Why Do People Use Duolingo to Learn Hebrew? Perceptions of Hebrew Learners on Their Motivation to Use Duolingo

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Abstract

The acquisition of a second language is an important skill to own in the twenty-first century. Often, language learners utilize software on a mobile or computer device to deepen their knowledge of the language. While many language learning platforms are available today, some are more popular than others. This study focuses on people who use the Duolingo app to learn Modern Hebrew.

This study investigates the factors that motivate people to learn Modern Hebrew through Duolingo and their perceptions about fulfilling their goals and learning more about Israeli culture and Jewish identity through the use of Duolingo.

These questions are especially interesting because Modern Hebrew is primarily used in the state of Israel and is often conceived as part of an ancient and rich Jewish cultural heritage, Jewish identity, and Israeli culture.

Keywords: Duolingo, Hebrew learners, Mobile-assistance language learning, Israeli culture, Motivation

Over 300 million people use the Duolingo app to learn a second language; among them, 893,000 are learning Hebrew. Duolingo currently offers a total of 97 courses for 39 distinct languages.

This data is not surprising. In the United States, about 275 million people use smartphones (i.e., 83% of the American population) and 90% of Americans use the internet. In addition to Duolingo, many language apps are offered to learners interested in acquiring a second language. With the increase of technology in the twenty-first century and the increase in technological opportunities for education, learning languages has become more attractive, accessible, affordable, and engaging (Boholano, 2017).

Acquisition of a second language is not an easy task; yet, people learn a second language for a variety of reasons, including communicating with one's grandparents, family, or friends who live in another country; helping one's child develop the cognitive and social skills of being bilingual; satisfying a language requirement as part of a school's curriculum; improving one's own memory and brain function; boosting one's career opportunities; better understanding one's own language and culture; and meeting people who speak the language and learning about their culture associated with the language (Mackey, 2014; Stein-Smith, 2017).

Motivation plays a key role in learning a second language. Motivation (also considered passion or desire) is regarded as the most influential force, as motivation initiates the action and provides the learners with the primary stimuli for initiating the learning. It is the combination of the desire to learn a new language and the effort to do so that leads to achieving that task. (Gardner, 1985; Gump, 2015; Ollero Ramírez, 2017; Oroujlou & Vahedi, 2011).

In this study, I focus on the factors that motivate people to learn Modern Hebrew. Exploring people's motivations for learning Hebrew and achieving their goals is especially intriguing because Modern Hebrew is primarily used by only nine million people in the State of Israel and is often considered as part of an ancient and rich Jewish cultural heritage, Jewish identity, and Israeli culture.

The first question I explore is that of motivation. Participants were asked what motivated them to learn Modern Hebrew. Various aspects will be taken into account consideration to identify the main purposes that drive participants to learn Hebrew as their second language.

This study also focuses on Hebrew learners' perceptions about the connection between learning Modern Hebrew and gaining knowledge on Israeli culture through the Duolingo app. Hence, I asked two research questions:

1. What motivates people to learn Hebrew?
2. Does learning Modern Hebrew through Duolingo help them fulfill their goal to learn the language, as well as their goal to enhance their knowledge of Israeli culture or Jewish identity?

Literature Review

What Motivates People to Lean a Second Language?

In the context of language learning, Gardner (1985) defines "motivation" as "the extent to which the individual works or strives to learn the language because of a desire to do so and the satisfaction experienced in this activity" (p. 10). A motivated learner is defined, according to Oroujlou and Vahedi (2011), as "one who is willing or even eager to invest effort in learning activities and to progress" (p. 995).

Gardner (1985; 2001) differentiates between two motivational orientations for learning a second language: instrumental motivation and integrative motivation. According to Gardner (2001), one's instrumental motivation for learning a second language relates to one's desire to learn a language for practical reasons and to fulfill practical goals, such as earning a promotion, increasing one's job opportunities, increasing one's earning potential, passing an exam, or improving one's social status. Knowledge of foreign languages influences other aspects of one's life, such as increasing one's understanding of various cultures, improving one's critical and creative thinking skills, helping one solve various practical problems, and providing access to the literature of or assistance when visiting a foreign country. (Riemer, 2003; Chilingaryan & Gorbatenko, 2015).

