Respecting the human needs of students in the development of e-learning

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Abstract

This paper deals with the process pupils, aged 11 and 12, go through in the course of distance learning using electronic mail. Based on the constructive approach principles for teaching, the idea underlying this course was that students may acquire basic computer skills through experiential learning while actively using the software programs being learned and experiencing through trial and error. During the course of the research, detailed instructions were sent to the learners who performed the assigned tasks and returned the completed work, or any question, problem or ambiguity, to the teacher for evaluation and reassignment if necessary. The teacher’s role was that of guide, facilitator, mentor, manager of resources and students and disseminator of tasks and questions. Collection of data was carried out through interviews, observations, questionnaires, tasks that the students were required to send in, and the portfolios that the students were asked to prepare. The data analysis strategy was that of “content analysis”. Six themes appeared over and over again and it appears that there are two dimensions that all of them have in common. The first dimension relates to the technological aspect and the second dimension relates to the social aspect. A summary of the findings shows that children aged 11–12 find it difficult to learn in a distance learning computerized environment, a situation in which there is no face-to-face contact with the teacher or with other students. The main conclusions of this paper indicate the importance of personal contact and direct connection between teachers and their pupils. It is important for the teacher to take into consideration and respect the varied and various human needs of the children when developing electronic learning for such young learners.

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1. Introduction

This paper presents the findings of a study that examined the challenges with which 11–12 year old students are faced when participating in a ‘Basic Computer Skills’ course that is based on distance learning by way of electronic mail. The aim of the study was to examine what happens (cognitively, affectively, and conatively) to the students participating in this course.

Distance education is a method of education in which the learner is physically separated from both the teacher and the institution providing the instruction. Distance education may be used on its own or in conjunction with other forms of education including face-to-face instruction. Learning may be undertaken either individually or in groups. In its original form, teachers using distance education corresponded with students through regular mail, telephone, or fax machine. The use of various forms of electronic media increases time effectiveness, enables flexibility of place and improves the delivery of information. Electronic delivery can occur using synchronous communication, in which class members participate at the same time, or asynchronous communication where participants are separated by time (Mielke, 1999).

The course described in this paper was based on the use of e-mail which is, in fact, a form of asynchronous communication. During the course a number of face-to-face meetings took place. However, the main form of activity was that detailed instructions were sent to the learners who performed the assigned tasks and returned the completed work, or any question, problem or ambiguity, to the teacher for evaluation and reassignment if necessary.

The idea was to apply the constructive approach (Glasersfeld, 1995; Krajcik, Czerniak, & Berger, 1999; Vygotsky, 1986) principles to teaching, having the students learn basic computer skills (specifically speaking, familiarization with Windows, Word processor, Power Point program, and e-mail program) through active learning, trial and error and active use of the programs learned.

In the course presented here, the method of teaching also made it possible to apply some of the ‘individualized learning’ (Corno & Snow, 1986) principles, which allow for the setting up of appropriate individualized levels and rates of learning adapted to each and every student individually. “Distance education offers students considerable benefits including convenience of time and place” (LeLoup & Ponterio, 2000).

E-mail was in use before the Internet as we know it today even existed and still one of the most commonly used Internet application. The infrastructure requirements for email are minimal, making it the most available of all Internet tools. Today’s e-mail software can handle texts in a wide variety of languages and can include word processed files as attachments. The software also allows sending sound and images as attachments that enhance the context of the written communication (LeLoup & Ponterio, 2000). In the course described in this paper, much use was made of the Attach function of the e-mail program.

In reviewing literature it appears that most of the research carried out on the effectivity of distance learning through the use of e-mail has been carried out at the level of higher education. Only very scanty material exists that examines the 11–12 year old age group discussed in this paper. Later (in the discussion section of this paper) we will try to compare the results of our research with the results of research on higher education.

