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Language Learning from the Developmental and Neurocognitive Perspective: An Examination of the Impact of Music on Second Language Acquisition

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Abstract

This literature review aims to analyze the influence of music as a learning tool throughout the process of second language acquisition. Through the compilation and analysis of recent research conducted on the academic, cultural, and linguistic impacts of music on the four modes of language, which include reading, speaking, writing, and listening, this thesis will demonstrate the effects of incorporating music into the second language learning curriculum. Definitions of both music and language, as well as a description of the components of both areas will be included. An examination of the neurocognitive relationship between music and language, as well as the process of memorizing linguistic content will be conducted. Finally, an analysis of the impacts of music during the process of second language acquisition will be conducted. Specific attention will be paid to the influence of music on the language learner, as well as the implications of incorporating music into the language learning curriculum.

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Introduction

In 2019, the National Institute of Health reported that 20% of the United States population, 67% of the population of Europe, and 25% of the population of India is bilingual (Byers-Heinlein et al., 2019). In a world that is constantly becoming ever more diverse, the idea of learning two languages to communicate with a broader range of individuals is heavily valued. The prevalence of bilingualism in children is even higher, with 26% of children in the United States speaking more than one language (Byers-Heinlein et al., 2019). For innumerable reasons, including the recognition of multiple languages as national languages and increased rates of intercultural travel, the prevalence of bilingualism is rising throughout the world. The process of language acquisition, whether it is one's first or fourth language, is gradual and requires much practice in order for fluency to be attained.

The process of language acquisition can be arduous and challenging. While numerous helpful tools exist for facilitating the language acquisition process, such as the *Rosetta Stone* or *Duolingo* programs, a tool for teaching and reinforcing language that has garnered greater attention by foreign language learners and teachers is music. Music has the capacity to completely transform the process of second language acquisition due to its universal recognition and ability to resonate with second language learners. This widespread appeal gives music the flexibility to suit the needs and pique the interests of diverse learners. Music also facilitates greater retention of linguistic content in second language learners. The use of music throughout the process of second language acquisition has the ability to revolutionize the efficiency and methods through which an individual acquires languages beyond his or her native tongue. With the rising rates of bilingualism throughout the world, new and improved methods of second

language instruction are necessary in order to encourage an enjoyable, successful learning process.

The purpose of this literature review is to investigate the influence of music as a learning tool throughout the process of second language acquisition through definition and analysis of the components of music and language, as well as an examination of the relationships between these elements. Each prominent component of music and language will be reviewed to determine the connection between music and language and the implications of how these connections can be applied to the language learning process.

Music and Its Components

Music in and of itself is considered a universal language. Regardless of language, culture, belief systems, age, and gender, this art form can be easily understood by humans (Israel, 2013). A language founded on principles of emotion, music does not have a concrete meaning; music holds unique meaning to each person. Defined as “the arranging of tones in an orderly sequence so as to produce a unified and continuous composition,” music is a complex, yet harmonious field with a truly ineffable influence over the human race (Mashayekh & Hashemi, 2011). Music can be used as a creative outlet through which one can express his or her innermost thoughts in a relatable manner. Consisting of numerous acoustic features, music shares many elements in common with spoken language.

Rhythm, defined as the temporal organization of perceived events, serves as a basis for both music and language (Fuji & Wan, 2014). Rhythm is the underlying beat of music; it is the pulse to which we tap our toes and clap our hands. The concept of rhythm is also essential in facilitating human understanding of spoken language. The rhythmic and melodic characteristics of speech are encompassed under the term “prosody”, which includes such elements as

intonation, tone, and stress (Rose, 2018). Through rhythm in both music and language, meaning is conveyed. For example, if a song is meant to evoke feelings of happiness, the texture of the rhythm is energetic, light, and often in a major mode, while if a song is meant to evoke feelings of sadness, the texture of the rhythm is lethargic, dark, and often in a minor mode. Rhythm and melody, in association with the words we choose, work in tandem to formulate the meaning of the songs we hear and the language we produce and understand.

Due to the meaningful, captivating nature of rhythm, research has proven it to be a wonderful tool for facilitating memory. As is illustrated in the all too common, “song stuck in my head phenomenon”, music has the potential to become so engrained in our minds we can hardly shake it (Engh, 2013). This makes music an incredible tool for learning material of any kind. The use of rhythm in promoting recall has been broadly studied, and evidence suggests that the use of musical elements throughout the learning process results in greater retention of material, no matter the academic discipline (Engh, 2013). Not only does music have a remarkable effect on memory, it also has the potential to boost analytic listening skills, cognitive function, confidence, and cultural awareness (Mashayekh & Hashemi, 2011).

Since music is a universal language, it can be considered a powerful tool for facilitating connections between diverse populations. Music can be viewed as an international communication tool through which ubiquitous ideas can be shared to individuals of diverse linguistic and cultural backgrounds (Mashayekh & Hashemi, 2011). With widespread appeal and a welcoming effect for all, music holds a special role for those who do not yet have the words to express themselves. This appeal, in association with the numerous effects to be explored throughout this literature review, allows music to have a significant positive impact on the process of second language acquisition. Music not only facilitates language acquisition in

second language learners, it also provides tremendous insight into the culture of their target language.

