An Effective Blended Learning Solution Overcoming Pedagogical and Technological Challenges in a Remote Area – A Case Study

Danny Glick
Edusoft
dannyg@edusoft.co.il

Abstract

Blended Learning, integrating face-to-face instruction with computer-mediated instruction, is a growing phenomenon. Blended solutions present pedagogical and technological difficulties, but a well-executed program can overcome challenges. The city of Kiryat Malachi faced the problem of raising the level of English proficiency of students and new immigrants. In light of past difficulties, the city wanted an affordable computer program to address the language needs of Kiryat Malachi students. Tapuach, a non-profit organization dedicated to closing the digital gap across Israel, provided funding to introduce *English Discoveries Online*, an interactive online English program, to two high schools in Kiryat Malachi as a one-year pilot following a blended model. To ensure successful implementation of the project, the teachers received supplemental training prior to initiating the project. In addition, considerable effort was invested in customization of the online course, integration of the online course with the school textbooks, defining the of role of the teacher in a blended course, and establishing guidelines for creating a connection between the classroom and lab sessions. Analysis of feedback forms, interviews, and observations revealed that overall student and teacher response was extremely positive: students liked the course and felt their English had improved; teachers concurred that the program played a significant part in the students' progress.

Keywords: blended learning, online learning, customization tools.

Introduction

Blended Learning, the integration of face-to-face instruction with computer-mediated instruction to provide a coherent learning solution, is a growing phenomenon. A national survey of over 1000 colleges and universities in North America reveals that blended course offerings have grown dramatically in American higher education in recent years. Survey results show that almost 55 percent of all institutions offer at least one blended course (Allen, Seaman & Garrett, 2007). Moreover, in a higher education survey on the future of online and blended learning (Bonk, Kim & Zeng, 2006), more than 7 in 10 respondents anticipated that by 2013, they will offer over 40 percent of their courses in a blended format. Graham suggests that "the trend toward blended learning systems will increase. It may even become so ubiquitous that we will eventually drop the word *blended* and just call it learning" (Graham, 2006).

Creating effective blended solutions presents difficulties. There are several challenges relevant to the design and execution of blended learning solutions (Graham, 2006):
1) a need to provide professional development for instructors who will be teaching online and face-to-face
2) a need for customizing the materials to the local audience to make them culturally relevant

3) providing learners with technological skills to succeed in both face-to-face and computer-mediated environments

4) The gap between the information and communication technologies available to individuals and societies at different ends of the socioeconomic spectrum can be great.

Yet, when a blended solution is well-executed, challenges may be overcome.

Case Study

Kiryat Malachi is a city which absorbs waves of new immigrants from Ethiopia and Russia. One of the challenges the city of Kiryat Malachi is facing is raising the level of English proficiency of students and new immigrants. In light of past difficulties, the city was looking for an affordable computer program to meet the educational challenges their population faces. Tapuach, a non-profit organization dedicated to closing the digital gap across Israel, provided funding to introduce *English Discoveries Online*, an interactive online English program. Kiryat Malachi introduced *English Discoveries Online* into two of their nine upper schools as a one-year pilot program.

To increase student motivation and satisfaction, a blended model was chosen. To ensure successful implementation of the project, *English Discoveries Online* Pedagogical Manager met with Kiryat Malachi English Coordinators and teachers to outline the program needs. To address the four challenges described in the Introdcution, *English Discoveries Online* Pedagogical Manager and Kiryat Malachi teachers designed the following model:

Challenge I – Professional Development
Solution

Extensive training was provided to the entire English teaching staff. The training objectives were familiarizing teachers with the new technology; familiarizing teachers with new methodologies; defining the role of the teacher in a computer-mediated course; and laying down guidelines for preparing students for the lab session. Each training session was followed by hands-on practice. Once the program was underway, the *English Discoveries Online* Pedagogical Manager and Tapuach Project Coordinator provided ongoing follow-up support, including visiting the schools, observing classes, and maintaining contact with the teachers.

