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NON-LITERATE ADULT IMMIGRANTS FROM ETHIOPIA IN ISRAEL LEARNING TO READ AND WRITE IN A SECOND LANGUAGE[1]

Elite Olshtain, Michal Schleifer, Eli Ziv, Pnina Golan-Cook, Keith Goldstein, Sara Rubinstein and Bella Kotik-Friedgut
University of Jerusalem

Abstract

The present article describes an innovative program for second-language instruction targeting adult immigrants from Ethiopia in Israel, who have limited first language literacy. This program is based on theory and empirical research in the areas of brain studies, literacy and second language instruction, as they pertain to the case of semi-literate adults in the context of migration. The implementation and evaluation of this program in the framework of immigrant language classes are described here, in an attempt to gain a better understanding of the challenges facing program developers, teachers and learners in the field.

Keywords: second language, adult literacy, Ethiopian, illiterate immigrant

1. Ethiopian immigrants in Israel

Second language acquisition is a primary challenge faced by all migrants worldwide, one that is more acute for adults and especially for those who have limited literacy in their first language (Schöneberger, Van de Craats, & Kurvers 2011).The present study targets Jewish adult immigrants to Israel from Ethiopia who have limited or no written literacy in any language. Most of them lived in rural villages with poor written landscape and leaned on traditional oral culture (Ben Ezer 1992; Levin-Rozalis 2000). They practiced biblical Judaism, but had very little knowledge about the Israeli culture and lifestyle. They are returnees to their country of heritage and are driven by religious and ethnic ideology. In Israel, they often reunite with their relatives and join the larger community of immigrants. Due to the stress of immigration, and the extensive differences between the rural culture of their country of origin and that of the host modern society, many Ethiopian immigrants suffer from a cultural shock. Consequently, many of the elderly members of this community failed to assimilate in the

Israeli society and encountered many difficulties especially with literacy acquisition.

During their first two years in Israel, the immigrants usually live in "absorption centers" financed by the state. These centers often constitute an ethnic enclave, but at the same time provide a variety of support systems - one of which is the Hebrew Language Ulpan (the language school for immigrants). They are provided with basic living conditions and supplies for the first twelve months, so as to enable them to adjust to the new country and to devote most of their time to learning the language. Unfortunately, since they are not literate, this period of study is insufficient. Reading and writing are important skills for survival in a literate environment, but these learners, having no knowledge of the new language, first need to acquire some basic oral skills. Non-literate adults usually achieve only limited communication in Hebrew by the end of the course and most of them will need to continue to focus on reading and writing in Hebrew after moving to their permanent residence.

2. The ULPAN – Acquiring the target language

The Hebrew Language Ulpan is a governmental intensive Hebrew language school for immigrants from diverse countries around the world. The Ulpan structure and curriculum are adjusted to the needs of the different target populations. As such, immigrants from Ethiopia to Israel receive an intensive ten month course rather than the regular, five month course developed for other immigrants. The objectives of the course for immigrants from Ethiopia are two-fold: Hebrew language acquisition and the study of Judaism. At first, there is an emphasis on survival skills and everyday skills, taught in Amharic, followed by basic Hebrew instruction, preparing the immigrants for life in a modern literate environment. Likewise, subject matter relating to Judaism, civics, heritage studies, etc. is initially taught in Amharic and later Hebrew is introduced as the language of instruction.

The challenge for nonliterate adults learning to read and write for the first time in a new and unfamiliar language is great. As such, The Ulpan curriculum, especially designed for the Ethiopian community, focuses both on the development of basic communication skills in Hebrew and the introduction to cultural and social concepts needed for the acquisition of the language (Rubinstein 2014; Ulpan Curriculum for newcomers from Ethiopia 1999, 2014). Unfortunately, in spite of the special curriculum and language materials, most of the adult Ethiopian immigrants remain unable to read and write. Consequently, a revision of the existing model of literacy teaching for this population was

necessary and an alternative communicative-multicultural-neuropsychological model was developed for promoting literacy and vocational skills (Kotik-Friedgut, Schleifer, Golan-Cook, & Goldstein 2014).