Language and Its Components

Language is defined as an intricate, ever-changing system of conventional symbols used for thought and expression that can be transmitted through spoken or written word, or manually via sign language (Kaderavek, 2015). Language can be broken down into two broad categories: receptive and expressive language. Receptive language refers to one's ability to comprehend and process language, while expressive language refers to one's ability to communicate intended meaning through language (Kaderavek, 2015). Strong abilities in both expressive and receptive language are crucial for one to become a proficient communicator. Language can be further broken down into three areas: form, content, and use. Form is the way a communicative utterance is constructed to convey meaning, content is the meaning the utterance intends to convey, and use is the social function of the communicative utterance (Kaderavek, 2015). From these three areas, language can further be broken down into five prominent subcategories: form consists of phonology, morphology, and syntax, content consists of semantics, and use consists of pragmatics.

Phonology is the sound system of language; it deals with the manner in which sounds are combined to form meaningful words or utterances (Kaderavek, 2015). Morphology relates to the way words are constructed to serve a communicative purpose. Morphology is the study of morphemes, which are the smallest units of linguistic meaning; examples of morphemes are plural "-s" and past tense "-ed" (Kaderavek, 2015). Syntax is the system responsible for determining the order and combination of words to form meaningful sentences (Kaderavek, 2015). Semantics relates to the meaning of words and sentences. Our semantic knowledge is

reflected in our vocabulary, as well as our selection of words to convey our desired meaning (Kaderavek, 2015). Pragmatics is the system responsible for combining each component of language into social communication in a way that is functional and appropriate in each context (Kaderavek, 2015). Each aspect of language operates collectively to help humans both project messages to others, and receive messages from others.

Our system of communication is all-encompassing and quite complex. Communication is a means of sending and receiving information that includes both symbolic and non-symbolic communication (Kaderavek, 2015). Symbolic communication relates to human-attached meanings of words, and non-symbolic information relates to body language, gestures, and facial expressions (Kaderavek, 2015). Non-symbolic communication explains the possibility to use aspects of nonverbal language such as gestures and expressions to convey meaning. Verbal language requires the accompaniment of speech skills, which are another aspect of communication.

Speech involves the articulation and fluency of speech sounds, as well as the quality of a speaker's voice (Kaderavek, 2015). To differentiate between speech and language, language is the system of verbal and nonverbal cues and symbols we employ to convey our intended messages, while speech is the manner in which we verbally articulate our messages. Despite the fact speech and language are easy to combine under the term "communication", both are distinct entities that collaborate with one another to create meaningful, expressive utterances. Though speech and language are fundamentally different aspects of communication, both tend to associate with specific musical qualities. For example, intonation and prosody reflect the emotions humans intend to convey within their communicative utterances. The musical qualities

of language reflect the way we use intonation and prosody to convey our intentions, while the musical qualities of language reflect the way humans use their voices to convey meaning.

Literature Review

Early Speech and Language Acquisition in Relation to Music

From birth to late adulthood, humans' ever-dynamic language skills continue to develop and expand. Changes in language skills and usage occur over a long period of time, and each individual makes progress at a different rate due to a number of factors. For decades, theorists have been at odds over the pediatric language acquisition process. The most prominent dispute pertaining to language acquisition is the nature versus nurture argument. Theorists who align with the nature perspective argue that children possess an innate ability, which is present from birth, to learn language, while theorists who align with the nurture perspective argue that language is learned from observing mature language in a natural environment (Kaderavek, 2015). Whether language is learned from nature, nurture, or a combination of the two methods, language is learned on a progressive scale that continues to evolve as humans age. The order in which typically developing children acquire language is early pragmatic skills, vocabulary, early word combinations, morphosyntax, and discourse (Kaderavek, 2015).

Early pragmatic skills begin at birth and can be observed in the way infants communicate prior to utilization of language skills. Children in this stage make reflexive sounds, movements, and gestures, and present their attention to people or objects without true communicative intention (Kaderavek, 2015). In fact, all communicative intention at this stage of language development is assigned by the infant's caregiver. The result of this attribution of meaning is that children later begin to intentionally produce these behaviors (Kaderavek, 2015). Children are considered to express communicative intention when they present with such behaviors as

gestures and vocalizations to direct caregiver attention, eye contact, joint attention, turn taking, and breakdown repair (Kaderavek, 2015). Between eight and fifteen months of age, children may use language to request, refuse, or make a comment. Between sixteen and twenty-three months of age, this range of linguistic functions expands to include asking and answering questions, as well as acknowledging responses (Kaderavek, 2015).