Findings of research that has been carried out in recent years in higher/adult education suggest that students in distance education settings perform as well or better on assignments and exams
when compared to campus-based students (St. Pierre, 1998). Web-based instruction provides a learning environment in which participants can develop electronic literacy skills as well as various other skills and are able to share their ideas and projects (Hindes, 1999; Marttunen & Laurinen, 1999). Overall, students found electronic interaction a meaningful, enjoyable experience (LaMaster and Morley, 1999). The e-mail education seemed to create more personal interaction between teacher and students than traditionally scheduled courses (Ross, 2000). Nevertheless, students must maintain persistence, enthusiasm, personal commitment, and a clear focus in order to succeed in a distance-learning situation. Self-direction, a passion for learning, and strong individual responsibility are important influences on achievement. There are indications that distance education works best for more mature, motivated, well-organized, and already accomplished learners (Rintala, 1998).

More findings of research in higher education suggest that web-based-training programs should be designed to accommodate the learner’s needs and to allow learners the freedom to follow unique paths to learning in their own cognitive styles (Brown, 2000; Oosterhof, 2000). Task-oriented and detail-oriented people who are focused in their study habits and engaged in learning tasks requiring creative thinking and analysis are those who are most successful in using computer-based programs (Wonacott, 2000; Hubschman, 1999). In research carried out by Brown (2000) that compared between adults studying in regular classes and those studying through distance learning, it was found that in general, web-based-learning students felt that electronic instruction facilitated greater depth of learning and afforded greater opportunity for them to participate in discussions since no one student could monopolize the conversation. In discussing the difficulties with electronic instruction, students mentioned that they felt disconnected from their class members, frustrated by a poor flow of communication and technical problems, and confused by feedback that was not always clear. They missed having face-to-face contact with their instructor.

The instructor teaching the course described in this paper used the Garrels (1997) model which describes five critical elements for successful teaching at a distance: instructor enthusiasm; organization (i.e. teaching materials must be prepared in advance); strong commitment to student interaction; familiarity with the technology used; and critical support personnel.

Indeed, four of these critical elements were maintained in our research: the teacher of the course was extremely enthusiastic over using this new teaching approach which was new to her; the entire course and the student tasks were all pre-planned; the teacher was committed to interacting with the students and responded quickly to each request; and the teacher was well-acquainted with computer technology. Despite fulfilling all the above criteria, we assume that the teacher was still faced with some difficulties when moving from traditional classroom teaching to distance learning teaching. However, in this research we chose to examine what was happening to the students. In follow-up research, it will certainly be necessary to examine the difficulties with which teachers who use this kind of teaching method in teaching 11–12 year olds are faced.

2. Method

The subjects were twenty-five 11–12 year old students residing in the center of the country. All the subjects came from families of middle–high class status. All the parents gave their consent for
the participation of their children in the research. First, the subjects were summoned to a meeting to have the students become familiar with each other. Also, they were provided with some technical details and information about the project goals and the process they would go through during the program. There was a discussion on how the project was to be evaluated. The main purpose of the meeting was to create a relaxed atmosphere and to obtain students trust.

The subject “basic computer skills” has recently been included as a compulsory subject in Grade six (11–12 year olds) in the school in which the researched students study. As already stated, the idea was to apply the constructive approach principles to teaching, having the students learn basic computer skills through experiential learning and through active use of the programs learned.

In the framework of the course described here, a number of face-to-face sessions between the teacher and the students/parents took place. In the first face-to-face meeting the pupils were given a preliminary training in how to use the email and how to make attachments. The main purpose of the other sessions was to obtain information about difficulties that may have arisen and in order to receive feedback. However, most of the activity was carried out by using the e-mail as described above.

The qualitative paradigm was found to be suitable for the research mainly because the research focused on the human beings and examined processes in the natural environment where the subjects operated (their homes). Collection of data was carried out through semi-structured interviews (Mishler, 1986; Spradley, 1979) with the students and their parents, ‘the observer as participant’ observations (Adler & Adler, 1994) that were carried out at the homes of the students, answers received on the questionnaires (open questions), the tasks that the students were required to send in, and the portfolios that the students were asked to prepare.