Following are some neurological factors that impede successful language learning and have to be dealt with in order to achieve progress in literacy acquisition.

3. Brain mechanisms of reading

Without understanding "brain architecture" we cannot approach the issue of adult illiteracy (Abadzi 2005). Acquisition of literacy requires the development of a new functional system, which creates and strengthens connections between brain zones responsible for visual, auditory and kinesthetic operations. All of this is possible thanks to the human feature of lifelong plasticity of the brain. Although plasticity is much higher in childhood, the adult brain is also capable of change. At the same time, the case of the 'illiterate brain' is unique, and should be given special attention when planning second language programs which include learning to read and write in the new language, without written literacy in the mother tongue.

When approaching the acquisition of literacy, we usually distinguish between the mechanics of reading, the early stage of decoding, and reading for comprehension - when decoding has been mastered and the readers gain meaning, information and knowledge from reading. For literate adults who have acquired all the necessary skills for reading in a first language, the acquisition of decoding skills when moving from one alphabetic system to another is a relatively easy task. For illiterate adults, on the other hand, decoding of the written text is a new experience and we need to find ways in which they can develop this skill, while in the process of acquiring a new language.

Castro-Caldas and colleagues (1998) claim that learning the written form of language (orthography) interacts with the function of oral language. For that reason, it is important to start any reading literacy program by focusing on the development of oral language skills in the language being taught. Perfetti (2014) supports this stance in emphasizing that learners need to have a grasp of the phonemic system in order to develop phonemic awareness needed for reading. Dehaene et al. (2010) found that changes occur in adult brain processing in response to speech and writing, even when literacy was acquired in adulthood, indicating that adult education can profoundly refine cortical organization.

The examination of the perceptual and language skills of non-literate and late-literate adults of Ethiopian origin (Stoppelman et al. 2013) shows that in the language domain, late-literates outperformed illiterates on most phonological, verbal span and naming measures, excluding only naming performance in Amharic and performance on the phoneme isolation task.

Poor performance of illiterate subjects was also observed by Ardila, Ostrosky, and Mendoza (2000) on several neuropsychological tests. These observations prompted their development of a method for learning to read, called NEUROALFA. This method seeks to reinforce these particular undeveloped abilities during the process of learning to read. Neuroalfa has proven to be significantly more effective than traditional methods in teaching illiterate Mexican adults (Ostrosky, Ardila, & Rosselli 1999). These findings show that in order to enhance the phonological awareness of illiterate adults in the framework of second language instruction, learners need practice first in their mother tongue (L1), before moving to the second language (L2). This includes, for example: phoneme discrimination, phonemic fluency, phonological similarity, decomposition of words to sounds-syllables and phonemes and grouping of words with common phonemes. Moreover, these findings revealed the importance of reinforcing visual perception and cognitive operations related to reading and writing, including special activities aimed at enhancing visual letter discrimination.

Finally, research shows that in the case of illiterate adults who are learning to read for the first time, much effort and time may be necessary to develop cortical sensitivity to written words (for a comprehensive review of functional and anatomic differences between literate and illiterate learners, see Ardila et al. 2010). As a result, before starting to teach the letters our program incorporated activities aimed at developing sensitivity to print using the learners' L1-Amharic. Such activities included discussions addressing the purpose of printing, the comparison between drawing and writing, and the definition of concepts such as sounds, letters, syllables and words.

All the above abilities are well connected to the process of learning to read and need to be strengthened in adults who have never learned to read and write during their childhood.

4. **The "Orit" Program[2]**

4.1. Principles

The "Orit" program was developed as part of the process of developing the communicative-multicultural-neuropsychological model for teaching Hebrew literacy to non-literate Ethiopian immigrants. Therefore, it combines the long-standing experience gained by Ulpan educators with the latest ideas and studies in second language teaching and the role of brain plasticity in literacy development, as described above.