As children become more proficient communicators, they begin to actively participate in conversations. Discourse, which is a communicative exchange, is defined as the connected flow of conversation between two or more individuals (Kaderavek, 2015). Children exhibiting conversational discourse will initiate conversations, take turns in conversational exchanges, maintain conversational topics, and use language appropriate for each context (Kaderavek, 2015). Discourse skills are also evident in children who repair conversations when they or their partners do not understand, as well as the child's ability to alter between formal and informal language, depending on situational context (Kaderavek, 2015). Discourse skills are essential in becoming adept communicators with family members, peers, and teachers.

Vocabulary development begins in the later months of a child's first year and continues to expand throughout his or her life (Kaderavek, 2015). Vocabulary development soars during the early preschool years, when children are exposed to new topics and peers. Another surge in vocabulary development takes place during the school years, when children learn specific words associated with academic content areas (Kaderavek, 2015). A child typically produces his or her first words between the ages of 10 and 16 months (Kaderavek, 2015). By the time a child reaches 2 years of age, he or she can typically produce between 200 and 500 words, and can understand many more words than he or she can produce (Kaderavek, 2015). Receptive language skills, regardless of age, tend to be much better than expressive language skills because

through context in written and verbal communication, humans are able to contrive the meaning of unfamiliar words and phrases.

Multiple-word combinations begin to emerge once an individual has acquired approximately fifty distinct words (Kaderavek, 2015). In this stage of language acquisition, children are not bound by the parameters of mature adult language. Children will formulate combinations of words by naming objects or people, labeling actions, describing characteristics of an object or person, and naming the owner of an object (Kaderavek, 2015). Overall, children's early word combinations must be judged for what they are; some communicative intent may still need to be implied by communication partners in order to achieve comprehension of a young child's utterances.

Morphosyntax development is the stage during which children's utterances begin to display features of mature language in the areas of morphology and syntax (Kaderavek, 2015). The emergence of these two subdomains of language forms generally occurs between twenty-four and thirty-six months of age, and is illustrated when children add the root "-s" to words to indicate plurality, or when "-ed" is added to a verb to indicate past tense (Kaderavek, 2015). A child's syntactical and morphological development continues to refine as he or she progresses through school, due to exposure to mature language and a deeper immersion into reading, writing, and spelling skill development.

The final stage of language development is advanced pragmatic and discourse development. In this stage, all skills developed in prior stages continue to expand and merge together, thus establishing the formation of mature language skills. To be an effective communicator is to possess proficient skills in each subdomain of language, and effectively combine them to facilitate a cohesive flow of information. Between the ages of three and seven

years, children's pragmatic and discourse skills include the ability to use language to reflect on past experiences, reason with others, predict events, express emotions, interact with peers, use and comprehend linguistic elements such as sarcasm and politeness, and code switch to adapt communication based on partner and context (Kaderavek, 2015). Further, children's pragmatic and discourse skills continue to develop in school during participation in activities such as sports and clubs, group learning activities, and participation in class conversations (Kaderavek, 2015).

The most significant consideration to note in describing language development is that all of the previously mentioned developmental standards can occur contiguously with one another across a spectrum; no two children's language acquisition experience will look exactly the same. Additionally, no two second language learners will acquire linguistic knowledge at the same rate. While each of these knowledge-based milestones must be achieved at some point to progress to fluency in any language, some of these stages may occur concomitantly, while some may occur much sooner than others. Throughout the process of second language acquisition, some of these skills may even have been learned during first language acquisition. Music can enhance the progress one makes when navigating the stages of language development due to its frequent reinforcement of factors common in both music and language.

Music and language are composed of several common basic building blocks, with the most significant of these being rhythm. Rhythmic awareness begins in the womb; by the end of the third trimester of pregnancy, a fetus has the ability to detect a vast range of sounds (Friedmann, 2014). Such basic human functions as heart rate and breathing contribute to an infant's comprehension of rhythm. The heart rate of both the fetus and his or her mother combine to establish a steady rhythm that the fetus is exposed to constantly (Friedmann, 2014). At birth, infants add the fundamental human skill of breathing to their rhythmic repertoire, which

further contributes to establishing a basic tempo of necessary skills (Friedmann, 2014). Infants learn to associate the rate of his or her mother's heart, as well as the sound of her voice, to an emotional context. For example, when the mother is excited, her heart rate increases, and she speaks in a higher pitch at a louder level. When the mother is calm, her heart rate is slow-paced and steady, and her voice resonates at a normal, natural pitch and loudness. This basic rhythmic concept is reflected in songs; fast-paced, lively music is associated with a fast heartbeat and breathing rate, while relaxed music is associated with a stable, calm heart rate and breathing pattern (Friedmann, 2014).

The mother's voice serves as an infant's introduction to mature, rhythmic patterns present in speech (Friedmann, 2014). These patterns, known as intonation, expose infants to the organized sound patterns present in both music and speech (Friedmann, 2014). A form of infant and young child-directed speech called "motherese" is used instinctively by parents when speaking to their young children. Motherese is a high-pitched form of speaking that features exaggerated patterns of intonation, which reinforce characteristics of the native language (Friedmann, 2014). Due to overemphasis of rhythmic patterns present in motherese, infants are able to comprehend extralinguistic elements of their native language, while gaining early exposure to essential vocabulary.