The number of interviews was not set in advance. The criterion for concluding the data collection was saturation; adding new interviews did not add significant new findings (Morse, 1994). As it turned out, the collection of data took 6 months.

The research design was developed during the data collection. There were no prior assumptions. Progressive focusing that begins with an unknown, collects some data, updates and corrects and so on, was used. As such, the strategies adopted in the research served to increase its reliability (consistency, auditability), inner validity (truth value, credibility) and external validity (applicability, fittingness).

This was carried out by tape-recording the interviews, cross-referencing sources, and triangulation (Denzin & Lincoln, 2000). The latter involved omitting all findings not found in at least three interviews or in at least three different data collection techniques. The findings were presented to the subjects in order to examine the extent of their agreement with the interpretations given to them (respondent validity). The data analysis strategy was that of “content analysis”: definition of the analysis units, setting the categories (outstanding repeated elements) and examination of frequencies.

The study presented in this paper is based on qualitative data analysis. The merit of a qualitative study lies in its internal validity, not in its generalization. Therefore, we do not recommend making generalizations on the basis of the case study described here. However, the findings and conclusions presented in this paper may serve as a basis for a further empirical/quantitative study based on a random sample and inferential data analysis.
3. Major findings and discussion

Analysis of the raw data that was collected from interviews, observations, student assignments, questionnaires, and student portfolios, revealed a number of themes that appeared over and over again:

- Anxiety of Grade six students over using the computer as a learning tool.
- Technical difficulties interfere with distance learning.
- Parent involvement is a critical factor for the success of 11–12 year old student learning by the distance learning method.
- Suitability of the distance learning method to the present course.
- Interrelationship between students and teacher and among the students themselves, and feelings of isolation that students taking a distance learning course feel.
- Students show high levels of enthusiasm.

3.1. Anxiety of Grade six students over using the computer as a learning tool

Despite the fact that a face-to-face meeting was held at the school computer laboratory at the beginning of the course in which the students were instructed in the use of the computer, one of the outstanding difficulties that arose at the onset of the process was the concern with using the tool called “computer”.

According to one of the fathers, his daughter’s problem was that she recoiled from the idea of sitting in front of the computer:

“The problem ... sitting near the computer. L. does not like to sit near the computer, it frustrates her. The computer does not respond amiably enough”.

Sometimes the fear stems from unfamiliarity with the computer or from perceiving the function of the computer as an instrument for providing games only (the inability to deem it as a learning tool):

“I did not think that I would have so many problems because I play on the computer with my friends and have never had any problem ...”.

One of the reasons for fearing the use of the computer was due to student ignorance of the required technical skills. This ignorance resulted in fear of the unknown:

“I need to practice more. I am not certain that I will know how to do everything that we have done here when I am on my own”.

At the first meeting, one of the girls (followed by the rest of the students) felt insecure with the new instrument. This fear reached such an extent that the students asked the teacher to personally come to their homes in order to guide them in the first work stages. Fear of this unknown learning mode was shared by all students without exception:
“It seems to us that it would be better if you showed us in our homes ... will you come to my home and help me?”

The concern of some of the students indeed became true and the students encountered many technical difficulties. Some students expressed their fears and technical difficulties also in their responses to the questionnaires. Some students lacked any skills in working with the computer:

“Sometimes I worked on an assignment for a very long time and at the end failed to save ...”. “I had many problems with the computer ... I did not always manage to open the files and it was difficult for me to read the assignments from the computer so I had to print them out on paper”.

Hill (1997) indicates the students’ concerns in regard to the operation of computerized equipment as being due to their lack of basic skills in the subject. Hill also adds that adjustment such as replacing the reading of printed texts with reading computer screens and downloading files and using them, requires new learning habits. The findings in the research substantiate this point—the students expressed their concerns throughout the entire process.

3.2. Technical difficulties interfere with distance learning

A significant problem encountered by the students was the difficulty in understanding basic Internet terms and principles and in operating electronic mail. This was extremely obvious at the first meeting with the entire group:

“I do not understand how it works”.