Integrative motivation occurs when a learner has positive attitudes toward speakers of the target language, admires the speakers' culture, and desires to interact with or integrate into that culture. The learner yearns to learn the second language to communicate with people from another culture and to create social relationships with the target language group (Gardner, 2001; Al Rifai, 2010). The learner desires to become part of the society by using the target language and experiencing the cultural aspects connected with the language. The learner seeks, according to integrative motivation theory, not only to become bilingual but also bicultural, incorporating the second language and its culture into their own identity (Okuniewska & Okuniewski, 2010).

Oroujlou and Vahedi (2011) claim that, although a combination of both instrumental and integrative motivation leads to successful outcomes, it is the integrative motivation that leads to long-term success. Learners who are passionate about acquiring a second language and learn through integrative motivation have higher success rates in learning the second language. Brown (2000) states that sometimes it is the combination of both integrative and instrumental motivation that stimulates people to learn a second language. A foreign student, for example, might learn a language for academic reasons as well as to become integrated into the local society.

A person's motivations for learning a second language influence not only one's decision to start learning the language but also one's ability to advance through the learning efficiently (Al Rifai, 2010; Okuniewska & Okuniewski, 2010). Without motivation, learners of a second language will become "fossilized" and will not learn regardless of how much they are exposed to the language (Klein, 1996).

Finally, because learners have different goals for learning a second language, it is essential that educators identify the learners' goals, in order to help them develop proper motivational strategies. Learners, in turn, must first identify what motivates them to learn and secondly, the level of effort required to achieve their goal (Oroujlou & Vahedi, 2011).

MALL and CALL

Learners of a second language often use technological platforms—mobile-assisted language learning (MALL) and computer-assisted language learning (CALL)—for acquiring a second language. While MALL utilizes personal mobile devices to deliver education content, CALL relies on computers for delivery (Blanco & Cera, 2019).

CALL

Computer-assisted language learning offers a variety of methods, approaches, and pedagogical philosophies for learning a second language (Garret 1991). Bahrani (2011), defines CALL as the "computer-delivered combination of a large range of communication elements— text, sound, graphics, pictures, photographs, animation and moving video" (p. 273). Teachers use computers to help facilitate students' acquisition of a second language and make the teaching practice efficient as software address some learning gaps. (Blanco & Cera, 2019; Jarvis & Achilleos, 2013; Ozturk, 2013).

The learners who use CALL must be active participants and respond by using the keyboard, mouse, and microphone. The learner is expected to research, ask, explore, and answer questions, while the computer program helps them understand the accuracy of their answers and provides feedback to the students accordingly (Ozturk, 2013).

The advantages of CALL are many. The use of CALL has been found to increase the learner's interest and motivation (Ozturk, 2013). The programs provide games and communicative activities that engage students in learning, and they reduce learning stress and anxiety while increasing students' self-confidence and positive attitudes toward language learning (Jung 2005; Ozturk, 2013).

The use of CALL, according to Ozturk (2013), is geared toward a learner's individualization and independence. As such, learners of a second language fit the learning process to their learning objectives. Students decide which skills to develop and what pace to follow, given their interests or needs, proficiency, and learning styles. Advanced students can use additional programs that provide more opportunities for learning (Ravichandran, 2000). Additionally, CALL relies on flexible learning: students have the opportunity to study, review, and practice as much as they need to and without time limitations. Students are also exposed to the accents of and pronunciations from native speakers. In addition, computer programs provide individualized analysis of students' learning errors and provide immediate feedback (Bahrani, 2011; Kilickaya, 2007; Derakhshan, et al., 2015; Hani, 2014).

However, CALL does have some disadvantages. Hani (2014) groups the disadvantages of CALL into four categories: financial barriers, availability of computer hardware and software, missing technical and theoretical knowledge to support the learning, and a school's culture as is related to technology. Hani emphasizes the disadvantages of CALL related to teachers' "technophobia" (Lam, 2000); some teachers might feel more comfortable teaching with familiar textbooks rather than advanced technology. Ozturk (2013) also enumerates a number of the disadvantages of CALL: inequities due to financial reasons, lack of appropriate training and self-discipline, and inefficiencies related to student's pronunciation and syntax errors. In addition, there are health concerns (e.g., eye, neck, and back injuries) related to sitting in front of the computer for long periods of time.

