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How Illiterate People Learn: Case Study of Ethiopian Adults in Israel

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Introduction

The primary goal of this paper is to describe, map and assess the various channels and human agents employed for learning purposes by illiterate Ethiopian immigrants in Israel. Understanding these immigrants' informal learning methods will aid policymakers working with this specific population as well as at the international level with regard to the billion people around the world who are unable to read or write.

Today, most knowledge (alpha-numeric information) is collected and stored symbolically in writing and in print. Thus, most learning and knowledge construction takes place today via the symbolic-formal learning channel, which presupposes the ability to read and write (Chen, 1998). However, about a third of the global population is illiterate. Ethiopia is among those countries in which 70% of the overall population, including the Jewish community, does not know how to read. Technological and traditional knowledge is learned in informal frameworks, through observation and emulation, trial and error, and experience accumulated over time. Jewish community elders, spiritual leaders and skilled workers of various kinds once served as the main learning agents in the village (Badovsky, 2001; Ben Ezer, 1992). This population immigrated to Israel, to a culture in which reading and writing are basic skills essential to social integration.

Background

Acquiring new knowledge without knowing how to read and write is no simple task in modern society, where people are flooded with new information on a daily, even hourly, basis. At present, of the world's 3,000 or so existing languages, only 106 are written languages (Ong, 1982). In countries with high levels of illiteracy, it is not restricted to young people who have not yet learned how to read and write (Harman, 1987). In many countries the illiteracy rate ranges

from 65% to 95%. In Ethiopia, a high percentage – some 70% of the citizenry – does not know how to read and write.

Ethiopian society is pre-industrial, agrarian, traditional, tribal, authoritarian and patriarchal; it lives by specific value-systems and norms and is based primarily on oral culture (Badovsky, 2001; Ben Ezer, 2002; Rachamim, 1999; Anteby, 1994; Levin-Rozalis, 2000). Most of the Ethiopian Jews who have immigrated to Israel come from village areas, without any access to modern society, and are illiterate (Gador, 1996; Fanta, 2005).

Illiteracy has many implications, with the first and foremost being the job market. Literacy inability retards individual employability and impedes job performance (Wilson-Robertson & Zeiss ,1991). In the 1980s the U.S. Department of Education defined fluency for a literate adult as "the ability to read, write and compute…the ability to hold a decent job to support self and family, to lead a life of dignity and pride." At the lowest literacy standard, an employable adult can read street signs, simple text, or possibly parts of the daily newspaper with difficulty (Gordon, 2003).

The American Management Association (AMA), in a national survey of major U.S. companies, found that 40 percent of job applicants failed a basic math test and 32 percent were deficient in the reading skills abilities required for jobs. In 2000 the international Organization for Economic Cooperation and Development (OECD) found that about half of the U.S. population reads below the eighth-grade level, with many Americans below even sixth-grade level (Gordon, 2003). Moreover, every fifth person in American industry is functionally illiterate and innumerate (Wilson-Robertson & Zeiss,1991).

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Costa (1988); Fernandez (2001); Gordon (2003) ; and many other researchers have noted the difficulty in defining literacy. At its simplest level, literacy refers to reading and writing abilities (Harman, 1987). Fernandez (2001) describes literacy as something more than the ability to make identifying marks on a document. But when we refer to a completely illiterate person, we mean the inability to read and write in any language. The research subjects occupied different points along the continuum from total illiteracy (the inability to read at all) to beginning literacy, at the Grade 1-Grade 2 level. The transition from illiteracy to literacy takes place along a continuum.

Grabesky (1970) discusses three approaches to determining the various points on this continuum.

According to the first approach, a person is not considered illiterate when he is able to read with comprehension and to write a short list related to everyday activities. The second approach talks about "functional literacy." According to this approach, functional literacy occurs when a person has learned the reading and writing skills necessary to participate effectively in reading and writing-based activities dictated by his society and culture. The third approach relates to literacy in terms of number of years of study.

How, then, do illiterates learn – what are the learning channels and agents used by this population to achieve literacy? In order to answer this question, we shall focus on informal learning frameworks. The term "agent" is used to describe the source from whom illiterate people learn.

