MODEL OF THE "MEDIATING TEACHER" IN DISTANCE LEARNING ENVIRONMENTS: CLASSES THAT COMBINE ASYNCHRONOUS DISTANCE LEARNING VIA VIDEOTAPED LECTURES

Aryeh Ben-Chayim & Baruch Offir
Bar-Ilan University, Israel

Abstract

This study investigated a distance-learning model that includes a *mediating teacher* in the classroom, in addition to the teacher teaching from a distance. The study compares the characteristics of the mediating interaction between teachers and students in high school classes that include asynchronous distance learning, in which a mediating teacher is present in the classroom in addition to the teacher who is teaching from a distance via videotaped lectures. Teachers who had training for mediated teaching in the classroom in an asynchronous distance- learning environment were better mediators than teachers who did not receive training for mediated teaching.

Theoretical Background

The Information Technology (IT) Learning Revolution in general, and distance learning in particular, have a significant influence on teaching methods (Horizon Report, 2008; Milne, 2007; Moore & Kearsley, 2005). An approach of *blended learning* (Konja & Ben-Zvi, 2009) or a *hybrid approach* (El Mansour & Mupinga, 2007), which combine distance learning with face-to-face learning by a lecturer, are becoming more prevalent in the academia.

A combination of IT with education can assist in shaping teaching processes and methods, where the teacher serves as a mediator and promotes learning, and is not necessarily the sole source of knowledge (Fullan, 2000; Harasim, 1993; Hayes, 2007; Muri-Herzing, 2004; Offir, 2010; Salomon, 2000). Theories on distance teaching and learning (Holmberg, 2007; Moore, 2007; 2013; Moore & Kearsley, 1996) as well as research findings (Blau & Barak, 2009; Kock, 2007; Nachmias, Mioduser, & Shemla, 2000; Offir, 2006; 2010; Offir & Lev, 1999; 2000; Offir, Bezalel-Rosenblat, & Barth, 2007; Offir, Lev, & Bezalel, 2008; Offir, Lev, Lev, Barth, & Shteinbok, 2004; Rovai, 2002; Weimer, 2013) indicate that classical distance learning environments restrict important pedagogical factors such as student-teacher and student-student interactions.

Following these findings, the goal of the present study is to propose a change in the distance learning method and in the teachers' roles and to test a model of a *Mediating Teacher* for distance teaching and learning environments. The model proposes a combination between a teacher who is an expert in the content who gives the lesson in parallel to several classes either synchronously or asynchronously through videotaped lectures, and a mediating teacher who is present in each classroom. This enables the *mediating teacher* to find time for issues which are beyond the teaching contents, such as mediating a sense

of efficacy, mediating discipline and increasing the motivation to learn, mediating expansion and development of learning and thinking skills and mediating regulation of behavior (Klein & Sobleman, 2010), which were found to be essential in the distance learning environment. This model is based on Feuerstein, Rand and Hoffman's (1979) Mediated Learning Experience (MLE) theory.

The study compares the characteristics of the interaction between teachers and students in high-school classes that include asynchronous distance learning, in which a mediating teacher is included in the classroom (all teachers underwent training by the research team). The mediation components investigated in the study included: intentionality and reciprocity (two-way communication between the student and the teacher), meaning (the manner in which the student understands why he/she is learning, in order to increase motivation), transcendence (moving the learning from its connection to the here and now to material learned, material to be learned and meta-cognitive thinking), a feeling of confidence (affording encouragement and reinforcements to the students, while explaining the reason for success) and regulation of behavior (impartation of skills to the student for planning and controlling his/her learning). The study was based mainly on Klein's method for analysis of mediating interactions between teachers and students, the OMI (Observing Mediational Interactions) (Klein, 1988; Klein, Raziel, Brish, & Birenbaum,1987; Klein, Weider, & Greenspan, 1987).

The *Mediating Teacher* model proposes a learning and teaching process based on two channels: a content channel carried out from a distance and a mediation channel, which is performed in the classroom, where the *mediating teacher* who is found in the classroom bridges between them.

Methods

The research involved both quantitative and qualitative analyses of data. The independent research variable was training teachers in mediation. The dependent variables were the students' assessment of the mediated teaching, the frequency of the occurrence of the mediation components and the communication chains in the mediated teacher-student interaction. The mediator variable was the teacher's sense of efficacy.