   Several key principles underlie the program:

1. In order to ease the cultural and social adjustments of the immigrants to the new host country, the program tries to relate to the original culture. Culturally adjusted learning materials, teaching-learning-evaluating strategies and discourse patterns can reduce frustration and increase motivation among learners of a second language who suffer from low learning image (Dörnyei 2014; Gardner & Lambert 1972; Gardner & Tremblay 1994; Kotik-Friedgut 2003). For example, we rely on the immigrants' rich tradition of oral knowledge and their prolific use of proverbs, recited often at the start of a narrative to enhance their high order thinking skills. Their use of proverbs is their unique way of not explicitly expressing main ideas. By doing so they enable their listeners to infer the main idea from the context of the narrative- an important skill for language comprehension. The proverbs are usually aimed at developing persistence, diligence and restraint. We use them in our classes in order to connect with the learner and tap into his previous knowledge, as well as to promote learner motivation to continue their studies in spite of their many difficulties. Moreover, the use of culturally familiar discourse patterns strengthens the development of high-order thinking skills (Schleifer 2014).

2. In many L2 adult language classes, L1 is considered as a valuable educational tool. The use of the first language has many benefits, especially with those who rarely speak in class (Duff & Polio, 1990), from social and psychological perspective, shown by an increased feeling of self-efficacy, motivation and cultural pride (The Center for Literacy of Quebec 2008; Condelli & Spruck Wrigley 2006) to cognitive and linguistic levels, exhibited by better language achievements and high order thinking skills (Kim & Elder 2008). The Amharic language is used in order to ensure that learners understand the instructions and the content of each session, discuss the target culture, motivate the learners to use L2, explain grammar, comment on the learners'

process of learning, additional knowledge and on their achievements in every session. (See Figure 1.)

Figure 1: T*he presenters of "Orit"*

3. In order to provide learners with a feeling that they can cope with survival issues, the program focuses on basic language skills related to the immediate environment. As such, a limited vocabulary, which consists of
   350 items, was chosen on the basis of frequency and survival-oriented content. They listen to and role-play dialogues that are relevant to their daily life.

4. In order to enhance letter-recognition and in preparation for reading, learners are given many opportunities to write.

5. The program is blended in nature, including web-based support with focus on letter shapes on the screen and learners attention to accompanying sounds. The program therefore, consists of a combination of digital and printed materials, computer software, printed booklets and a teacher guide. (See Figure 2.)

6. In the ideal situation, there are two teachers teaching as a team; a native speaker of Amharic who is also fluent in Hebrew and a professional, adult education teacher who is a native Hebrew speaker. Together they make sure that learners have a chance to hear things both in their native Amharic and in Hebrew, spoken by a native Hebrew speaker.
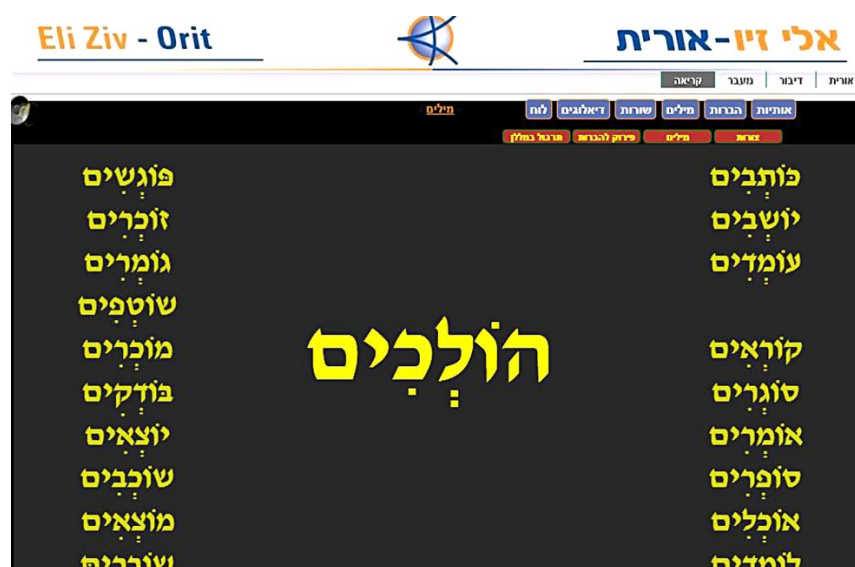
Figure 2: *Word recognition in "Orit"*

4.2. Structure of the program

The program starts with a preliminary phase, mostly in Amharic, which aims at developing print sensitivity, phonological awareness and visual perception of shapes and figures. Visual perception was strengthened using pictures that demand simultaneous synthesis (pictures by Octavio Ocampo carefully selected for cultural appropriateness) and visual thinking (pictures from Akhutina & Pylaeva 2012), as well as copying of two-dimensional figures and practicing sequences of shapes.