Learning channels in informal settings

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Informal learning is learning that takes place via an internal, personal process, through experience and practice, anywhere and at any time of life, outside of any school, college or vocational training framework. Knowledge is acquired via activity that imparts values, skills and experience-based information that is influenced by different sources within the environment – the family, the neighborhood, work, games, commercial activity, etc. People who lack reading and writing skills acquire knowledge via informal frameworks. Technological knowledge, including traditional and vocational knowledge, are learned informally – by watching and imitating experts and older, experienced people, through trial and error, and through personal experience acquired over the years. These methods constitute a kind of local school, in which all those interested in learning a particular skill work at it until they reach the level of knowledge necessary to engage in it independently. Cole and Scribner (ibid) note that in informal education things are always learned in context. The child does not, for instance, learn about the number 3 in isolation, but rather carries out concrete operations involving objects and numbers of objects. By contrast, the arithmetic learned in school addresses the number as a thing in itself. The essential difference is that informal learning is primarily inductive (generalizing from the particular); while in the school setting the child first learns rules and then connects them with their real-life manifestations.

In the Ethiopian village, as well, occupations, tradition and customs are learned locally, passed on from father to son, by means of trial and error, observation and imitation. The primary learning agents are the community elders, religious leaders and heads of families. Via these learning frameworks and agents, the individual villager acquires the entire body of vocational, cultural, social and traditional knowledge that has developed within the village. In this way, all

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of the skills needed by individual practitioners of the various branches of agriculture, shepherding and animal husbandry, as well as other necessary skills, are transmitted from generation to generation. In the same way, mothers teach their daughters the skills needed for childcare, preparation of traditional foods, spinning, pottery, basket weaving, etc. The cultural, social and communal knowledge of the villagers is acquired through traditional means (Badovsky, 2001; Ben Ezer, 1992; Banai, 1996).

Oral culture has developed ways of bypassing literacy-based learning, employing non-symbolic learning channels that do not require the ability to read and write. Non-symbolic learning channels are based on hands-on experience acquired through direct interaction with the real world (Chen, 1998; Popper, 1977). Piaget (1972); Straus (1966) and others characterize the main learning methods of oral culture as concrete, sensory-motor based, and dependent on activity and interaction with the environment.

One of the most widely-used learning channels is that of observation and imitation. At the heart of this approach lies imitative ability. That is, the learner sees someone, a "model," perform an action, and he imitates this action, reconstructing it on his own. According to Bandura (1963), learning through observation and imitation has three main components: *attention* – the learner has to be aware of, and focused on, the specific behavior of the model; *memory* – since the learner does not carry out the modeled activity right away, he has to store it in his memory and retrieve it later on for emulation; *ability* – the learner has to be capable of performing the activity carried out by the model.

Researchers such as Bruner (1977), Carraheter (1993), Ong (1982), Yonai (1992) and Schuster (1997) address several different learning channels that are employed by illiterate

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populations: *Visual* learning – observation based on the sense of sight and visual memory; *imitative* learning; *practice-based* learning; *enacting* (learning through doing/hands-on learning; *apprenticeship* – learning through verbal explanation and demonstration; reflexive observation of the leader – the learner receives instructions from the expert and follows them until he becomes expert himself.

According to experiential learning theory, learning takes place in a spiral process that begins with concrete activity and continues with reflexive observation leading to abstract conceptual generalizations (Kolb, 1984). This definition has four main features: first, learning is defined in terms of process and adjustment, rather than in terms of products. Second, the learning process is perceived as a dynamic change in the state of knowledge, not as a static, objective entity that is acquired or transferred. Third, learning is a systemic process that involves both emotion and cognition. Fourth, learning is a knowledge-creating process that emerges from interaction between the learner and his environment. Meaning is created when ideas are put into practice and tried out in the real world, and when the learner reflects on these efforts.