MALL

Mobile-assisted language learning relies on mobile technology (e.g., smartphones or tablets) to provide learners with opportunities to learn a second language; MALL is not limited to specific locations as is CALL (Loewen et al., 2019). Over the past 15 years, the use of mobile technology has significantly increased, and mobile-internet devices exceed the number of traditional desktop and laptop computers (Pegrum, 2014).

The advantages of MALL are related to its potential for spontaneous, informal, personalized, and global learning (Miangah & Nezarat, 2012). Learners may use their mobile phones anytime and anywhere (indoor or outdoor). Having a mobile phone is cost-effective (Pegrum, 2014). The platforms are attractive and colorful, and the activities and games engage and motivate learners to attain and maintain a high score. The game-based learning apps usually offer opportunities to collaborate with other learners around the world without limitations from geographical borders (Vemula & Rgukt, 2020). Moreover, MALL shifts the learning process from being teacher-led to student-led (Miangah & Nezarat, 2012).

Miangah and Nezarat (2012) argue that the most important advantages of mobile learning are its portability (i.e., learners "learn on the go") and its connectivity (i.e., the mobile device must be connected to and communicating with the learning website using a wireless network that enables short text messages). When it comes to mobile learning, games that were specifically designed to teach second language skills (i.e., vocabulary, pronunciation, grammar, listening, reading comprehension, and spelling) were found to be especially efficient because they offer an ideal platform for learning, are affordable and compact, and rely on mobile phones' built-in speakers and microphones (Miangah & Nezarat, 2012; Burston, 2015).

Loewen et al. (2019) enumerate the advantages of MALL: flexibility in time and location of study, continuity of study on different devices, easy accessibility of information, and adaptability to personal study habits. Learners, according to their research, can study anytime and anywhere, and their study materials are synced and available across devices.

Some disadvantages of MALL include software and hardware issues, reading difficulty on a small screen (especially for the visually impaired), data storage, limited use of multimedia, and accessibility in rural areas with poor network connection.

Duolingo

According to Torrente et al. (2010), mobile language learning apps are specifically designed as educational games (or digital game-based learning) to increase the user's motivation to learn. The use of interactive educational technological content has the potential to enhance the learning process, as it is based on gamification strategy (i.e., using game techniques, such as competition and scoring points) to encourage participation, engagement, and motivation. Gamified activities capture students' attention and keep them engaged and immersed in the learning experience.

In this study, I investigate the language learning app, Duolingo, which is based on gamifying principles, and explore the connections between students' motivation for learning Modern Hebrew and their experiences of learning Modern Hebrew on Duolingo.

Duolingo is a science-based, free language education platform created by Luis von Ahn and Severin Hacker in 2011. The app aims to provide personalized, second-language learning opportunities for learners worldwide. Designed as an educational game, Duolingo provides an immersive world that promotes learning, captures students' attention, and provides immediate feedback. Duolingo is a friendly, accessible, and free application that offers repeatable levels and extra activities for enhancing learning. Although most learners prefer to

use Duolingo on mobile devices, Duolingo is accessible on computers and mobile devices that use iOS and the Android and Windows operating systems. The learner's progress can be synced across different devices. Duolingo also offers features for collaboration and learners' interaction (Loewen et al.2019).

Duolingo divides its exercises and learning activities into small lessons, and it groups skills based on vocabulary and grammar. The lessons are focused on general everyday topics, such as greetings, trips, restaurants, people, and clothes. (Blanco & Cera, 2019). Munday (2016)found that, for a basic Spanish course, Duolingo offers a structure that contains 66 skills, 329 lessons, and 1571 words (Munday 2016).

Since 2015, Duolingo also offers a special platform for teachers called schools Duolingo (https://schools.duolingo.com/) that helps teachers adjust lessons to assist students who need
practice on a specific topic or with a precise skill. Via this platform, teachers may assignexercises of different skills and monitor students' progress.

Vesselinov and Grengo (2012) conducted a study to measure the effectiveness of Duolingo for Spanish learners. Students who used Duolingo demonstrated significant improvement in their Spanish language abilities. Moreover, they found that the main factor forhigher achievement was the learner's motivation: participants who used Duolingo for instrumental reasons (to prepare for travel to Spanish-speaking countries) had higher scores than participants who used the app out of personal interest (Vesselinov & Grengo, 2012).