Some basic vocabulary items and useful expressions in Hebrew are taught in order to establish an oral basis of the second language upon which reading and writing skills can be developed.

The early phase of the program focuses on video clips, presented on a full screen in class, representing daily, authentic, interaction among Hebrew speakers from Ethiopian background. These are natural dialogues enacted by characters with whom the learners can identify since they look, speak and behave in a manner similar to their own. Even the Amharic accent helps them feel comfortable trying to imitate these dialogues. Furthermore, these dialogues are "survival-related" and highly relevant to newly arrived immigrants:

shopping at the grocery, communicating with a physician, renting an apartment, looking for a job, etc.

Each video-clip is presented first in Amharic and then in Hebrew. The learners are required to listen carefully and only after a few presentations to repeat the dialogues in Hebrew and answer simple questions. The language content of these dialogues will foster the initial knowledge in Hebrew before they start the mechanics of reading (Perfetti, 2014). The use of Amharic is gradually reduced in order to provide learners with the opportunity to feel success in the new language and gain further motivation.

In the second phase of the program, most of the focus is directed towards the mechanics of reading: letter-recognition, letter discrimination, and syllable recognition and sound-to-letter correspondence. The computer screen has a vital role in training for visual perception and phonological awareness at the same time. Letters appear on the screen in different locations, they are moved across the screen, they vary in size and color as well as in time and rate of appearance. The teacher has control of these activities and can adjust them to the interest of the learners. Each letter is presented with its sound and name. Learners are asked to write the letters in the air with their right hand, followed by using the left hand and finally using both hands. This seems important since these adults have never experienced writing before.

It seems that without such an effective use of the screen and of the simultaneous sound-letter correspondence, it takes much longer for illiterate adults to acquire these early steps of the mechanics of reading. Although other programs often use the best conventional printed material and flash cards or other such teaching aids, nothing can be as powerful as the digital component. It often takes three months and more to acquire the early skills while learners find it difficult to link sounds to written letters (Gombert 1994; Peleg 2000). We believe that the "Orit" software presents more interesting activities and more efficient embedding into short and long-term memory.

In the third phase the emphasis moves from letters and syllables to whole words. In this phase words appear on the screen in different locations and colors. In the fourth phase the focus moves on to whole sentences and eventually to dialogues and short texts, all kept within the 350 words intended for this course of study. First, they read the dialogues, which they used to practice in the initial part of the course, and then they begin to read unfamiliar texts.

All learners have notebooks in which they write from the start. First, they write letters in order to improve letter-recognition, and then they write words and answer simple questions.

Each lesson in the "Orit" program ends in a reflective feedback session, where learners recount (in Amharic) their achievements as well as the difficulties they

encountered during the lesson. They also express their desires with respect to things they wish to learn in future lessons.

4.3. "Orit" program evaluation

Methodology

Research goal
The "'Orit'" program was accompanied by ongoing, formative evaluation research, aimed at assessment of both its implementation process and its expected outcomes with regard to learners: improvement of cognitive and language proficiency skills, more positive attitudes towards Hebrew, and improvement in perceived Hebrew language proficiency after completion of the Ulpan (Golan-Cook, & Goldstein 2012).