The constructivist approach also views the learner as an active participant in the construction of autogenic knowledge, based on a process of interaction with the environment. According to constructivism, learning takes place as an active process in which the learner constructs and incorporates into his consciousness new ideas or concepts, on the basis of an existing cognitive structure. Dvir (2000) and Bruner & Kenney (1995) note that new concepts are learned through interaction between the learner's prior knowledge and the new data that he has been exposed to during the learning process. When a contradiction arises between existing knowledge and the knowledge produced by interaction with the environment, the existing

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structure changes in order to restore balance (Siegler, 1992). Thus, learning depends on previous knowledge and is connected to the context in which it takes place (Resnik, 1987; Ackerman, 1993). The learner chooses and changes knowledge, creates hypotheses and makes decisions, based on cognitive structures (such as schema, mental models) that confer meaning and order on experience and enable us to analyze approaches (Dvir, 2000).

The constructivism-based investigative learning approach posits two parallel spaces in which learning takes place: the hypothetical space and the experimental space. The hypothetical space is composed of the laws that describe a given phenomenon, laws that are observable. The experimental space is composed of the relevant experiments that may be carried out, and their outcomes (Klahr & Dunbar, 1988).

In oral cultures relying on language and memory, the discovery process was the primary means by which learning developed. These cultures developed mechanisms for learning and remembering material through signs, rhymes, sayings, and repetition of what was heard. They also employed symbols in the form of movement and body language (Ong, 1982; Goody, 1995; Cole, 1997). Aids used to pass on messages to future generations include narrative and expressions of various kinds, which play an important role in preserving cultural and communicative knowledge. Narrative is the counterpart of text in written cultures (Ben Ezer, 2002). Bruner (1985) sees narrative as the basis for learning and knowing about the world. Narrative refers to the structure, knowledge and skills needed in order to construct a story (Shkedi, 2003). Narrative is a source of broad, long-term, logical and stable knowledge that makes repetition possible. It is, in effect, a story or part of a story that was told, written or imagined through the eyes of one of the participants or observers (and probably fictional). It

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plays an essential role in creating historical continuity for patterns in the oral culture (Ong, 1982). The limitation of this kind of culture lies in the fact that information transfer and learning are dependent on people and take place via concrete communication that is time and space-specific. Oral culture is also perceived as having a more fragile, less methodical structure than written culture (ibid, Goody).

Learning channels in formal frameworks

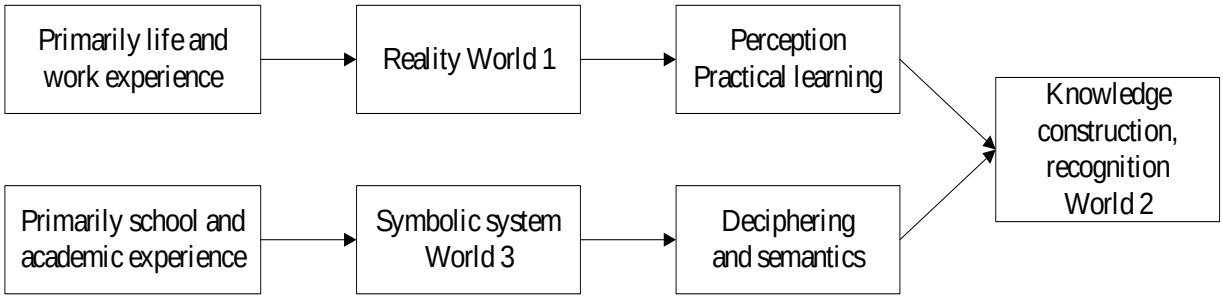
In written culture knowledge is systematically transferred via formal frameworks such as schools, the media, professionals, information technologies and the like, in a way that is not restricted in time or space.

Learning in formal frameworks takes place in a hierarchical, structured manner, beginning with elementary school and continuing through university and training programs of various kinds. That is, the primary learning channel through which knowledge passes in a formal teaching framework is that of symbolic learning, based on reading and writing and the associated phenomena of codifying and decoding written information (Chen, 1998). This channel entails a cognitive decoding mechanism that provides the symbolic system (text, numbers) with its semantic interpretation (meaning). Writing is a cognitive technology that supports memory and contributes to knowledge development. It is a powerful technology that frees the brain of the need to store a never-ending succession of items and facts, making it possible to channel precious cognitive energies toward complex thought processes (Mioduser, 1995). Symbolization makes it possible for man to represent events and to analyze, categorize and organize his experiences, to recall experiences later on, and to imagine and predict future activities and

events. This ability also enables man to imagine alternative solutions to a problem, without having to actually try out each different option (Bandura & Walters, 1963).