Blanco and Cera (2019) conducted a study to analyze the pedagogical characteristics of the Duolingo app to measure its effectiveness for developing self-regulation for English learningand the possible benefits of its use. The study concluded that the implementation of the Duolingo dashboard could be utilized as an alternative method of supporting regular classes as its content is pedagogically appropriate for practicing a foreign language. The platform offers a variety of second language learning skills, though they found that oral and conversational skills should be more developed in this app. The Duolingo dashboard should be considered as a teaching practice tool as the application provides the teachers with essential feedback and work records of each student (Blanco & Cera, 2019).

Loewen et al. (2019) conducted a research to study the learning experiences and effectiveness of Duolingo on nine participants learning Turkish. They concluded that although Duolingo is effective in improving learner's knowledge, and the more time one spent on Duolingo the more they will learn, the app should be improved to include advanced levels of practice beyond a single sentence practice. Furthermore, they concluded that learning a secondlanguage on Duolingo should be in conjunction with more formal classroom settings in order tomaximize L2 learning (Loewen et al., 2019).

Brick and Cervi-Wilson (2019) conducted a research to measure the effectiveness of Duolingo on 182 participants at the Coventry University Institution Wide Language Program (IWLP), who used Duolingo outside the classrooms. The researcher collected data on students'achievements on the required formal assessment for their module. They also collected data from the Duolingo Schools platform, where students had earned XP points. The study found a correlation between the two, as students who obtained over 100 Duolingo XP points also achieved higher grades on the module's assessments. The study concluded that Duolingo is aneffective tool to utilize in conjunction with attending language learning classes.

Finally, Chwo at al. (2018) conducted a meta-analysis that included 213 papers and research articles related to Mobile Assisted Language Learning. They identified these recurring themes: access, motivation, curriculum, instructor role, authentic experiences, student- centered learning, gamification, induction training, and contextual learning. The researchers inthis study also identified three common weaknesses:

1. There were significant discrepancies between teachers' expectations of students'use of MALL devices and how much students actually used them.
2. There were concerns related to access, motivation, and curriculum that impacted students learning outcomes negatively.
3. Many of the MALL studies were short duration or had poor research design(Chwo et al., 2018).

Methods

Participants

The research presented in this paper explores students' motivations for learning Modern Hebrew through Duolingo and whether the app helps students fulfill their goals. The question of learner's goals and their motivation for learning Modern Hebrew is especially interesting because Hebrew is associated with Jewish identity, Jewish heritage, and Israeli culture and society.

Twenty-three learners of Modern Hebrew on Duolingo participated in this research. Of the participants, 10 were male, and 13 were female. The participant's ages ranged between 21 and 74 years old; 35% were in the 21–30 age group; 13% in the 31–40 age group; 22% in the 41–50 age group; 17% in the 51–60 age group; and 13% in the

61+ age group. Thirteen of the participants resided in the United States and Canada, three in Great Britain, two in Israel, two in Europe, two in Argentina, and one participant in Mexico. Thirteen participants identified English as their primary language; six identified Spanish as their primary language; two participants identified French; one identified their primary language as Russian and another as German.

Procedure

This study used the convenience sampling method. A post was placed on the pages of three Facebook groups and asked those who were using Duolingo to learn Hebrew whether they would participate in the study. I contacted, via Facebook private message, those who had responded to the post to schedule individual interviews. Each interview lasted between 15 and 45 minutes and was conducted by phone, Zoom video conference, or Facebook voice/video call.

This study employed a qualitative research design, and conclusions were formulated using the principle of grounded theory. Qualitative research is focused on understanding human experiences, things in "their natural settings," and the interpretation given by people to these phenomena (Guest et al., 2013).

The data was gathered through semi-structured interviews with open-ended questions with each of the 23 participants. All participants were interviewed once by phone or video conference. The interviews were transcribed by the researcher and were studied and analyzed as texts. The semi-structured interviews allowed for more in-depth responses, such as more expression of feelings, experience, and beliefs, and captured the experiences of the participants in their own words (Anderson, 2016; Creswell, 2008).

Data Analysis

An analysis of the data was conducted to answer the research questions—what motivates students to learn Modern Hebrew, and does learning Hebrew on Duolingo help students fulfill their goals? This question will be studied in accordance with the Israeli culture and Jewish identity aspects. The frequency that participants used Duolingo for learning Hebrew was also studied.