Similar to the process of young children's development of the five subdomains of language, a process in which children learn to apply their newfound language skills into meaningful sounds during communication with others takes place. From birth to one month of age, infants present with vegetative sounds such as coughing, sneezing and hiccupping, as well as reflexive sounds, such as crying and fussing (Kaderavek, 2015). From one to four months of age, infants begin to coo. In this stage of prelinguistic development, an infant's vocalizations, or

coos, sound primarily vowel-like (Kaderavek, 2015). Between four and eight months of age, typically developing infants begin to babble (Kaderavek, 2015). Babbling is a prelinguistic concept described as strings of consonant-vowel combinations that infants tend to produce in prolonged, repetitive vocalizations such as “mama” or “didi.”

The next stage of expressive language development is jargon, which tends to develop between eight and twelve months of age. Jargon is an expanded form of babbling, in which mature prosody and intonational patterns are put into practice, but no utterances holding true meaning are yet produced (Kaderavek, 2015). When a child initially presents with jargon, his or her vocalizations will reveal characteristics of the intonational patterns they were exposed to through caregiver interactions. Jargon is to be considered a sign that a child is learning the rhythmic, intonational patterns of his or her native language. The final stage of expressive language development, which typically occurs between ten and sixteen months of age, is first words (Kaderavek, 2015). First words hold true, intentional meaning and serve as the most efficient means through which a young child can express him or herself.

Neurological and Auditory Processing of Language and Music

The comprehension of music and language on a neurocognitive level relies on the idea that sounds are first perceived by a system of hearing. The process through which hearing takes place begins when a sound wave is conducted from its source to the outer ear. Sound waves then travel through the ear canal before they reach the tympanic membrane, or ear drum, which sets off a series of vibrations and movements in the middle ear (DeBonis & Donohue, 2008). From the middle ear, sound waves travel into the inner ear, where they are perceived by hair cells in the cochlea. From the cochlea, sound travels along the auditory nerve. Once sound reaches the brain, it is processed in the primary auditory cortex, which is located in the temporal lobe

(DeBonis & Donohue, 2008). The perception of sounds in the environment leads to the human ability to discriminate between different sounds, and process sounds as needed to attain comprehension. Auditory, cognitive, and perceptive mechanisms are similar between music and language, which helps establish a common structure amongst the auditory information able to be identified by humans (Piri, 2018).

In order to process both music and language, the brain must first be activated by an auditory stimulus. Without the brain, sound would neither be perceived, nor understood, by listeners. To understand the ways in which the brain processes music and language, one must first understand the anatomical structure of the brain. The brain is divided down the middle into left and right hemispheres. Though the left and right hemispheres of the brain look identical to one another, each hemisphere houses areas unique to its respective hemisphere, and executes distinctive functions. The left hemisphere is generally believed to be responsible for scientific, mathematic, and linguistic abilities (Rouse, 2016). For example, Broca's area and Wernicke's area, which are essential to both the production and interpretation of spoken language, are housed in the left hemisphere. Broca's area is responsible for locating and constructing words together to create an appropriate expression of thought, while Wernicke's area is responsible for comprehending and extracting meaning from the speech of others (Rouse, 2016).

The right hemisphere is typically believed to be responsible for more creative, artistic, and emotional aspects of life, such as the processing of music (Rouse, 2016). As is illustrated in neuroimaging studies, both music and the supralinguistic elements of language tend to stimulate the right hemisphere of the brain (Trimble & Hesdorffer, 2017). Though the two hemispheres of the brain are believed to serve distinct purposes, the left and right hemispheres collaborate constantly in order to execute many of the brain's functions. The left and right hemispheres are

joined by the corpus callosum, which facilitates communication between the two hemispheres (Rouse, 2016). Due to this means of neural hemisphere communication, music and language can be interpreted and structured through a common cognitive network. Cognitive research suggests that language and music have significant points of convergence and overlap (Engh, 2013).

Results of studies in which neuroimaging data was collected indicate a merger within the brain between language and music processing (Engh, 2013). These results suggest that musical structure is processed in areas believed to be paramount in processing language, specifically Broca's area and its right hemisphere counterpart (Engh, 2013). Areas associated with musical and linguistic elements are housed near one another in the human brain, which illustrates the idea that music and language are processed similarly by the brain (Lems, 2005). In other words, the brain processes language in a musical sense. Music, especially when lyrics are included in a song, stimulates both brain hemispheres (Engh, 2013). In terms of cognition, music and language play a large role in the understanding of one another. One must be able to comprehend words in a song to understand a piece of music, and one must understand such linguistic elements as prosody and rhythm in order for language to be intelligible.

The Influence of Music and Its Relationship with Language

Music, which is a universal, yet culturally specific artform, influences daily life more than can be realized on a superficial level. Music surrounds us everywhere we go; it blares in our cars as we trudge through our daily rituals, provides us entertainment as we perform mundane tasks, and inspires us to run that extra mile when we work out. Music is a language of feeling in which there are songs to accompany each emotion or situation possible in human existence. Each unique individual has their own distinctive taste in music. Linguistic, cultural,

national, gender, and age barriers are crossed in musical preferences (Israel, 2013). Music is an innate aspect of our essence as humans, enjoyed by most and understood by all.