Popper (1977) and Chen (1998) use the following flowchart to describe two different and complementary learning channels:

Figure 1: Two Major Learning Channels



The channel leading from World 1 to World 2 is employed mainly in the course of life and vocational experience. The channel leading from World 3 to World 2 is employed mainly by educational institutions. The two channels exist simultaneously, but, as Dewey noted, the second is the dominant one in modern society.

The following table compares the learning channels used by each kind of learning framework.

Table 1: Learning channels used in two different learning frameworks: informal and formal

Informal learning (illiteracy)	Formal learning (literacy)
Visual	Reading, writing
Drill and practice	Numeracy
Apprenticeship	
Learning by experience	

Enacting	
Schema	

Distinctions between learning channels in the informal system are not sharply-delineated, and there is a certain overlap between them. There are other learning channels with regard to observation and imitation based on paying attention, remembering behaviors and duplicating them according to the model. In order to duplicate the modeled behavior, drill and practice of the action are necessary, as is learning by experience.

There is also a lack of clear demarcation between informal and formal learning channels. Informal learning channels are open not just to the illiterate but also to those who know how to read and write. By contrast, illiterates seeking to broaden their knowledge are limited to the learning channels available in the informal framework only.

Methodology

Research questions

1. What are the **learning channels** used by illiterate Ethiopian immigrants to Israel, and what are the usage rates in these channels?
2. **From whom** do illiterate Ethiopian immigrants to Israel learn and what are the usage rates of these "agents"?

Research population

The study comprised illiterate adult Ethiopian immigrants to Israel. "Illiteracy" refers to the inability to read and write (Hertz-Lazarovitch; Shadal, 2003). The research subjects occupied different points along the continuum from total illiteracy (the complete inability to read) to beginning literacy, at the Grade 1-Grade 2 level.

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The study population consisted of 50 adult Ethiopian immigrants who had been living in Israel for 10-20 years: 20 men and 30 women between the ages of 40-60. The subjects were selected via the non-probability *snowball sampling* method. In geographic areas characterized by large concentrations of Ethiopian immigrants, meetings were held to publicize the study and its goals. Some of the subjects were recruited via these meetings. Others were recruited through personal referral, with "friends bringing friends," until the desired number of participants was reached.

Research instruments

Semi-structured interviews were used to determine learning channels and "agents." The subjects were asked to respond in Amharic – the interviewers' language – to the following:

1. How had they learned to use new technologies encountered in Israel, such as refrigerators, microwave ovens, televisions, telephones, gas stoves, washing machines, electric mixers (learning methods).
2. From whom had they learned these things (learning agents).

The statements of learning-channel data were constructed based on categories provided by the literature. The learning-agent categories were constructed based on the data itself. Usage rates for the various learning channels and agents were calculated and presented in percentages.

Research method

A mixed qualitative-quantitative method was employed (Creswell, 2003).

The qualitative approach makes it possible to understand the nature and meaning of internal processes in the situation under study, from the perspective of the participants themselves and in terms of their language, worldview and attitudes toward values and events

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(Tzabar-Ben Yehoshua, 1997; Alpert, 2001). The statements collected from the interviews formed the basis of concept diagrams and maps that describe the structure of the reality under investigation, as described by Alpert (2001); Gabaton (2001) and Shkedi (2003) for analyzing data using the qualitative method.

Items from the interviews were quantified and their relative prevalence calculated; the results are presented in diagram form (Alpert, 2001) as the quantitative method.

According to the qualitative approach, the researcher is part of the research tool. In the present study, one of us belongs to the same ethnic community as the population being studied. This is an issue that is connected with professional ethics. The ethics of a qualitative study deals with the search for principles, commitments and values that guide and characterize the researcher's proper behavior and it relates to identification, sensitivity to the respondents, and the ability to appreciate their feelings and cognitive tendencies with an awareness of the possible impact on the researcher and his work (Tzabar-Ben Yehoshua, & Dushik, 2001). The interaction between the researcher and the respondents took place in an atmosphere of mutual respect, trust, reciprocity and sharing, with sensitivity to the respondents' cultural, social and cognitive point of view. This approach enabled the researcher to gain the respondents' cooperation, and their willingness and consent to carry out the tasks.