Twenty-one participants stated that they used Duolingo daily, and two use it weekly. The total number of days that participants used Duolingo for learning Hebrew ranges between 83 and 1440 days (about 6 years).

The inductive constant comparison data analysis procedure was applied in this study, in order to compare incidents from one interview to another and to form categories that included similarities in coding. The inductive constant comparison was also used to compare coded interviews. The overall goal of constant comparison in this study was to form abstract categories, eliminate redundancy, and develop an emergent theory. Data was collected from the interviews and content was converted into information, key concepts, and themes.

Findings and Discussion

This research analyzed the participant's perspectives on whether they achieved their goals for learning Hebrew through the Duolingo app. Participants were asked about their motivation for learning Hebrew, about the level of proficiency they would like to attain, and for their perspectives on the advantages and disadvantages of using Duolingo to achieve their goals. Participants were also asked whether they believed that learning Modern Hebrew via Duolingo helped them better understand Israeli culture and Jewish identity.

Motivation

Participants were asked why they were learning Modern Hebrew and what motivated them to do so. Participants' responses can be divided in to four main categories:

1. Communication with Hebrew speakers:
Twenty-two percent of participants wanted to communicate with family members, relatives, or friends who reside in Israel and speak Hebrew. Participants stated that, although their family members or friends who immigrated to Israel may be able to communicate in English to some extent, participants preferred to speak with their family and friends in their local-native language so to develop their relationships and better understand the lived experiences of their relatives. Participants also mentioned other key reasons, such as: "to improve my relationships with my niece and nephew and support their decision to immigrate to Israel, as I make the extra steps to learn their new language" (Participant 1); "to improve my relationships with my in-laws in Israel" (Participant 12); and "to show my respect toward my spouse who is fluent in Hebrew" (Participant 17).

2. Religious Motivations:

a.   Thirty percent of participants said they had religious reasons for learning Hebrew. Participants' reasons included growing up in a Jewish or Christian home and wanting to read the Torah (Participants 2, 4, 13, and 15), the Old Testament (Participants 11, 19, and 23), and prayers in their original language (Hebrew) while understanding their real meaning. Participants also mentioned their desire to read the "Torah signs," the Kabbalah (a Jewish mystical interpretation of the Bible) and the Bookof Zohar in their original language.

Participant 11 stated that they were worried that some of the vital content was "lost" when religious writings were translated into other languages like English. Therefore, to appreciate the deep meaning of the texts, they wanted to learn its original language, Hebrew.

Although the Bible was written in Biblical Hebrew and not Modern Hebrew, some participants stated that after learning Modern Hebrew and understanding its vocabulary, they felt closer to the original writings and more emotionally involved in the reading because of its familiarity.

Now they felt they understood how to pronounce words correctly and had a better concept of sentences structure. Another participant (participant 4) mentioned the "word-families" (i.e., words with the same three-letter roots) in Hebrew that make biblical words sound familiar.

3. Cultural Interests:

a.   Seventeen percent of participants stated that their main reason for learning Modern Hebrew was to expand their knowledge particularly about Israeli music, culture, and literature. Participants also mentioned being able to consume content that is not available in English. Participants mentioned their desires to read modern Israeli literature, which is often written in Hebrew, by famous poets and authors, such as Yehuda Amichai and Amos Oz (Participant 20), and their desires to express themselves and their personality in Hebrew writing (participant 18). Participants also expressed their desires to watch original movies and Israeli TV series, such as *Shtisel* and *Srugim*, in their native language without the use of subtitles. Participants mentioned their desire to listen to podcasts and interviews with artists conducted in Hebrew and to understand the main concepts discussed (participant 3).

Participants stated that learning Hebrew was essential to strengthen their Jewish identity and ties with the broader community. A participant said: "As a parent, in order for me to pass on the Jewish heritage down to my children, I feel that it's essential to be able to speak and understand the holy language (participant 20)." Participant 18 stated that, when he attended a Jewish day school, he did not take advantage of the opportunities to learn Hebrew and now regrets those missed opportunities. He felt that learning Hebrew was essential for his identity to be complete and to further his Jewish education.