Participants
Our sample included 63 learners in the program classes and 61 learners in comparison classes, who attended three Ulpan classes in three different places/absorption centers in Israel. The average age of learners was approximately 34 and 32 for the program and comparison groups respectively. Gender distributions were somewhat balanced in both groups: in comparison classes 51% were female participants, as compared with 45% in the program group. Length of residence in Israel was also similar for both groups, whose participants had arrived in Israel about two years prior to commencement of the program. The duration of the program was between 160 and 190 hours. The average amount of time spent formally studying Hebrew was also the same for both groups of learners. Finally, Literacy Levels of both groups of learners were similarly low, as most had no formal schooling in Ethiopia and were illiterate in Amharic. Both groups were sufficiently similar on relevant demographic criteria to measure the comparative achievements of the groups, thus allowing us to test the effects of the program. 71% of the program group and 64% of the comparison group participated in the post-survey, our tool for measuring achievement. While full research participation of the program group was higher, the differences between the groups were not significant and did not prevent an unbiased comparison.

   In both groups native Amharic and Hebrew speaking Ulpan teachers presented the learning materials in cooperation with native Hebrew speaking Ulpan teachers. Teachers' training in the program classes consisted of a 28 hours course, and on-line guidance via e-mails, phone calls and a teachers' web site. In

addition, two meetings with the developers and supervisors of the program were held in each of the research classes.

Instruments

Program implementation was monitored and evaluated through on- going interviews with teachers, Ulpan principals and accompanying staff; intermittent observations of the program in progress; and teacher feedback questionnaires administered to teachers in both program and comparison classes at the end of the Ulpan program. These open-ended questionnaires addressed their experiences with program implementation, the materials and methods used in both the intervention programs and the regular Ulpan and student responses to these innovations. An updated report on drop-out rates was also obtained.

Program outcomes were measured by a series of tests and attitude questionnaires. The tests were administrated prior to and after implementation of the "Orit" program, assessing learners' progress with respect to cognitive and literacy skills which support reading acquisition and targeted in the program. These tests were especially designed for this project and consisted of a battery of five components: word production from pictures (9 items), sentence production from pictures (4 items), letter recognition (28 items), reading familiar words (9 items) and reading unfamiliar words (9 items).

Attitude questionnaires were administered individually by Amharic – speaking teachers in an interview conducted at the end of the intervention, providing feedback on learners' perceptions of the benefits of the two programs and of their progress in Hebrew language acquisition.

Data analysis

Internal monitoring of changes in learners' language proficiency was carried out through analysis of test scores before and after program implementation. Students' test scores at the beginning of the program (pre-test) and at the end of the program (post-test) were calculated based on an average (mean) score standardized to a scale of 0 to 10. An analysis of variance (ANOVA) was carried out on "gain scores" (the difference between post-test and pre-test scores) for learners participating in the experimental program group as compared to those enrolled in the regular classes (the comparison group). An F-test was conducted to examine whether there was a significant "difference score" (the difference in gain scores between the program group and the comparison group). In view of slight differences in sample sizes, we did not use a pooled sample. Statistics were computed using the statistics program SAS. Content analysis was applied to qualitative data gathered through interviews and observations

Findings

Gain scores

Changes in learners' language proficiency, as assessed through analysis of 'gain scores' in proficiency tests administered before and after program implementation are presented in Table 1.

Overall, the gain scores for the program group (D=.28) were significantly higher than those of the comparison group (D=.10), indicating an overall program effect (p<.0001). This improvement was especially reflected in the areas of word and sentence production from pictures, as well as letter recognition.

Table 1: *Pretest and gain scores of the tests assessing the effect of the '"Orit"' Intervention*

Language Skills tested: Mean (SD)	Word production from pictures	Sentence production from pictures	Letter recognition	Reading familiar words	Reading un-familiar words	Overall Scores
Pretest score program Group (N=50)	4.68 (2.36)	7.56 (4.2)	23.3 (18.7)	2.12 (3.22)	1.62 (3.01)	40.12 (28.12)
Pretest score comparison group (N=41)	5.78 (2.29)	7.73 (4.36)	25.8 (19.83)	3.55 (3.73)	2.78 (3.58)	45.68 (30.52)
Gain scores program group (N=45)	2.90 (2.27)	5.02 (4.26)	16.64 (12.36)	1.89 (2.23)	1.13 (2.29)	27.97 (15.84)
Gain scores comparison group (N=39)	1.75 (1.59)	2.15 (3.34)	3.62 (9.30)	1.26 (3.01)	0.92 (2.86)	10.39 (14.44)
Significance of gain Scores	$F=7.32$, $p=0.008$	$F=6.75$, $p=0.01$	$F=30.81$ $p=0.0001$	$F=1.27$, $p=0.26$	$F=.14$, $p=0.71$	$F=30.44$ $p=0.0001$