“But I do not understand what we need it for. We could live without it. “Why is it better than the telephone?”

The answers given on the questionnaire expressed technically related difficulties in sending electronic mail. This was the case in individual interviews as well:

“I am unable to attach a file in order to send it in the electronic mail”. “I had many problems with the computer and with the electronic mail ...”

For most of the students the main technical problem was related to the use of the electronic mail. One could feel their stress by reading the following compilation of sentences (taken from some students’ e-mail letters):

“I hope you will receive the mail”...“We have a problem with the e-mail, therefore, I needed three weeks to send the assignment”...“I told you on the telephone that the computer crashed ...”...“Finally I managed to send “...“I hope that this time I will manage”...“I am going to send it again. Please acknowledge”...“I did not send you the second assignment because of the problems I had. I am going to send it now”.
Some parents also pointed out the technical problems:

‘She had difficulties … In the technical part…. There were difficulties in receiving the material you sent”…. “Each time H. forgot how to attach files and she had no way of knowing if you received her e-mail. The computer asked her questions that she did not know how to deal with or refer to … Several times she cried and complained that the assignment was completed but she was unable to save the file in the right place and had to start everything from scratch”.

So, we see that the initial plan that was based on the assumption that the teacher would be able to help the students in solving their problems solely through the electronic mail did not prove itself. The students’ technical difficulties continued throughout the process and this discouraged them.

Thompson et al. (1998) found out that students who took part in distance learning courses using e-mail developed feelings of independence and pleasure only after a relatively long duration of experiencing. Based on our research findings we may assume that technical problems (that should be considered as a serious issue in the first course phases) may diminish as a result of repeated tries and experience. With hindsight we found that the students needed considerably more training in the technology before embarking on the project than what they were given.

3.3. Parent involvement is a critical factor for the success of 11–12 year old student learning by the distance learning method

Since the distance learning process took place in students’ homes, the parents were directly involved in the process. In some cases the children insisted that their parents solve the technical problems they encountered. This involvement was mentioned many times:

“My father and mother help me when I do not understand.”
“I had many problems with the computer and with the electronic mail, but father helped me. Otherwise I would have left the course long time ago”.

One mother admitted that her daughter continued with the project in spite of the frustrations, thanks to the mother’s encouragement. Later on, this mother was asked why her daughter did not call the teacher for help and the mother answered:

“In my opinion, the matter of the electronic mail remained an alienated and scary factor. This was especially so because it caused my daughter difficulties in sending the material… and once we even sent the teacher a fax instead of e-mail”.

There is much more to this mother’s sentence than just the mother encouraging her daughter. The mother used the words “we sent” in plural and from this it is clear that in this case the task was carried out in full cooperation between the mother and daughter (since the daughter could not manage the task by herself). It seems that the responsibility for learning was shifted to the parents. Obviously, this was not the purpose of the program. The project brought the parents and children together, inducing a feeling of the need to contend with the matter jointly.
3.4. Suitability of the distance learning method to this particular course

In one of the interviews, one parent argued that, in his opinion, the entire distance learning issue is suitable for special need students, sick students or students who are unable to come to school, but unsuitable as a standard teaching method.

And, indeed distance learning projects were, in fact, begun in areas where students reside at a great geographical distance from the school, where it is almost impossible to maintain a face-to-face encounter between the teacher and the student, and/or when students are unable to reach the school for other reasons. However, today, in the Internet era, Kerka (1996) argues, “anyone is potentially a distance learner”. Therefore, the question is: what are the conditions that have to materialize in order that this kind of learning to be effective?

In one interview, one of the mothers said the following about her daughter:

“... she is a very friendly child ... at school she is an excellent student with self confidence and high grades ... but in front of the computer she loses her confidence ... after the initial curiosity, when the technical difficulties recurred, she quietly fell into a state of despair over the subject matter”.

One student was asked whether she would recommend to her best friend to join the project and she replied:

“It depends. There are some who are unable to manage in such a project. Generally speaking this is not an ordinary learning mode and there are some people who have more difficulty in managing with these things...there are some people who feel better when they have a real teacher next to them”.