4. Integration—"Feel Like Israelis":

Thirty percent of participants stated their main reason for learning Hebrew was their desire to travel to Israel and speak the language daily. Participants stated that they learned Hebrew to spend some time in Israel and feel as "Israeli"—to find their way around without being dependent on a translator, to use Hebrew for daily activities, have small talk or short conversations in Hebrew, and to understand and be understood in Hebrew. A few participants stated that they had already relocated to Israel because of marriages (participant 5) or to advance their career (participant 9) and wanted to learn more Hebrew to integrate into Israeli society better; both participants planned to raise their children as Israelis. They desired to communicate with their friends, neighbors, and others only in Hebrew.

Participants also mentioned that they were motivated to learn Modern Hebrew because of their love for learning languages, the challenges of learning a new language, and the desire to keep their brain stimulated.

While Gardner's (1985; 2001) dichotomy between integrative and instrumental motivations for learning a second language can explain most of the research findings, it cannot explain the religious motivation that participants expressed. Integrative motivation may explain participants' motivation for learning Hebrew for travel purposes, their desires to integrate into the Israeli society ("feel like an Israeli"), their desires to communicate in Hebrew with relatives and friends, and their desires to comprehend Israeli culture and read literary works, scripts, and text in its original language. Yet, participants' religious motivations do not fit into this dichotomy model.

Villeneuve (2017) offers an explanation for why Catholic priests learn Hebrew: to be able to read the original Sacred Scriptures. According to Villeneuve, the Church claims that acquiring knowledge of the biblical languages is a "foundational prerequisite to gain an understanding of the Sacred Scriptures" (2017, p. 2). Even more so, Villeneuve suggests that Jewish mystics consider the Hebrew letters to be a sort of "Divine DNA," the names of the letters, pictorial form, and numerical equivalent are ordained by God, "and when studied could reveal secrets of the Cosmos" (2017, p. 5). In addition, Villeneuve states that "reading a translation of the Bible is like "listening to God through an interpreter, rather than hearing directly because every language has nuances,

expressions, idioms and ideas that are difficult or impossible to translate accurately (2017, p. 7). Villeneuve concludes that Hebrew opens a new door to the mystery of God's ongoing wisdom in its original words and concepts, which is essential knowledge for every Catholic seminaries and theological institutes.

Prior Exposure to and Desired Proficiency in Hebrew

Participants were asked whether they had any prior exposure to Modern Hebrew and what level of proficiency they hoped to gain by using the Duolingo app. Eight participants had no prior exposure to learning Hebrew before using Duolingo. Prior to using Duolingo, 10 participants had very limited knowledge of Hebrew, acquired by attending a Hebrew school or by using textbooks or other learning programs for short periods of time. Three participants had advanced knowledge of Hebrew from attending intensive Ulpan classes or Jewish day school.

Table 1 presents participants' desired proficiency goals for learning Modern Hebrew on Duolingo. The main goal for all but three participants was to acquire sufficient knowledge in Hebrew to have conversations in Modern Hebrew over the phone or in person. Fourteen participants stated that they would like to read Modern Hebrew literary texts and newspapers and to understand song lyrics, advertisements, and the like.

Of those participants who had set goals in writing proficiency, many wanted to correspond in Hebrew and be able to write and express their personality in Hebrew. Participants who set goals for listening and comprehension purposes wanted to understand Hebrew in daily contexts, such as understanding movies, Israeli TV shows, radio broadcasts, podcasts, interviews with artists, and even parents-teacher's conferences.

Participants	Conversational	Reading	Writing	Listen/ comprehend
Participant 1	+	+	+	+
Participant 2		+	+	
Participant 3	+			+
Participant 4	+	+		+
Participant 5	+			
Participant 6	+			
Participant 7	+			
Participant 8	+	+		
Participant 9	+		+	
Participant 10	+		+	
Participant 11	+	+		+
Participant 12	+	+	+	+
Participant 13	+	+	+	
Participant 14	+			+
Participant 15	+	+	+	+
Participant 16		+	+	
Participant 17	+			
Participant 18	+		+	
Participant 19	+	+	+	
Participant 20	+	+	+	+
Participant 21	+	+		
Participant 22	+	+		
Participant 23		+	+	

Table 1: *Participants' Desired Proficiency Goals for Learning Modern Hebrew on Duolingo*

Advantages and Disadvantages of Learning Hebrew on Duolingo

Participants were asked about their perceptions of the advantages and disadvantages of using Duolingo for learning Modern Hebrew. A few themes emerged:

1. **Visuality:** Duolingo is an engaging platform. It is colorful, attractive, and illustrated; it uses sounds and friendly characters. The platform encourages and motivates participants to keep progressing and learning. Duolingo is gamified (i.e., uses the principles of interactive games) to attract users' attention. Duolingo users achieve points, move up in leagues, keep streaks, receive awards, and so forth.