An aspect of music often unnoticed by individuals as they ponder the impact music has on their lives, is the ability of music to help memorize and master academic material. In fact, according to an article written by English professors Marzieh Mashayekh and Masoud Hashemi (2011), “Of the many factors that influence learning, few are as far reaching or little understood as sound and music.” However, music can have profound benefits on the ability of the human brain to store information in long-term memory. For this reason, music has become a more widely utilized resource in general education classrooms, and particularly in foreign language classrooms (Mashayekh & Hashemi, 2011). When used as a tool in a foreign language classroom, music has the ability to increase students’ vocabularies, enhance language skills in the areas of reading, writing, speaking, and listening, and strengthen appreciation of the target culture in students (Piri, 2018).

Music is an ideal form of cultural exposure for students, because it is such a common aspect of each culture. Though language learners may not yet have the words they need to express themselves in their target language, understanding of music surpasses language barriers. According to English teacher Keith Copley, an innate ability to comprehend and build upon musical constructs seems to be intrinsic in human beings, since musical frameworks appear to be common across cultures (Copley, 2018). Music is a natural stimulus for creativity, which is highly sought after in each classroom, but is especially useful in the foreign language classroom. One’s ability to use creative skills to learn material in a personally beneficial manner results in the optimum learning experience, as well as a high level of enjoyment throughout the learning process.

Structurally and functionally speaking, music is extremely similar to language. These two effective forms of expression are interconnected in many ways that often go unrecognized. Though music and language are perceived as divergent elements, the two collaborate with and complement one another on a grand scale (Engh, 2013). Language and music are both complex, abstract, and rule-based systems used by humans for communication (Warren, 2008). Both composed of small, distinct elements that must be combined strategically for meaning to be elicited, the possibilities for creativity within music and language are endless. Music and language each require strong listening and auditory discrimination skills, as well as an aptitude for recognizing patterns. As the two primary modes of human verbal expression, music and language are able to be learned in a straightforward, linear process, or possibly even contiguously.

Theorists have postulated that humans learn music before language (Engh, 2013). Since music is one of the ways in which humans gain exposure to linguistic elements of languages, this hypothesis seems to hold true. Language is learned primarily through exposure and interactions with caregivers, thus reinforcing the nurture hypothesis (Rose, 2018). Due to the intonation patterns exhibited by caregivers when speaking with infants, the musical aspects of a child's native language are reinforced to him or her at a very young age. Children grasp the musical aspects of their first language months, or even years, before they are expected to maturely use language (Rose, 2018). Years of actively listening to mature speakers of a language not only increases children's linguistic knowledge, but their musical awareness, which is illustrated through knowledge and mature demonstration of intonation patterns in jargon before children are able to produce their first words (Rose, 2018). In this way, children are able to grasp language in

a musical manner by intently listening for the paralinguistic aspects of communication expressed by the mature language users they observe in their natural environments.

The production and comprehension of auditory information is vital in both music and language. Due to the common elements of pitch, rhythm, and tone in both music and language, the two elements are closely linked together in terms of cognitive processing. The presence of these similar components helps prove that music is its own, distinct language (Israel, 2013). Music is a communicative mode containing information about the sound systems, word structures, sentence structures, and word meanings of a language (Israel, 2013).

Listening, reading, writing, and speaking, which are the four areas of language, each benefit from the incorporation of music into the language learning process. When listening to music, attention must be focused in order to attain awareness of the various tones, auditory patterns, and lyrical choices that construct the meaning of a song (Israel, 2013). The same precise, focused listening skills required for attending to music are also required when listening to others in conversation. Music also has the ability to reinforce literacy skills, such as reading and writing. Both language and music utilize a system of symbols that are able to be converted into sounds and hold linguistic meaning (Israel, 2013). Visual discrimination of graphemes, or letters, is central to the ability to read and write, while auditory discrimination of phonemes, or the sounds indicated by letters, are required in speaking and listening to a language (Israel, 2013). Similar to language, visual discrimination of musical notes is central to the ability to read and write music, while auditory discrimination of these notes is required to listen and play music. Of each of the four areas of language, speaking is most significantly impacted by music due to the manner in which it showcases the accents, stress, and intonational patterns of the target language.

Conversational language and shorter words and phrases are incorporated into songs, which are typically sung at a slower rate with various repetitions throughout the song (Piri, 2018). This allows language learners to become exposed to new words and phrases over multiple productions, thus creating a fun and effective learning environment for students. Due to the possibility for carry over of pronunciation patterns from a native language, music can be used to learn pronunciation patterns specific to the target language. Proper sound and word articulation is facilitated through musical exposure (Piri, 2018). Familiarization with the sound system of a language is crucial to second language learners as they develop skills and begin using the target language in conversations.