Challenge II – Customization
Solution

The schools were using popular commercial textbooks for teaching English. *English Discoveries Online* Pedagogical Manager analyzed the textbook language objectives and matched them with the online course objectives (See Figure 1). For units that did not have adequate parallel material in the EDO program, such as certain historical topics, *English Discoveries Online* Pedagogical Manager created a bank of custom components, using the built-in Authoring Tool. The integration process and the Authoring Tool components enabled teachers to follow a highly effective blended course where each lab session expands on a previous classroom session and offers additional practice.

Amit 4	English Discoveries Online			
	Skill	**Level**	**Unit & Title**	**Summary**
Life Stories: Famous People pp 70-71 Exercise 1, 2	Vocabulary	Basic 3	**Authoring Tool:** Job Descriptions	**Student Task:** Students match definitions of jobs to job titles. Students write about one job from the list that they would like to do.
Life Stories: An Interview p 72	Listening/ Reading	Intermediate 1	Arts and Entertainment: Radio: Music	A radio interview with members of the rock band, "The Institute of Music".
	Grammar	Basic 2	Buying and Selling: Grammar: Be-Past Questions	Presentation and practice of questions using the past form of the verb "Be".
	Grammar	Basic 2	Interesting People: Grammar: Past Simple Questions	Presentation and practice of questions using the Past Simple.
Life Stories: A Life Story pp. 74-76 Exercises 1, 2, 3, 4	Writing	Basic 3	**Forums:** Life Stories: Interview Someone	**Student Task:** Students interview an adult (parent/family member) and create a time line for that person. Students post the time line on the Forum.
Life Stories: More Life Stories pp. 76-79	Vocabulary	Basic 3	**Authoring Tool:** Famous People 1	**Student Task:** Students do exercises based on verbs and nouns.
Life Stories: Man of the Oceans pp 80-81	Reading/ Writing	Basic 3	**Authoring Tool:** Famous People – Jacques Cousteau Famous People – Golda Meir	**Student Task:** Students answer various content questions about the personalities from the book.

Figure 1. Sample Integration Page

Challenge III – Technological Skills
Solution

To provide learners with technological background to succeed in the online course students went through a 2-hour face-to-face orientation session. The objective of the orientation session was to introduce the online course and its special features; to introduce the Communication Tools and to discuss the course structure. The orientation session was followed by hands-on practice. Students also received a User Manual, a Troubleshooting Guide and a Frequently Asked Questions Guide.

Challenge IV – No Access to Technology
Solution

To support students who had no computer at home or no Internet connectivity, the program was installed in the school computer lab. Students without a personal computer were encouraged to stay in the lab after school hours to work on weekly.

Methodology

The pilot began in the middle of the academic year, January 2006. Two classes (N=97) from two junior high schools in Kiryal Malachi participated in the pilot: 48 7th Graders and 49 8th Graders. Each group was divided into two smaller groups, all of which participated in a weekly 2-hour lab session (See Figure 2). The lab sessions were offered after school hours under the supervision of a teaching assistant. To follow a more meaningful, integrated program and to optimize the communication between teaching assistants and classroom teachers, teaching assistants were given a copy of the Integration Booklet (See Figure 1) and were instructed to assign lab components which matched weekly classroom objectives.

To create an effective blended model, the role of the teacher in the course was clearly defined:

Classroom teachers should
1. Prepare students for lab session in pre-lab session by introducing computer component (names of characters, etc.)
2. Assign up to three focus questions for students to answer while working on the component (relationship between characters, etc)
3. Expand on computer component in post-lab session by asking follow-up questions on computer component

Teaching assistants should
1. Assign weekly computer component in the lab
2. Refer to Integration Booklet to ensure weekly lab component matches classroom objectives
3. Monitor student progress using the built-in Management System
4. Modify the course in accordance with student progress
5. Communicate with classroom teachers

Sunday	Monday	Tuesday	Friday
Pre-lab activities	Pre-lab activities	Pre-lab activities	Pre-lab activities
7th Graders - Group A (2 hrs)	8th Graders - Group A (2 hrs)	7th Graders - Group B (2 hrs)	8th Graders - Group B (2 hrs)
Post-lab activities	Post-lab activities	Post-lab activities	Post-lab activities

Figure 2. Weekly Timetable

To measure the outcome of the course, three tools were used:

1) Student Feedback Forms -
Halfway though the pilot and at the end of it, students were asked to complete a Student Feedback Form (see Appendix A) with questions on special features, help and support tools, language tools, communication tools and teacher support.
2) Interviews -
Three times during the course, the *English Discoveries Online* Pedagogical Manager and Tapuach Project Coordinator interviewed students and teachers who participated in the pilot. Students were asked questions about course structure, ease of navigation, level of motivation, user friendliness, and connection between classroom and lab sessions.
3) Observations -
Three times during the course, the *English Discoveries Online* Pedagogical Manager and Tapuach Project Coordinator observed sessions in the lab. Special attention was given to interaction between students and the program and between students and teacher assistant.

Results
Analysis of Feedback Forms (N=49), interviews and observations revealed overall feedback was extremely positive (See Figure 3 and Figure 4):

* 65% of respondents said the program was easy to use.
* 50% of respondents said that the Help Tools (Dictionary and See Translation) were helpful.
* 75% of respondents enjoyed the interactive Speech Recognition tool
* 75% of respondents enjoyed the sessions in the lab.
* 80% of respondents felt their English had improved.
* 57% of respondents said they would like to use *English Discoveries Online* in the future.
* 60% of respondents said they would recommend the program to a friend.

* Students like the program, and expressed their interest in access being increased from two to four hours per week.
* Teachers concurred that *English Discoveries Online* played a significant part in the students' progress.
* Teachers were interested in offering increased lab time.
Analysis of the feedback forms revealed two weaknesses in the existing model:
* 30% of respondents expressed their dissatisfaction with the fact that the online work was done after school.
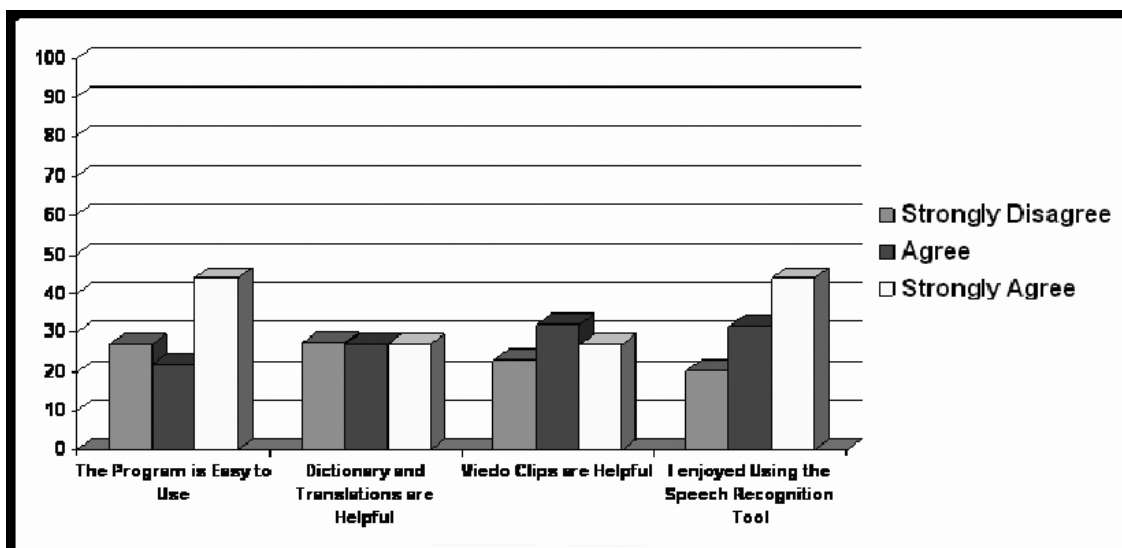* Students expressed their interest in being allowed access from home.