And, indeed, according to Filipeczak (1995) distance learning via the Internet is not necessarily more effective than learning by other methods: “Distance learning on the Internet can be cheaper, faster and usually more efficient than other learning modes, but not necessarily more effective”.

And, according to Parisot (1997): “The distance learning method was designated at first for a certain population and for irregular situations, and not as a teaching mode for all the students. But today, in the Internet era, everyone is a potential distance learner, and the only question is what are the conditions that have to materialize in order for this kind of learning to be truly effective?”

3.5. Interrelationship between students and teacher and among the students themselves, and feelings of isolation that students taking a distance learning course feel

We have mentioned above that one of the problematic points of distance learning is the lack of personal contact between the learners and between the teacher and the students. In this section we will show that this issue was mentioned repeatedly in almost all the interviews conducted in our research.

First let us discuss the issue of personal contact between teachers and students. According to Freedman (1998): “the main aspect in the interaction between teacher and students relates to the
affinity between the teacher and his or her students. The students want teachers that are able to give them human warmth and even an intimate attitude and can help them in solving their personal problems”.

One may ask: could function of virtual teacher be possible at all to meet Freedman’s criteria? According to the original plan, the teacher in our research was supposed to act as a virtual teacher—the entire communication between her and the subjects should have been carried out only by e-mail. In actual fact, this was not the case. Mainly in answer to students’ requests, the teacher in this research visited the students at their homes. As a result of these visits, the teacher was no longer a virtual teacher but rather a living, breathing and familiar person who has a telephone and may be communicated with by other ways in addition to e-mail. Still, the students felt lonely and uncomfortable with the e-mail communication medium. In times of need they approached the person closest to them—their parents:

“... it is easier to ask father ... and besides how could I show you on the screen what was wrong?”

One father argued:

“With all the progress, the matter of inter-personal communication is still important at this age and I do not think that teaching could be done only by e-mail.”

All the subjects indicated in the questionnaires that they would not have liked to study all the disciplines by the distance learning method. Some students felt the need of a tangible and not just a virtual teacher in the various disciplines.

So, our findings clearly show that one of the students’ main problems, when learning by e-mail, is the feeling of loneliness, isolation, and lack of face-to-face contact with the teacher. The literature validates these findings. According to Wolcott (1995) and Hill (1997) the interaction taking place in distance learning is less than the interaction taking place in face-to-face learning. The teacher is unable to examine the student’s reactions to the study material. He or she may only draw impressions from the written communication but lose out on facial expressions, for instance. Students feel loneliness that stems from the physical distance between them and the teacher. Communication might be faulty and this could cause the students to feel isolated, as though they do not belong to any group. The students have only very few opportunities to be in contact with other students and/or with the teacher. Apparently it is very difficult to study entirely alone and students need special support to enforce their motivation. Eastmond (1995) supports the same conclusion pointing out “The loneliness of the long distance learner”.

A number of researchers relate to the difficulties stemming from the lack of eye-contact between teacher and student, the situation with which the teacher is faced. For example, Willis and Dickinson (1997) wonder if teachers can be effectual when they are prevented from maintaining eye-contact with their students and when they (the teachers) are unable to observe the non-verbal behavior of their students.

Now, we are going to discuss the issue of interrelationships among the students themselves. Some subjects indicated that they would prefer to be surrounded by friends when learning. For example:
“... But it is quite boring to sit alone and work in front of the computer”.

To the question, whether you would rather do the same assignment in class in the company of other students one of the subjects answered without hesitation:

“Yes. I am certain that if I had worked with a friend it would have been more interesting and I might have succeeded more”.

Only one student answered:

“No, because the studying is done in my free time and I can meet friends at other times.”