Although no significant difference scores were found between gain scores for the two groups in the areas of reading familiar and unfamiliar words, initial gaps between the two groups, which favored the comparison group in the pretest, were significantly reduced after the intervention. It should be noted that

students in Regular (comparison) Ulpan classes also improved, albeit somewhat more moderately, in all the areas tested. Ongoing testing of further replications of this program are necessary in order to obtain more conclusive evidence of program effect, but initial results seen here may be indicative of a potentially effective program. It is the "soft" data however, in the form of teacher and learner feedback, as well as data regarding learner drop-out rates, which provided rich and valuable information with respect to program outcomes and the process of implementation.

Learners' language attitudes and perceptions of improvement in language proficiency
Survey data gathered from individual interviews with 43 learners in program classes and 30 learners in comparison classes, in which they were asked to relate to several statements addressing language attitudes and perceptions of language proficiency after having completed the Ulpan program, reveal the following:

Differences in mean responses between the two groups (on a scale ranging between 1-4) seem to be more apparent with respect to reports of improved language proficiency after completing Ulpan and tend to favor the program group. These differences were statistically significant for the following statements: I can now read newspaper headlines in Hebrew (Program=2.36, Comparison=1.92, D=0.43); ask someone on the street for directions (Program=1.86, Comparison=1.43, D= 0.44); fill in a personal questionnaire about myself (Program=2.17, Comparison=1.57, D=0.60); and interview for a job (Program=1.94, Comparison=1.49, D=0.46). These reports reflect the beginnings of a renewed sense of self-efficacy may serve as a basis for heightened feelings of self-worth. These results coincide with the effect of motivation on literacy acquisition.

Teachers' feedback
Open-ended questionnaires completed by teachers of both the program and comparison classes, relating to various aspects of the programs they taught, revealed as follows:

Overall, teachers experienced similar challenges in terms of their students' lack of previous experience in the written code (in their mother tongue) and limited cognitive preparatory skills, which facilitate reading acquisition. Moreover, finding suitable learning materials and teaching methodologies for the level of their students was reported to be a constant challenge.

Teachers in the program classes reported that the innovative methods and materials introduced to them by the "Orit" program were welcomed. The innovativeness and structure of "Orit"'s digital program was seen as a potentially strong addition to the teaching/ learning process. At the same time,

technical difficulties, often associated with the technological infrastructure in place, were also reported to occasionally interfere with the implementation of "Orit"'s digital program - a challenge characteristic of technologically based educational programs.

Although native Amharic speaking teachers taught both in the program classes and in the comparison classes, those who taught in the program classes reported feeling a greater sense of professional self-esteem and self-confidence which contributed to their absorption to the Israeli society. This may be due to their being regarded not as mere translators, but rather as professionals who develop language and cognitive abilities.

With regard to student responses, teachers generally reported high levels of learner cooperation in the learning process in both program and comparison classes.

Teachers participating in the "Orit" program reported that some students initially voiced concerns that the materials and methods used were unrelated to language learning and/or were different to those used in other classes. Over time, however, these students exhibited high levels of engagement and cooperation during the learning process.

Student responses to the use of technology were mixed; ranging from immediate enthusiasm for the digital presentation, to some resistance towards this innovative, unfamiliar methodology. The diversity in reported student responses may have been partially due to their demographic diversity (e.g., in terms of gender, age, level of language proficiency) or to the different contexts in which the program was implemented.

Class attendance and drop-out rates
One of the prevalent issues challenging program planners for this target learner group is that of regular class attendance and perseverance in the program. As previously noted, difficulties facing the migrant and his "openness" to attending regular lessons during initial stages of migration are well known in the migration literature. In the case of the adult migrants from Ethiopia in Israel, low class attendance and high drop-out rates are prevalent.