Participants

The participants included 12 teachers and 116 students who were divided into an intervention group comprised of classes of six teachers who received training for mediated teaching and used videotaped lectures in their lessons and a comparison group of the classes of six teachers who did not receive such training and used videotaped lectures in their lessons.

Research Tools

The research tools included a questionnaire for evaluating mediated teaching – the Mediating Interaction Evaluation Questionnaire (MIEQ), which was developed by the researcher, an observation tool for analysis of mediating interactions, OMI (Klein, Weider & Greenspan, 1987) and a Teacher's Sense of Self-efficacy Questionnaire (Rich, Lev, & Fischer, 1996).

Procedure

An intervention based on Klein's (2004) Mediational Intervention for Sensitizing Caregivers (MISC) model was performed during the study. The teachers received instruction for mediated teaching that dealt in two dimensions of the model – the teaching dimension and the communication dimension. The study was carried out in three stages:

- Pre stage: All teachers in both groups (intervention and comparison) were videotaped at the beginning of the year in a lesson in which they included a videotaped lecture. The teachers chose a videotaped lecture that refers to the material learned in the class from a database of recorded lessons. The MIEQ for evaluating mediated teaching was administered to the students at the end of the lesson.

- Intervention stage: The teachers in the intervention group received instruction for mediated teaching during the school year, with inclusion of a videotaped lecture in the lesson, whereas the comparison group received no instruction.

- Post stage: All teachers in both groups (intervention and comparison) were videotaped at the end of the year in a lesson in which they included a videotaped lecture. The students were administered a questionnaire for evaluating mediated teaching at the end of the lesson.

Results and Discussion

It was found that teachers who received training for mediated teaching in an asynchronous distance-learning environment that includes videotaped lectures in their lessons are better mediators than teachers who do not receive such training.
This finding is expressed in three dimensions: The teaching dimension, the communication dimension and the mediation dimension.

In the teaching dimension, the teachers who received training make greater use of the mediation components during their teaching in the classroom. The results of a linear log test for the frequency of the mediation components are presented in Table 1. A significant difference was found in all five mediation components: focusing (intentionality and reciprocity); meaning; transcendence; feeling of confidence and regulation of behavior.

Table 1

Standardized (Z) Values for Main Effects and the Effect of the Interaction Between the Two Research Groups and the Three Research Stages

Type of Effect	Estimate	Standard Error	*Z*
Focusing (intentionality and reciprocity			
Group X Research Stage	.20	.07	2.74**
Group	-.27	.07	-3.72***
Stage	.11	.07	1.49
Meaning			
Group X Research Stage	.11	.05	2.33*
Group	-.07	.05	-1.51
Stage	.04	.05	.74
Transcendence			
Group X Research Stage	.27	.06	4.58***
Group	-.26	.06	-4.46***
Stage	-.13	.06	-2.18*
Feeling of Confidence			
Group X Research Stage	.36	.14	2.61**
Group	-.53	.14	-3.88***
Stage	.17	.14	1.22*
Regulation of Behavior			
Group X Research Stage	.36	.14	2.59**
Group	-.33	.14	-2.34*
Stage	.20	.14	.12

*p<.05, **p<.01, ***p<.001

The teachers who received training expanded the topic learned in the videotaped lesson and connected it to material that was learned in the past and to material that is relevant to the students' everyday life. These teachers also asked the students to reach conclusions and perform comparisons from the material learned in the videotaped lecture (transcendence). The teachers encouraged their students more and supported them when necessary (mediation for a feeling of confidence).

The teachers in the intervention group were found to maintain longer communication and discourse with the students. The results of a linear log test for the communication chains are presented in Table 2. The use of videotaped lectures had a positive significant effect on the length of the communication chains between the teachers and the students.