The fact that most of the students claimed that they missed the company of children during work expresses clearly the dissatisfaction with the individual work in front of the computer. A research conducted by Haythornthwaite (1997) raised the problem of loneliness in this learning mode. The solution offered by the author was to work in pairs. Every activity is carried out by a couple of students. Every student works alone, but is connected to his/her partner through electronic mail. This way the student does not feel “alone in the battle”. Research findings show that this was a definite solution for the problem of loneliness and the feeling of belonging that every person, as a social creature, feels. In our research, the idea of work in pairs rather than individually was also conceived. One student indicated:

“I can imagine that there are those who like to work in pairs. The work in pairs has its own positive aspects since the partner may be asked...”

A very interesting finding came up in the research of Thompson et al. (1998) in regard to the question: how do students studying by the distance learning method, see the value of knowing the other course participants? In the second week of the course, 0 percent of the students deemed that it was important to be familiar with the rest of the participants, but in the 15th week 88% (!) deemed that there was an essential need to know the fellow students. Thus, one of the main problems of distance learning is the loneliness, that learners feel, stemming from the absence of personal contact with the teacher and/or with other learners.

To conclude, the issue of loneliness was fully raised in all its intensity, by almost all our subjects. They pointed out their difficulties stemming from the fact that they were unable to discuss the assignment with others and were unable to discuss the problems arising in their work face to face with the teacher.

3.6. Students show high levels of enthusiasm

The students were willing to take part in the program from the first moment that it was presented to them and their parents. During the various phases of the project, all the students showed high levels of motivation and enthusiasm:

“I was very glad to take part in the project”.
“I enjoyed the project very much”.
A festive atmosphere was felt during the first meeting with the students. Student motivation was exceptionally high. Bright eyes and smiles conveyed their enthusiasm. One of the parents indicated:

“At the beginning she (his daughter) was very enthusiastic . . . I think that this is a very interesting attempt . . . I think that the idea of the electronic mail has rendered the subject a very exiting one”.

And another father said:

“...a blessed idea... each time friends came in and found her in front of the computer, she would say proudly that she is taking part in a university project and sends electronic mail and files to the teacher just like in the university. I think that this really stirred the curiosity of her friends.”

No doubt that the students who took part in the project felt enthusiasm and pride from the mere fact that they were part of a unique and innovative program. However, this enthusiasm abated during the program due to the frustrations the students felt resulting from technical difficulties that curbed their progress.

3.7. Summary of the findings

Six themes appeared over and over again throughout the interviews, observations, assignments, questionnaires and portfolios. Based on a careful study of these six themes, it appears that there are two dimensions that all of these six themes have in common. The first dimension relates to the technological aspect and the second dimension relates to the social aspect. A summary of the findings shows that children aged 11–12 find it difficult to learn in a distance learning computerized environment, a situation in which there is no face-to-face contact with the teacher or with other students. From the technological dimension, the students who took part in this study felt anxiety when it came to the use of the computer as a learning tool. They ran into problems when they had to work with e-mail and the Internet and they had difficulties whenever they ran into simple operational problems. From the social dimension, the students felt isolated and experienced problems when they had to work with the computer on their own. In order to fulfill their social and learning needs the students turned to their parents for help, required face-to-face meetings with the teacher and with other students who were taking part in the course, and sometimes used the phone rather than e-mail for communication with the teacher.

In answer to the study question (see first paragraph of the introduction) it appears that on the cognitive level, the students who participated in the study felt that although distance learning entails quite a few difficulties, this method of learning can also be a pleasant experience. On the affective level, the students felt isolated and were apprehensive of the computer as a learning tool. The students felt the need for emotional support. On the other hand, most of the students were enthusiastic and exhibited a great deal of motivation for learning by way of this new method. On the conative level, the students were not satisfied with interaction with the teacher through the use of e-mail only but preferred using the telephone a great deal and meeting with the teacher face-to-face. Most of the students participating in the study turned to their parents for help.
It is quite possible that the findings of this study reflect present day development of events. As the use of the PC, Internet, and e-mail intensifies and becomes more and more prevalent and the earlier children are exposed to technology, the greater the probability that children will feel more comfortable when learning in a distance learning computerized environment. It will be necessary to study this latter point in the future in both qualitative studies (as described in this paper) and in quantitative studies.

