online learning contexts may be one of the important variables affecting language learning performance. Therefore, conducting learning in online contexts consistently and implementing behavior change interventions in the context of desired learning goals may be effective in improving habituation performance.

6. Conclusion

Findings from psychological research on habits and language education research on language learning strategies and learning styles are broadening the understanding that language learning is as a set of habits. This article shows that language learning habits may be much more than the idea that they are formed through repeated association between some stimuli and some responses. Moreover, it argues that cognitivists' view that learning styles, which refer to the strategies that language learners consciously employ to learn a language more effectively and their personal preferences for how they prefer to receive information, are actually a reflection of habit formation. Habits are the mental representations that individuals form in their memory by being exposed to regular external responses in certain contexts and transform into observable behaviors. Language learning habits are formed

as a result of an attempt to achieve a desired goal and to gain benefits. Once the habit formation is complete, there may be no need to be exposed to any stimuli. When cues related to the habits formed in memory are encountered, the learner may consciously or unconsciously engage in activities related to the language he/she is learning. Therefore, in language learning, learners need to be exposed to frequent interventions in consistent contexts in order to form useful habits to achieve the desired goals. Attention should be paid to variables that inhibit habit formation, and satisfaction-enhancing learning activities should be designed to match learners' goals.

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