Theories Related to Language Acquisition and the Impact of Music

In the realm of pedagogy, many theories present themselves pertaining to how students best learn material. In relation to language learning in association with musical aspects, three theories stand out most prominently. The theory of language acquisition, hypothesized by Stephen Krashen, contains six total hypotheses; three of these hypotheses are widely accepted in relation to second language acquisition (Lake, 2003). Krashen's hypotheses in relation to second language acquisition are the affective filter hypothesis, the monitor model, and the input hypothesis (Lake, 2003).

The affective filter hypothesis argues that the most effective learning occurs in an environment where the student feels comfortable, confident, and motivated (Engh, 2013). In this theory, the emotional state of the student is referred to as the filter, which can either impede or enhance a student's acquisition of language (Lake, 2003). When a student is calm, confident in his or her environment, and highly motivated, he or she is said to have a low affective filter (Engh, 2013). A student with a low affective filter is more likely to seek information, receive

feedback, interact with others, and is thus more likely to achieve fluency in a second language (Engh, 2013). A student with a high affective filter is more likely to shy away from interactions with others, not accept feedback, and be unreceptive to new information (Engh, 2013). Students with high affective filters feel uncomfortable in the learning environment, and are not confident in their own abilities to learn. This theory applies to musically related acquisition of a second language, because music can be used as a way to make students feel secure in the learning environment, thus lowering students' affective filter.

The monitor model, as described by Stephen Krashen, suggests that adult second language learners have two methods for learning the target language. The first process is similar to native language acquisition. Adults who utilize this method of language acquisition exhibit an involuntary, innate approach to language learning (Lake, 2003). The second process is more conscious and laborious. Learners using this process study linguistic rules pertaining to phonology, morphology, syntax, semantics, and pragmatics in order to acquire language (Lake, 2003). No matter the process utilized by each second language learner, music can be used to enhance the learning process. For individuals using the first process described by Krashen's monitor model, music can serve as an additional stimulus through which language can be subconsciously learned. For individuals using the second process, music can be used to help learners uncover word meanings, sentence structures, and sound patterns of the target language.

The input hypothesis states that students should be exposed to material slightly beyond their current level of understanding in order to facilitate continued learning (Lake, 2003). As explained by Krashen, the language students are exposed to should be close to their current level of competency, but also approach the subsequent level (Lake, 2003). Following this method, students are continually exposed to material on their level, but their understanding of material is

continuously enhanced by more challenging topics. Music as a tool in the foreign language classroom can be used to reinforce the input hypothesis because students understand sound patterns, but are exposed to novel vocabulary terms present in song lyrics (Yousefi et al., 2014). In the chorus of songs, lyrics are often more accessible to individuals learning a second language, while lyrics in verses often tend to present more of a challenge to second language learners (Lake, 2003).

Effects and Implications of Music During the Process of Second Language Acquisition

The presence of music in the language learning environment is limitlessly beneficial to second language learners. As a means of access to the target language, music serves to benefit almost every aspect of communication for the second language learner, including impacts in each area of language: reading, writing, speaking, and listening (Israel, 2013). Though music has a widespread positive impact on language acquisition, the most significant effect of music on second language acquisition involves recall and memory.

Music has a profound impact on memory due to its catchy, repetitive nature. As a pedagogical tool, music has the ability to help students learn more information in the most effective manner, across all academic disciplines (Israel, 2013). Evidence from a study conducted by Dr. Tim Murphey, a professor of English at Kanda University of International Studies, suggests that music successfully aids in linguistic recall due to the similarities between songs and typical conversations held in the target language (Engh, 2013). Linguistic patterns present in songs can be applied to spoken language. The repetitive nature of songs makes them effective tools for learning pronunciation and supralinguistic features of the target language (Engh, 2013). Through lyrics, students are exposed to proper grammar, vocabulary, and sentence structure in a memorable way (Zilber, 2018).

In addition to the benefits of music on linguistic memory, music positively influences understanding of pronunciation, vocabulary, sentence structure, and fluency. Pronunciation and phonology are the easiest, and most widely targeted skills enhanced by music in the second language learning classroom. Song lyrics are repetitive and accessible, making them excellent tools for exposing second language learners to proper word articulation (Engh, 2013). Slower rates of speech and frequently elongated syllables provide second language learners exposure to sounds at the word level. Listening to songs in the target language is a great way for students to access the pronunciation and meaning of terms, while also aiding in familiarization with popular slang terms and colloquial phrases used frequently within the target language (Lems, 2005).

Students are able to develop rich vocabularies through listening to music associated with the target language. Songs pertaining to practically every topic possible exist in popular culture, thus allowing music to be a flexible, relevant method through which to learn words. Results from a study conducted by Dr. Suzanne Medina, an expert of English as a Second Language (ESL) methodology, revealed that second grade English language learners who were exposed to vocabulary using supplementary music learned more words than those who were not exposed to music (Lems, 2005). This study serves to reinforce the idea that music is an effective aide in teaching students words and their associated meanings in the target language. Sentence structure is also taught through songs, because by listening to songs, students are exposed to the proper order in which words should be placed in order to adhere to syntactic principles of the target language.