Figure 3. Student feedback on online course and special features (in percentage)
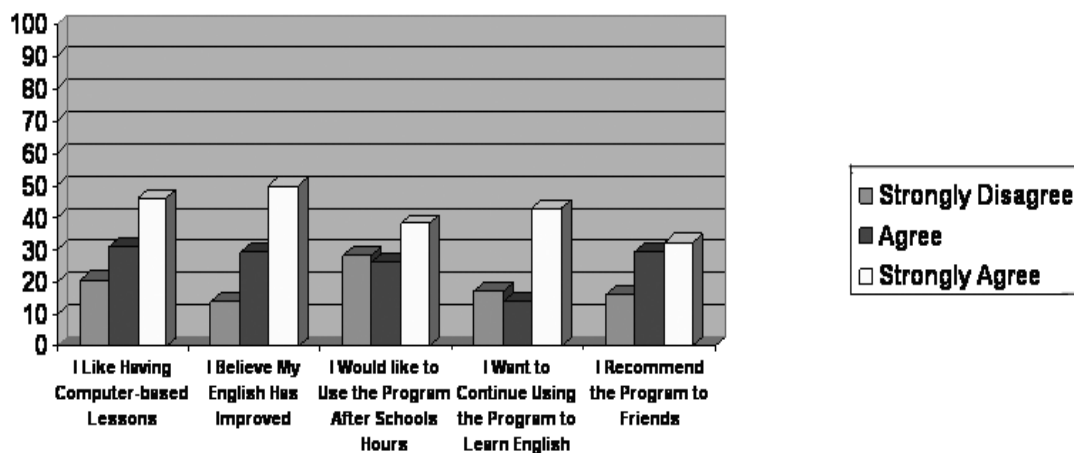

Figure 4. Student feedback on the course (in percentage)

Conclusions

Despite the four challenges relevant to the design and execution of blended learning solutions (Graham, 2006), feedback forms and interviews revealed that the blended solution in Kiryat Malachi was well executed. The Kiryat Malachi study suggests that in order for blended learning solutions to be well executed, four key elements need to be considered: First, teachers should go through teacher training and become fully familiar with the computer program. This

fits well with Graham's claims (2006) that there is a need to provide professional development for instructors that will be teaching online and face-to-face. The second element is to clearly define the role of the teacher in the course. Research indicates that instructors have myriad roles and responsibilities to coordinate in order to achieve e-learning success. A delicate and informed balance between these roles is vital to the success of e-learning (Bonk, Olson, Wisher & Orvis, 2002). Third, school local materials and computer components should be analyzed, customized and matched where possible. Graham (2006) claims that the blended solution should address the need to find balance between global and local interests; in the Kiryat Malachi study, the need to find such a balance was addressed through the integration between school local materials and *English Discoveries* materials. Fourth, lab sessions should be followed by post-lab follow-up activities. Research indicates that instructor-led learning events is an important element of any blended learning process (Graham, 2006; Carmen, 2002).

References

Allen, I. E., Seaman, J., Garrett, R. (2007). *Blending in: The Extent and Promise of Blended Education in the United States*. Sloan-C, Needham, MA. Available at www.blendedteaching.org

Bonk, C. J. and Graham, C. R. (Eds.). (2006). *Handbook of blended learning: Global perspectives, local designs*. San Francisco, CA: Pfeiffer Publishing.

Bonk, C. J., Olson, T. M., Wisher, R. A. and Orvis, K. L. (2002). Learning from focus groups: An examination of blended learning. *Journal of Distance Education, 17(3)*, 97-118.

Carmen, J. M. (2002). Blended Learning Design: Five key ingredients. Available at http://www.knowledgenet.com/pdf/Blended%20Learning%20Design_1028.PDF

Graham, C. R. (2006). Blended Learning Systems: Definition, Current Trends, and Future Directions. In Bonk, C. J. & Graham, C. R. (Eds.). *Handbook of blended learning: Global perspectives, local designs*. San Francisco, CA: Pfeiffer Publishing.

Appendix A. Student Feedback Form

Please answer the following statements 1-3 (1= strongly disagree, 3= strongly agree).

The Program and Features	1	2	3
The program is easy to use.			
The **Dictionary**, **Help** and **Translation** features are helpful.			
The video clips and animation help me understand the materials.			
The Practice explanations are clear.			
The instructions and questions in the component tests are clear.			
I enjoy using the **Speech Recognition** feature and find it easy to use.			
General	1	2	3
I enjoyed the computer-bases lessons.			
I would like to use the program after school hours.			
I would like to continue using **EDO** to learn English.			
I would recommend **EDO** to other students and teachers.			
I believe my English has improved after using **EDO.**			