2. **Accessibility and organization:** participants mentioned that the platform is accessible and synced between various devices. Users may access Duolingo from desktop computers and mobile devices, and they can also continue their learning "on the go." Participants mentioned the advantage of the Duolingo Plus subscription, which enables them to download lessons in advance without the need of a Wi-Fi connection. Some participants stated they use Duolingo when commuting to work or traveling out of state. Participants mentioned that the main advantage for

them is that they can access the application according to their needs and learning pace. Others mentioned that Duolingo is a free app and there is no need to use a keyboard or computer mouse; they could also practice pronunciation with their phone's built-in microphones. Participants stated, however, that pronunciation function is "not sensitive" and that "you can forge your way out even without pronouncing the words correctly." Participants also noted that learning topics are well organized, thematic, and include vocabulary words that are applicable to daily life.

3.   **Hebrew print/script letters:** Hebrew speakers use cursive or script letters for writing and print letters for reading or typing on the computer. Participants stated that one major disadvantage of Duolingo is its sole use of print letters.

4.   **Hebrew grammar:** All participants stated that Duolingo is an excellent platform to acquire new vocabulary. The program is structured to introduce vocabulary words in an interesting and engaging way, and new words can be repeated as many times as needed. However, when it comes to Hebrew grammar, the program only offers very limited syntactical explanations, which makes it extremely difficult for users to understand the grammatical structure of sentences, how to conjugate verbs, and the correct correlation between nouns, prefixes, syntax, tenses, and more.

Participants mentioned the lack of appropriate feedback. One participant stated that "sometimes you get the correct answer, but you don't understand why, what's the rules or the rationale behind it." Participants also mentioned that if a user is really interested in understanding Hebrew grammar, they must be motivated and curious enough to search for the rules and explanations on Google or use other means to seek out answers.

Participants mentioned errors related to translating sentences both in Hebrew and in English and errors related to sentence structure. Participants also mentioned that the program assumes a user has prior knowledge of the Hebrew letters. A few participants mentioned that in other languages such as French, German and Spanish, Duolingo offers listening comprehension exercises, a capability that is lacking from the app's Hebrew course.

Overall, participants said that the gamified methods kept their motivation high and encouraged them to continue learning. The daily reminders and the motivational messages that the program automatically sends helped them attain their goals; they also appreciated the small, bite-sized lessons that did not consume too much of their time. The accessibility and mobility options kept their commitment to learning going. Participants expressed the hope that the Hebrew program would be revised to include more grammar explanations and error corrections.

Language and Culture

Participants were asked if learning the Modern Hebrew language helped them better understand the Jewish people or Israeli culture. Participants stated that, although learning Hebrew on Duolingo does not improve their understanding of or connection to Jewish identity or Jewish history, it does raise their curiosity to learn about and deepen their knowledge of Israeli culture. Participants stated that Duolingo fostered their interest to learn more about aspects of Israeli culture, such as music and literature. The platform does so by introducing specific terms and related commonly used concepts in Hebrew that represent broader cultural perspectives. For example, a common phrase that Duolingo uses is: "Let's play Matkot." Matkot is a popular padel ball game widely played in Israel and is considered the unofficial Israeli sport. The term itself "matkot" is found in many Israeli artworks and symbolizes the young city of Tel- Aviv from the 1920s.

Duolingo also presents Israeli popular food, such as hummus, falafel, and pita bread, and original slang expressions (e.g., Al Ha'esh, the Israeli concept of BBQ); it includes names of holidays and their symbols and traditional customs (e.g., eat matza during Passover Seder, eat dairy products during Shavuot and how Shavuot commemorates God's giving the Torah).