Undoubtedly, being a researcher from the same ethnic background has both advantages and disadvantages. The advantages: Having a common language with the respondents that includes – beyond the spoken language – understanding body language and social context, and understanding cultural and cognitive codes. For example, the need to conduct an introductory discussion before getting to the main topic. There are other examples as well: Paying attention

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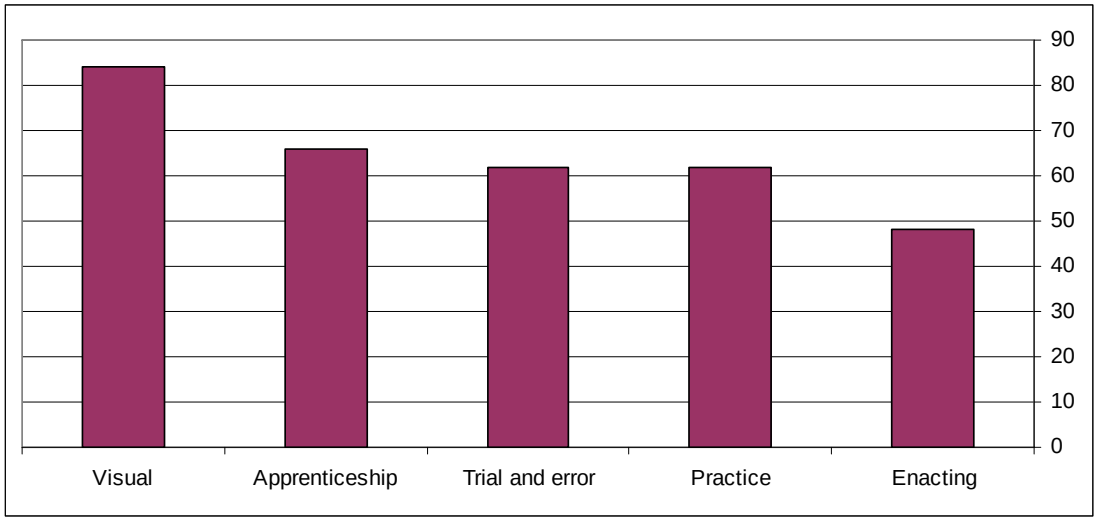
to the respondents' level of fatigue, which is liable to create cognitive overload when performing tasks; or the presence of guests, who are attributed great importance in Ethiopian culture, and this takes precedence over doing the tests, even if these had been set up in advance. The disadvantages are likely to include being overly involved with and overly sensitive to the respondents – disadvantages that could influence the perception of the reality being studied. In our opinion, the advantages outweigh the disadvantages, and the common background played a positive role to the data collection process in the present study.

Findings

Data analysis shows that all of the subjects make use of more than one learning channel at a given time: visual, apprenticeship, practice, trial and error, shape and modeling. Chart 1 presents the distribution of users of the various learning channels (amount of statements), by percentages, across the study population. The figures refer to the percentage of users of the channel in question among the entire participant group. Statements in this section do not cover the learning of all of the appliances present in the subjects' homes and immediate environment, but rather reflect the main learning-channel and learning-agent trends for this population.

Figure 2: Percent of respondents reporting use of each learning channel (N=50)



The data show that despite the participants' illiteracy, they found ways of bypassing the need for reading and writing skills in order to learn new things. According to the data, all of the subjects use more than one learning channel at a given time. The most commonly-used channel is the visual, based on observation and emulation of absorption personnel and others.

Examples of statements linked to the learning channel:

Visual: *"They showed us when we were in the caravan, everything that we saw with our eyes."*
"We watched how other people used it."
"We watched relatives who had been in Israel longer."
"I saw how it was done and kept the picture of it in my mind."

Apprenticeship*: "They explained it to us and afterwards they showed us how to use it."*
"Someone came to explain how to wash clothes, if you want to wash white clothes, if you want to wash colored clothes you press this button, and that's how he told me about all the different kinds of laundry. That's how I learned to operate the machine. For the oven, the refrigerator and everything else someone came to teach us."