Table 2

*Standardized (Z) Values for Main Effects and for the Effect of the Interaction
Between the Two Research Groups and the Three Research Stages*

Type of Effect	Estimate	Standard Error	Z
Number of Communication Chains			
Group X Research Stage	-.10	.10	-1.0
Group	-.05	.10	1.17
Stage	.11	.07	1.49
Length of the Communication Chains			
Group X Research Stage	.24	.07	3.50***
Group	.11	.07	1.60
Stage	-.35	.07	-5.14***
Length of Videotaped Lecture			
Group X Research Stage	-.11	.07	-1.50
Group	.10	.07	.15
Stage	.05	.07	.66
Number of Times the Video was Halted			
Group X Research Stage	-.05	.12	-.37
Group	-.12	.12	-1.00
Stage	-.15	.12	-1.20

***p<.001

The students of the teachers in the intervention group evaluated the mediating
teaching level as higher. A significant difference was found in four of the five
mediation components: intentionality and reciprocity, meaning, feeling of
confidence and regulation of behavior. Pearson correlations between the
students' evaluation of the mediated teaching and the frequency of the
appearance of the mediation components are presented in Table 3. It should be
noted that in the context of this finding, the mediation components of
mediation for meaning (motivation) and for regulation of behavior were found
to be essential for students in distance learning environments (Heum & Joon,
2013; Hodges, 2005; Schunk & Zimmerman, 2007).

Thus, teachers who received training for mediated teaching in an
asynchronous distance learning environment and used videotaped lectures of a
teacher teaching from a distance, were more attentive to the students, referred
to their questions and focused them during the videotaped lecture (mediation
for focusing – intentionality and reciprocity). The teachers held more
discussions and enabled the students to participate in them by asking questions
and giving an explanation from the videotaped lecture (mediation for
meaning).

Table 3

Pearson Correlations and Frequency of the Mediation Components among
Students whose Teachers Received Training in Mediated Teaching (N=57)

Students' evaluation of mediated teaching	Frequency of the appearance of the mediation components				
	Intentionality and reciprocity	Meaning	Transcendence	Feeling of confidence	Regulation of behavior
Intentionality and reciprocity	**.36****	.42**	-.25*	.10	.39**
Meaning	.23*	**.26***	-.11	.-04	.28*
Transcendence	.22	.29*	**-.19**	.02	.30*
Feeling of confidence	.45**	.48**	-.26*	**-.06**	.35**
Regulation of behavior	.26*	.29*	-.14	.06	**.32****

*p<.05, **p<.01

The teachers used work sheets and asked the students to think before they
answer questions and plan and look at their answers critically with reference
to the topic learned in the videotaped lesson (mediation for regulation of
behavior).

Conclusions

The findings are in agreement with the claim that the teacher can serve as a
mediator and a promoter of learning in IT environments, and not necessarily
as the sole source of knowledge (Harasim, 1993; Muri-Herzig, 2004; Offir,
2010). The teacher can thus help bridge the physical and pedagogical gap
(Moore, 2007; 2013; Moore & Kearsley, 1996; 2005; Offir, 2010), which is
created due to the distance between the teacher teaching from a distance
and/or his/her videotaped lectures and the students. This may help overcome
the pedagogical limitations of these environments (Blau & Barak, 2009; Kock,
2007; Nahmias et al., 2000; Offir, 2006; 2010; Offir & Lev, 1999; 2000; Offir,
Bezalel-Rosenblat, & Barth, 2007; Offir, Lev, & Bezalel, 2008; Offir, Lev,
Lev, et al., 2004; Rovai, 2002; Weimer, 2013).

Assuming that the students also acquire the content learned in the lesson
through videotaped lectures, the findings indicate that teachers who are trained
for mediated teaching can plan the framework of their teaching in the
classroom such that they can be free for more individual and personal
teaching. They can encourage the students to feel confident, mediate for
meaning and strengthen the motivation to learn, to regulate behavior, plan and
control the learning process and expand the thinking skills that were found to
be important and essential for students in distance learning environments
(Aileo, Cascio, Ficarra, Messina, & Severino 2011; Cho & Kim, 2013;
Garrison, Anderson, & Archer, 2001; Hodges, 2005; Wang & Wu, 2008;
Zhang, Duan, & Wu, 2001).

The findings from the subjective perspective of the students and from the objective perspective of observations of video-filmed mediation interactions between the teachers and the students support the basis of the Mediating Teacher model which is proposed in the present study for distance learning environments. The findings show that all three factors: the teacher who teaches from a distance, the mediating teacher in the classroom, and the students in the classroom contribute to learning.

The teaching and learning process includes the transmission of numerous components: information, skills, abilities, and values. Future studies should test the role and contribution of each of the above three factors (the teacher who teaches from a distance, the mediating teacher in the classroom and the students in the classroom) in this process.

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Author Details
Aryeh Ben-Chayim
aryebh@walla.com
Baruch Offir
offir-e@inter.net.il