In the current case, class attendance was similarly inconsistent across the board in both program and comparison classes. Female learners were often burdened with child-caring duties and illness in the family. However, drop-out rates, were significantly higher in comparison classes (some 31% in the regular Ulpan classes as opposed to about 11.5% in program classes), with similar reasons for dropping out being cited across the board-chronic illness, birth of children, and following up on job opportunities. Although Ulpan principals encouraged program learners to persevere, not to miss classes and to take

advantage of the unique program being offered them. This outcome is seen as noteworthy for program implementers and is in keeping with teacher reports regarding the high motivation and enthusiastic reception of the program by most learners, and their positive self-determination to acquire reading and writing (Comings 2007).

5.   Conclusions and future directions

The "Orit" program seems to improve literacy, self-efficacy and motivation, even in comparison to well established programs for non-literates (the comparison group). It seems that the communicative-multicultural-neuropsychological model is suitable for teaching a second language to non-literate adult Ethiopian immigrants. Regrettably, our methodology does not allow us to determine with scientific certainty which component of this model contributed most to program success. Further qualitative research needs to examine the unique learning process and what constitutes effective motivation for learning to read. Still, what seems to stand out statistically is the feature of 'letter recognition' which is a very significant element in early reading development. Furthermore, production of words and sentences based on pictures indicates significant success, so it seems that the visual perspective and the technological support are valuable.

In general, we believe that our attempt to tailor suitable teaching-learning-evaluating processes to the Ethiopian immigrants' unique patterns of communication, learning and thinking strategies, systems of verbal and nonverbal symbols, oral literacy and ways of data organization was the key to the program's effectiveness (Schleifer 2014). Revealing their particular knowledge and considering their wealth of experience as an asset was our great challenge and enabled the development of 'Orit'.

The use of digital materials was also crucial for the program's success and seemed to fit with the learners' needs. On the one hand, it allowed us to combine special exercises with extensive drilling of neuropsychological and cognitive abilities critical for the acquisition of reading and writing. On the other hand, it provided the Ethiopian adults with their first experience with a modern, prestigious technique that encouraged them to engage in oral dialogues in class. In addition, the use of L1 in the L2 class proved to be extremely valuable. As was the case in Auerbach's research (Auerbach 1993) with adult beginners of English as a second language (ESL), learners gained a sense of security and expressed themselves in ways they may not have done in a strictly L2 setting.

Although in both the program and comparison groups the use of Amharic in class was seen as legitimate, our model employed L1 as an integral part of a

pedagogically well-constructed teaching process, which included providing specific feedback as a means of explanation, confirming useful learning strategies, comparing between Amharic to Hebrew and supplying suggestions to improve reading and writing systematically every lesson. This process coincides with mediated learning and facilitates reflective learning opportunities, which are important for those who had not experienced formal studies before. The significant use of Amharic in class also redefined the relationship between the two teachers and changed the balance of power between the native Hebrew speaking teacher and the native Amharic speaking teacher. The latter was able to become an equal partner in this collaborative model of teaching and gain a greater sense of professional efficacy.

During program implementation, it became obvious that teachers are key partners in the process and that they need to be included in the development of the program. Moreover, teacher training and on-going guidance play a major role in the successful integration of the new program into the official curriculum. Improving and broadening in-service training appear to be complex tasks, involving ongoing pedagogical investment.

Further research is also needed in order to determine what constitutes effective training (e.g., the inclusion of a support system for teachers in dealing with the daily dilemmas and challenges and the transmission of innovative teaching methodology using demonstrations by the developers themselves of the practical application of the program).

In order for program dissimilation to be successful it is important that program developers be well acquainted with existing language programs, and that an effort be made to incorporate innovative elements into the regular curriculum.

In conclusion, illiterate populations deserve well-planned, theory-based second language programs that can help them adjust to all aspects of becoming literate adults in a modern society.

Notes

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2 "Orit" was developed by Eli Ziv and Dr. Michal Schleifer based on the software "oryanit". The program was financed by the North America's Jewish Federations (JDC) and the Adult Education Division, Ministry of Education, State of Israel, and managed by the Israel Adult Education Association, (IAEA).

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