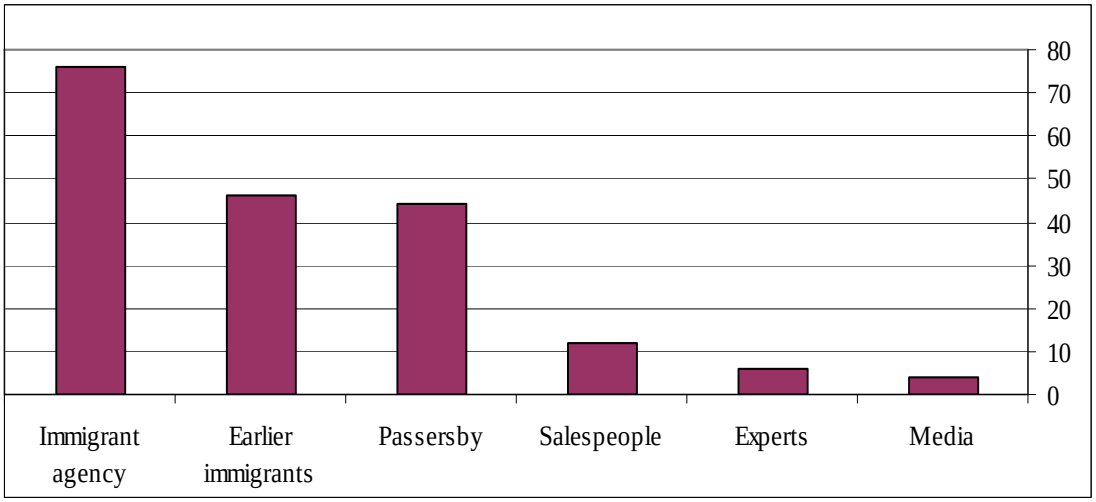
Training and practice: *I saw how other people make phone calls; afterwards I tried it myself and also learned how to do it."*

Trial and error: *"I tried to operate the mixer, the washing machine, myself; at first it didn't work but I kept trying until it did."*

The subjects' responses are notable for their use of plural forms: "we saw," "we did," indicating the importance of collective experience, of belonging to the group, even if the learning takes place at the individual level.

These learning channels are employed by the subjects via various learning agents with whom they come into contact in their environment, as shown in Chart 2. The figures refer to the percentages of users of these agents within the entire sample.

Figure 3: Percent of respondents reporting use of each learning agent (N=50)



Analysis of the data indicates that the subjects make efficient use of the opportunities presented to them by their environment, while also employing several different types of learning "agent." Examples of statements in which absorption personnel are mentioned as learning agents:

> *"At the absorption center they taught us how to use all the appliances and tools..., such as the stove, the oven, the refrigerator, the microwave …"*
> "*Coaches at the absorption center showed us, this is how you turn it on and this is how you turn it off, afterwards we learned. That's how we learned about the washing machine, the stove, the coffee grinder."*

What is particularly striking is the impact of absorption personnel as primary learning agents. This high degree of prominence may be attributed to the fact that the absorption personnel were the first to engage in the subjects' initial absorption in the country, to expose them to new technologies, and to explain these technologies and their use to them.

Veteran immigrants and passersby are used as learning agents to a moderate degree, while experts and the media are learning agents of low prevalence. Sample statements:

> Veteran immigrants: *"Immigrants who came before us taught us."*
> Experts: *"Teachers taught us from books". "We asked nurses how to use different kinds of drug.s.*
> Passersby: *"We learned how to dial a public telephone, there were people there, we asked them and they showed us how to dial the phone."*
> The media: *"We saw on television how to use a mixer." "On Radio Amharit they explained a lot of new things."*
> Salespeople: *"Salespeople in the stores explained to us how to use the things that we bought."*
> As is evident from these responses, the subjects make use of more than one learning agent at a given time. In this way, they have been able to find appropriate learning agents for the various kinds of information that they require.