Second language fluency is significantly enhanced through the incorporation of music into the learning curriculum. Learning environments reinforced by music enhance second language learner fluency through exposure to the sounds, rhythms, and stress patterns of the

target language (Piri, 2018). These paralinguistic aspects of speech have the ability to influence not only the language learner's pronunciation skills, but also their ability to acquire the target language, in general (Piri, 2018).

Errored pronunciation patterns in the initial stages of the language acquisition process set a poor precedent in conversational speech due to the increased likelihood for misunderstandings. Once linguistic patterns are acquired, changing them can be difficult. The infamous difficulty of unlearning paralinguistic habits from the first language when acquiring a second language is demonstrated in the fact that many second language learners speak using accents developed as a result of the prosodic patterns in their native language (Rose, 2018). Though accents are completely natural, second language learners must have the ability to discriminate between rhythmic patterns in their first and second languages and adequately replicate the paralinguistic features of their target language (Rose, 2018).

Music has profound benefits on the technical aspects of language learning, but its personal effects on the individual learner are equally remarkable. Due to the natural human ability to establish emotional connections to works of art, music has the potential to inspire students to learn language. Due to the pleasurable, comfortable environment created by subjection to music in the language learning environment, music can also serve as a motivating factor for students to work hard to acquire their target language, while also encouraging confidence.

A language learner's ability to connect a piece of music to a relevant aspect of his or her life helps promote learning and memorization of information at a faster rate (McCarthy, 2009). When students form emotional connections to a piece of music, its personal significance causes them to be more likely to devote the song, as well as its features, to memory. Each and every

piece of music has the ability to provoke emotion from listeners, and each listener perceives songs differently. For example, a song that elicits pleasant emotions in one listener may cause another listener to feel intense sadness. As a means of individualized, artistic expression, music is often described as a language of feeling (Lake, 2003).

Due to the emotional implications of music, it can also serve as a source of inspiration for students struggling to find the will to learn language. A study conducted by Dr. Hilda Israel, a professor in the Department of Applied Language Studies at Nelson Mandela University, found that second language learners of English were inspired by music to learn more about linguistic and cultural aspects of the target language (Israel, 2013). Generally accessible to all, music has the ability to expose listeners to aspects of its culture of origin. In other words, if a song piques the interest of a second language learner, he or she is more likely to want to seek information pertaining to the song's culture of origin. The amount of effort a second language learner puts forth to grasp concepts of his or her target language due to exposure to music relates to the affective, or emotional state of the learner (Engh, 2013). Motivation to learn is a crucial determining factor in how much the student is willing to invest in acquiring their target language, and this investment is often increased when music is included in the language learning process.

Another significant value instilled in the second language learner when music is utilized in the language learning environment is confidence. Reinforced by Krashen's affective filter hypothesis, confidence is key throughout the process of acquiring a second language. A second language learner must feel sure of him or herself in order to participate in classroom activities and interactions with material. Dr. Hilda Israel also found in the previously referenced study that music not only enhances a student's level of achievement in language learning, but also

improves general self-esteem (Israel, 2013). Music provides positive reinforcement to students due to its inclusiveness and accessibility to individuals of all cultures.

In addition to the individual benefits experienced by the language learner, music can also positively impact peer and community relations. Singing, which is to music as speaking is to language, is a collective activity that creates a cooperative learning environment and contributes to unity (Engh, 2013). Through the trust established between individuals when engaged in musical activities, students are able to bond with their classmates. This not only has a favorable impact on student's personal and social lives, but also on their academic pursuits. When students feel uncomfortable with their peers in an educational setting, learning cannot occur because student focus is shifted from academic content to personal security. To a second language learner, music creates a setting through which he or she can make friends and share cultural values with one another (Lems, 2005). Students are able to introduce their native cultures to classmates through music, thus fostering greater student awareness of diverse cultures.

Essential to the incorporation of music into the foreign language classroom is the manner in which teachers choose to integrate it into their curriculums. As a natural cognitive influence, music is often selected by teachers as a classroom tool because it stimulates both hemispheres of the brain. As previously noted, the left hemisphere of the brain is primarily responsible for language learning and the right hemisphere is primarily responsible for music and creativity. When both hemispheres of the brain are utilized, linguistic acquisition is able to take place to the most effective capacity (Lake, 2003). Research has shown that only 4% of second language learners who attempt language acquisition through a left-brain dominant approach which utilizes such processes as rote memorization and drills, advance to fluency in the target language (Lake,

2003). This data is significant in illustrating the idea that both brain hemispheres must be triggered in some way in order for language learning to be most successful.