4. Conclusion

Distance learning is generally used in industry, in schools and in the academy in order to reduce cost, reach as large an audience of geographically distanced students as possible, allow students who are unable (physically) to come to the learning institution a chance to learn, and allow each student to progress at his/her own appropriate individual rate (Brown, 2000). Although our research was carried out on a group of 11–12 year old students, we recommend applying some of our findings to adult learners as well. First, we recommend that at the beginning of the course a face-to-face meeting be held. The purpose of such a meeting is for the teacher to get to know the students and vice-versa, and for the students to get to know each other in order to reduce feelings of social isolation and alienation.

The main issue evolving in the research is the student’s loneliness when learning by e-mail, i.e. the lack of personal contact among the learners and between the teacher and the students. This point evolves in most distance learning studies (Eastmond, 1995; Haythornthwaite, 1997). It seems that this is one of the most problematic issues of distance learning. The solution that may be implemented is integration between the asynchronous and synchronous modes of learning. Conference calls, chats, discussion groups and even videoconference may create synchronous communication. Also, according to the research findings we strongly recommend encouraging the students to work in pairs. Each student may work separately, but is connected to his/her partner by e-mail. Thus, the student does not feel completely “on his/her own”.

There is some truth to the fact that lack of eye contact between teacher and student could create a problem both for the teacher and for the student (Willis and Dickinson, 1997). However, on the other hand, the teacher is able to develop a greater personal connection with the student through the use of e-mail than he/she is able to develop in a conventional classroom. In a conventional classroom, a dominant student may monopolizes the discussion (Brown, 2000), but in distance learning of the kind described here, such a situation does not arise.

Another recommendation of a different kind has to do with contending with technical problems throughout the course. In the research, it became clear that 11–12 year olds who study through distance learning require the help of an adult, especially in order to overcome technical problems. In the course described in this paper, aid in solving technical problems was provided by the students’ parents. One may assume that adults learning in this manner would also require technical aid during the period of distance learning. It is up to the educational institution to prepare itself in advance with the necessary help for solving such problems should they arise.

The subject of assessment of the academic achievements in a distance-learning program is an extensive one and we are not going to get into details here. It is sufficient to mention here that by
the time the students who took the course completed the distance learning process described in this paper, all of them carried out the course tasks and acquired the knowledge and skills required to use the computer, the Word processor, e-mail, and the Internet. This finding is in keeping with research carried out on the same subject in regard to adults. As to the latter, it was found that students in distance education settings perform as well or better on assignments and exams in comparison to campus-based students (St. Pierre, 1998).

In addition, it was also found in our research that a course that is carried out using this method is not appropriate to the same degree for every student. We believe that one may assume that this conclusion is relevant to the adult learners as well. It is up to the teacher and/or the educational institution that plans such a distance-learning course to be aware of this fact. In distance learning, as mentioned, it is possible to adapt the rate and level of learning to suit each learner. In addition to this fact, the method is more suitable to the student who is imbued with the following qualities (Rinalta, 1998): persistence; ability to study independently; highly motivated towards learning; mature enough to learn according to such a method; and having exceptionally good organizational ability. The students must be willing to commit themselves and take responsibility. Students suited to distance learning and chosen for distance learning will find a great deal of interest in and derive a great deal of pleasure from the learning experience (LaMaster & Morley, 1999). In terms of young learners (as in our research) the learners are able to develop their electronic literacy skills throughout the learning process (Hindes, 1999; Marttunen & Laurinen, 1999).

We found that learning through the use of e-mail may offer additional pedagogical benefits. In our case, the learning was both active and interactive—the students had to be active and respond in a different manner than they would in a conventional classroom. In the latter situation, the students are usually passive. The students received instant feedback as to their understanding and progress. The teacher was able to keep a fairly close eye on each student’s progress. These pedagogical advantages are relevant to distance learning in adult learner courses as well.

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