Discussion

Despite the anticipated difficulty of acquiring knowledge without knowing how to read or write, analysis of the data shows that illiteracy does not prevent the research subjects from acquiring new knowledge via alternative learning channels. As with the findings of Cole and Scribner (1978), the subjects of the present study employed learning strategies that bypass the reading/writing-based learning method, acquiring knowledge via informal frameworks and through the use of a variety of learning channels. Feuerstein (1994) found that while Ethiopian immigrants actually have well-developed learning skills, cultural differences cause them to be ranked at the bottom of the ladder in terms of learning achievements. According to him, a

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different assessment method and the construction of a suitable learning environment could alter this ranking. Friedman (1986) supports these findings and notes that some Ethiopian immigrants possess outstanding capabilities and that their motivation to learn is high compared with that of Israeli pupils with learning difficulties; teaching methods that suit the needs of these immigrants should therefore be employed.

Visual learning, apprenticeship learning, observation and imitation channels

The visual channel, based on observation and recall, is the main channel for human learning (Bruner, 1977; Farah, 2000; Ong, 1982). This channel is, indeed, one of the most prevalent of the various existing learning channels. Learning processes that take place via the visual channel may be described as a kind of reciprocal interaction that occurs between a person's internal representations and the external information that is absorbed from the environment (Churchland, 1995; Arnheim, 1969).

Visual learning also includes imitative learning which, ultimately, may be classified with the practice method (Bruenr, 1977; Carraheter, 1993; Ong, 1982; Yonai, 1992). These channels enable the study population to learn in informal frameworks. Informal frameworks, as described by Cole and Scribner (1978), are part of everyday life and feature extensive activity and learning through observation and interaction with the real world (Chen, 1998; Popper, 1977). These are situations in which a type of reciprocal interaction takes place between the learner's internal representations and the external information absorbed from the environment (Churchland, 1995; Arnheim, 1969).

Partial symbolic learning was also found among the subjects, occurring along the visual channel. This type of learning mainly involves alpha-numeric information. A large number of the

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subjects had learned to identify numerals in order to use the telephone, select television channels, write checks, etc. This learning actually consists of the morphological identification of a particular symbol needed for everyday uses, with no deciphering of the information represented by that symbol. This limited use of symbols takes place only in real-world contexts, through hands-on experience that leads to interactive learning (Chen, 1998; Popper, 1977).

Another channel used extensively by the subjects is the apprenticeship channel. Here, too, there is a significant element of visual learning based on watching others, described by Cole and Scribner (1978) as learning that takes place within an informal framework. The subjects also displayed learning through observation and emulation of models. Bandura (1963) notes that in order to learn from models, certain conditions of attentiveness, capability and memory must be met.

Trial and error, training and practice channels

The rate of use of these channels reached nearly 50 percent. Learning through trial and error is based on the theory of experiential learning. According to this theory, learning takes place through a spiral process that starts with concrete experimentation and continues with reflective observation leading to abstract conceptualization (Kolb, 1984). The constructivist approach also supports the idea that new concepts are learned through interaction between the learner's prior knowledge and new data discovered through the learning or experimental process (Dvir, 2000; Bruner and Kenney, 1965) which ultimately takes place through training and practice. Dewey also contends that learning takes place through active experimentation in social contexts. This kind of learning makes it possible for the learner to assess the outcomes of his

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learning, to investigate various thinking processes, and to exercise his judgment in choosing among them (Yancey, 1992).

Changes in learning channels

The transition to life in a modern society expanded the Ethiopian immigrants' learning-channel options. It made available to them alternative learning channels and agents via which new and ongoing stimuli could be represented, resulting in learning through experimentation. External stimuli appear to enable learning through the use of meta-cognition (Amiram and Courts, 1991; Bandur and Walters, 1963; Yancey, 1992).

A population that does not know how to read and write acquires knowledge and skills through learning agents and other channels that bypass literacy-based learning. However, it should be emphasized that their learning is still based on human memory, which has spatial and temporal limitations. Information is acquired through interaction with the real world in a concrete way. By contrast, symbolization, embodied in writing, makes it possible for people to represent events symbolically, to analyze, classify and organize their experiences and to recall them after time has passed, and to imagine and predict future actions and events. This ability is also what enables people to imagine problem-solving options without having to try out each option in a concrete way (Bandura, 1963). Writing is a cognitive technology that supports memory and contributes to knowledge development. It is a powerful technology that frees the brain from the necessity of storing infinite quantities of information and facts, and makes precious cognitive energy available for complex thought processes (Mioduser, 1995). This development led to a change in the structure of language and to accelerated human cognitive development (Cole and Scribner, 1978; Olson, 1994).