Though music can be a wonderful enhancement to learning in and of itself, using multiple stimuli to expose students to content has been shown to be even more effective. When songs are reinforced by illustrations, reading material, photographs, and gestures, the possibility to quickly devote linguistic aspects of the target language to memory is vastly increased (Rose, 2018). When multiple types of visual and auditory stimuli are presented to students together, multiple areas of the brain are stimulated at once. Since each student in a classroom possesses a different learning style, presenting various stimuli to reinforce material is crucial in making content accessible to all students. Another brilliant way to reinforce linguistic content through music in the foreign language classroom is through kinesthetic activities such as clapping to rhythm, gestures, or even dancing to music (Rose, 2018). Through both physical and mental engagement with material, students' focus and retention of classroom content is amplified (Rose, 2018). One of the most important aspects of the incorporation of music into the foreign language classroom is creativity. If teachers encourage their students to be creative, and they themselves are also inventive in their approach to language learning, student comprehension of the second language will be strengthened.

When choosing songs to incorporate into language learning curriculum, teachers should keep in mind that popular music often works best due to its broad appeal and frequent commercial play (Lake, 2003). The more students hear a song, the more its linguistic elements are reinforced and committed to memory (Zilber, 2018). Popular songs are known to include words that every speaker of a specific language needs to know in order to achieve fluency, thus making these songs a great tool for exposing students to necessary vocabulary terms (Lems,

2005). Often conversation-like and occurring at nearly half the speed of conversational speech, popular songs are great tools for aiding students as they progress toward target language fluency through modeling the structure of conversations in a less rapid manner (Engh, 2013). Popular songs are versatile and exist in such vast quantities they can be chosen to accommodate any language learner's interests or current level of understanding (Nchindila, 2011). This allows teachers the flexibility to choose songs that reinforce and slightly stretch the student's current language abilities, in accordance with Krashen's input hypothesis.

Music's universal relevance causes it to be a wonderful asset in a classroom composed of diverse individuals not only because of its alignment with the linguistic curriculum, but also because it encourages conversations between classmates pertaining to the material (Zilber, 2018). Students are able to converse with one another about classroom content and the personal, cultural significance of the particular piece of music. Second language learners in diverse classrooms that utilize music as a tool for instruction are able to share the music of their homeland with others, thus facilitating a heightened source of tension relief. A fun, relatively easy way to encourage participation in students, music is an enjoyable way of immersing oneself into the target language and culture (McCarthy, 2009). Musical incorporation into the language learning classroom results in what Dr. Hilda Israel (2013) describes as a "learner-friendly environment with a positive vibe." The welcoming, exciting essence of a language learning environment filled with music results in students clearly noticing the practical effects of incorporating music into the second language learning process.

Students do not struggle to see the benefits of the incorporation of music into the second language classroom. Robert Lake, a teacher of English language learners in New York, presents many benefits of musical incorporation into the language learning curriculum that his students

have identified to him over the years. These benefits include, but are not limited to improved pronunciation skills, improved vocabulary comprehension, specialized listening skills, better understanding of grammar, and enhanced cultural knowledge (Lake, 2003). Each of these benefits are significant and internalize the idea that music assists second language learners during the linguistic acquisition process.

In order for students to uncover the obvious advantages of using music throughout the process of second language acquisition, teachers should take into consideration several key factors. Most significantly, classroom topics must be relevant to the songs teachers choose to study so that students can internalize these connections. According to Dr. Hilda Israel, the blending of music into the foreign language curriculum should occur frequently and methodically over all class meetings for best results (Israel, 2013). Relevant to this concept, Dr. Somaye Piri, a linguist, elaborated that music is best incorporated into the language learning environment when it is used extensively. “The use of music to promote second language acquisition should occupy a more important role in the second language curriculum. This can easily be accomplished by increasing the frequency with which songs are used in the curriculum,” Piri (2018) states. In association with music, frequent exposure to linguistic material leads to efficient language acquisition.

Conclusion

The purpose of this literature review was to examine the impact of music as a learning tool throughout the process of second language acquisition. Through analysis of the components of music and language, as well as an investigation into the relationships between these elements, research present in this literature review confirmed that musical incorporation into the language learning process has a tremendous positive impact on the acquisition of a second language. A

universal language in and of itself, music has a considerable influence on comprehension and mastery of linguistic concepts for second language learners. Notably, articulation, intonation, and grammar skills are improved significantly as a result of musical incorporation into the second language learning classroom.

Though music has been shown to result in profound benefits on the process of second language acquisition, more research is still needed to uncover the true breadth of its impact. Specifically, research pertaining to the neurocognitive relationship between music and language, as well as best practices for musical incorporation into the language learning curriculum, are needed to further this field of study. Qualitative research exploring individual second language learners' personal experiences using music as a language learning tool is also necessary in furthering this field of study. In addition to these areas, research uncovering the impact of music during the learning processes of several different languages would be useful in determining whether some languages are easier to learn in association with music than others.

The impact of music on second language acquisition is a relatively new topic of interest, and it has become widely recognized by several scholars and teachers as having significant benefits on the process of second language acquisition. Music, like language, is a means of connecting groups of people. The blending together of language and music to create a method of communication is essential in bridging gaps of communication amongst a multitude of diverse cultural groups. The more connections one is able to have with diverse individuals, the more one is able to expand his or her worldview and learn more not only about him or herself, but of countless other groups of people, as well.

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