Moreover, Duolingo refers to Israeli currency (shekels), uses correct political concepts (e.g., "in Israel there are both a prime minister and a president"), quotes of famous Israeli songs, and names of cities and locations in Israel as well as related cultural concepts.

Participants mentioned that, because some phrases cannot be translated to English and can only be understood in their original context, they appreciate that Duolingo has made an effort to preserve the original concepts and present them in their original Israeli cultural context without reinforcing them as different from American concepts. That is, Duolingo does not translate "Matkot" as "beach-tennis" or "Kadur-Regel" as "soccer or football."

Limitations

This study employs a qualitative, grounded theory design and, hence, has limitations inherent to such methodology. Collecting the data through semi-structured interviews with open-ended questions not only allows participants to self-reflect on their knowledge and experiences, but it also relies on participants' honesty and willingness to participate. Moreover, this study is narrow in scope with a small sample size and participants who are familiar with the technology. The study included only 23 participants who responded to Facebook posts. Hebrew learners who are

not on Facebook did not participate because they had not seen the post.

Although the study included participants from various geographical locations (inside and outside North America), a larger study would benefit by including more diverse perspectives, especially from learners who were not accustomed to learning on technological platforms and who had adopted Duolingo as their main method for learning Hebrew. A possible extension of the research on language learning that compares various learners' experiences with different languages could shed more light on the correlations between learning a language and learning about its relevant cultural aspects through Duolingo.

Further research may compare acquisition of Hebrew language skills studied through Duolingo versus active participation in a traditional class setting led by a Hebrew teacher. Will the learner's level of motivation regarding learning Hebrew be different from their levels of motivation while learning on Duolingo, and will the learner be more exposed to learning Israeli culture or strengthening the Jewish identity in an active class compared to learning solely through Duolingo?

Conclusions

The innovative use of MALL and CALL technology has created new opportunities for learning foreign languages outside of the traditional classroom settings. Duolingo, a free and accessible software, allows learners of foreign languages to access the application daily, from various devices that can be synched. Its lessons are small, free, visually attractive, and engaging.

The program, based on the gamified method, attracts and motivates learners of Modern Hebrew to progress through individual lessons at their own pace and according to their personal goals, accumulate points and knowledge, receive immediate feedback, practice their pronunciation, and learn and review vocabulary words and sentence structures according to the learner's wishes and abilities.

The Duolingo app offers a wide range of Hebrew-customized themes related to Israeli culture and its symbols, Jewish and national holidays, and daily life in Israel.

This study explored the advantages and disadvantages of the Duolingo app for learners of Hebrew, their motivation for learning Modern Hebrew on Duolingo, and how learning Hebrew facilitated their understanding of the Jewish identity and the Israeli culture.

This research identified four main themes of Hebrew learners' motivation:

- communications with family, friends, and relatives who reside in Israel or speaks Hebrew,
- reading the Torah or Old Testament in its original language without losing some content during the translation process,
- cultural interests such as reading Israeli literature in its original language, and
- integration or the desire to "feel like an Israeli" and find their way around without being dependent on a translator.

This research also found that most participants had the goals of becoming proficient enough in Modern Hebrew to have conversations over the phone or in person, be able to read Modern Hebrew literary texts, correspond in Hebrew, understand song lyrics, and understand Hebrew in daily contexts.

Participants of this research stated that although Duolingo did not help them better understand the Jewish people or Israeli culture, but it did spur their curiosity to learn about and deepen their knowledge of Israeli culture music and literature by introducing specific terms and commonly used concepts in Hebrew that represent broader cultural perspectives. While participants stated there were multiple advantages of Duolingo, they also mentioned concerns such as using print letters only, relying on learners' previous knowledge of letters, and the lack of explanations of grammar and syntax, grammar rules, sentence's structure, verbs conjugation, and the correct correlation between nouns, prefixes, syntax, tenses, and more.

The Duolingo app has a few disadvantages and future development of the application is recommended to include additional possible pedagogical methods for learning a second language such as: video and voice chat features, links to a knowledge center, and professional-academic support that is available at all times.

Further research should compare the perceptions of Hebrew learners on Duolingo with the perceptions of users who utilize other apps. Additionally, a future study could focus on how users learn the cultural context of each language through Duolingo. Finally, future research should compare the motivations of users who are technologically savvy and those who are not.

Works Citation

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