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Learning agents and changes that took place due to the transition

The main learning agents employed by the research subjects are human and technological. The primary human learning agents are absorption personnel. The importance of absorption personnel as learning agents stems from their role as the immigrants' first intermediaries in their encounter with modern society; they welcome the immigrants upon their arrival in the country and guide them in their first steps as Israeli citizens. Collectively they serve as a kind of school for learning essential new technological skills. The technological learning agents used by the subjects are television and radio. Despite the fact that the usage rate for these technologies as learning agents is low, they nevertheless constitute an indication of the usage capabilities of subjects who are illiterate. In addition to knowledge acquisition, there is also an awareness that relevant knowledge can no longer be learned from community elders, as noted by Rachamim (1999) [and] Ben Ezer (2002). In the past, community elders had served as the subjects' primary information agents. Information was concentrated in the hands of a few who were able to use it to control others around them.

Immigrants' learning agents differ in type and variety. The transition to life in a modern society has led to a democratization of knowledge, to different and expanded opportunities for knowledge acquisition, and to the availability of myriad learning agents that did not exist in their traditional culture, including electronic media and a wide variety of frameworks and people of all ages. In Ethiopia, most learning was familial-social and communal in nature, and took place via learning agents who were generally community elders and spiritual leaders (Ben Ezer, 1992; Bodobsky, 1994; Rachamim, 1999). With the transition to life in a developed society, the age factor that had been of such critical importance in Ethiopia disappeared, and a situation

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developed in which one could learn from anyone in possession of relevant knowledge, regardless of his age. Moreover, learner ages also changed. In a modern society such as Israel, everyone learns from everyone, with no distinction as to age (Ben Ezer, 1992; Rachamim, 1999). Socialization and learning do not take place only within the family, the village and the community, with parents, adults and village elders as teachers. In modern society it is the younger people who serve, in numerous spheres, as the agents of primary knowledge for older adults (particularly with regard to technology). The research subjects approach potential learning agents on their own; these agents include the electronic media, which were found to provide an additional option for knowledge acquisition.

To conclude, the present study indicates the potential that exists among illiterates for knowledge acquisition via learning channels and agents that bypass literacy-based learning methods. That is, the inability to read and write does not prevent people from acquiring new knowledge. Nevertheless, it should be stressed that this kind of learning has its own limitations. Despite the fact that the learning channels and agents used by the research subjects for knowledge construction expanded significantly after the move to Israel, the subjects are still limited in their acquisition of more complex knowledge. Although illiterate immigrants now have the opportunity to store knowledge outside their minds (on videotape or audio tape, for example), and to learn via alternative technological agents and channels, not everything may be stored using non-literacy-based electronic media. The subjects' various learning channels and agents are still connected to the concrete learning that takes place in the real world, on a face-to-face basis.

Conclusions

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This study has yielded some important insights:

- Illiteracy does not preclude learning via informal frameworks. There are a variety of learning channels and agents available that bypass literacy and enable immigrants who do not read or write to learn via alternative methods in their new environment. Illiteracy does not present an obstacle to the research subjects when they need to learn things that are important for their everyday functioning, in the context of interaction with the stimuli presented by the modern society into which they are being absorbed.
- Living in a modern society makes it possible for people who do not know how to read and write to acquire knowledge and to store it outside their minds, via technological means.

Policy recommendations

- Culturally appropriate agents and channels should be developed to encourage learning by adult Ethiopian immigrants and to safeguard their status and image, in their own eyes and in the eyes of the younger generation. This will enable older immigrants to help themselves, and to become active contributors to the absorbing culture.
- The Israeli absorption authorities should recognize the ability of illiterates to acquire knowledge via informal frameworks, and absorption programs should be developed that take these abilities into account. This will significantly improve the process of acclimitization, adjustment, job placement, and social integration of the new population.

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- There should be recognition of learning methods that bypass literacy. Absorption programs compatible with the learning and thinking processes of those being absorbed enable immigrants to achieve greater independence, leading to better adjustment and to easing the burden borne by the absorbing society.

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