

# Managing Online Courses: Problems and Worked-Out Solutions

## The Case of the Pre-Service Teachers

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**Abstract**— *This article attempts to present and categorize problems that encounter pre-service and new teachers who teach distance learning courses for intermediate school pupils. It also describes worked-out solutions used successfully by the pre-service teachers. The problems found were characterized as: computer literacy problems, infrastructure problems, communication problems, management problems, learning problems and emotional problems. The worked-out solutions categories included: communication means, management means, documentation means and training. This research shows that pre-service and new teachers can succeed in managing and teaching internet-based distance courses, synchronously or asynchronously, if they invest enough time and effort in applying mainly communicational means to overcome problems encountered, with being aware of the other solution means too.*

**Index Terms**—distance learning, managing online courses, pre-service teachers.

### Introduction

Problems that confront teachers and learners in distance learning which uses technological platforms have attracted the attention of researchers since the beginning of this kind of learning. [1] Pointed at the lack of experience in both provider and participants in e-mail that could cause less satisfaction in distance learning experience. Ref. [3] mentioned the following problems that might confront distance learning in the students' case: distance learners are more likely to have insecurities about learning, lack of feedback or contact with the teacher, the lack of support and services such as providing tutors, academic planners and schedulers, and technical assistance, the feelings of alienation and isolation, the special needs of students undertaking distance education for the first time, and the lack of students' training, particularly in reference to technical issues. Ref. [3] mentioned the following problems that may confront distance learning in the teachers' case: lack of staff training in course development and technology, lack of support for distance learning in general, and inadequate faculty selection for distance learning courses. Ref. [8] described problems of social interactions and technology related problems. Ref. [9] described distance learning problems that may prevail in

the quality of instruction, cost effectiveness, misuse of technology, and the attitudes of education agents like instructors, students, and administrators. Ref. [6] said that online discourse may suffer from insufficient group coordination or from deficiencies in the coherence of contributions and point that learners may neglect the discourse with other learners and focus instead on one prominent person. Ref. [4] mentioned lurking as one of the main problems of online learning, which is caused by relative invisibility of policy statement; various usability issues in registering and way-finding, lack of suitable content and complex structure of the online course. Ref. [5] described the communication barriers that include technological, physical, language and psychological barriers. Ref [2] pointed at the distraction as a problem for synchronous learning and suggested as a possible solution that teachers ask students to answer some questions by text or audio.

None of the research discussed above involve pre-service teachers who experience teaching internet-based distance courses to pupils through their practical training. It's the aim of this research to study the problems and difficulties these preservice teachers encounter while teaching informal internet-based distance courses for their pupils. The research will also follow how these pre-service teachers tried to overcome these problems, and will present the solutions worked out by them.

### Educational Setting

#### Research goals

This research attempts to present and categorize problems that encounter pre-service teachers who teach distance learning courses for intermediate school pupils. It also describes worked-out solutions used successfully by the pre-service teachers.

#### Participants

The participants were third year pre-service teachers in a teacher seminar who studied to major in mathematics and computers. They taught internet based distance courses for intermediate school pupils in the frame of their final assignments in the course 'technology in mathematics education'. There were 25 pre-service

teachers in the course, out of which eight chose to study issues relating to mathematics education that involved using internet based platforms. There were three platforms used: one asynchronous platform and two synchronous platforms. The asynchronous platform is called MofetNet<sup>1</sup>. One of the synchronous platforms is the Messenger and the other is called Interwise<sup>2</sup>. The participants worked in pairs and taught internet-based distance courses that included 8-12 pupils each. The pupils came from schools in which the pre-service teachers did their practical training.

### **Data Collection**

The data was collected from a forum in which the pre-service teachers reported and discussed the problems they encountered while managing the online courses.

### **Categorizing the Problems**

To categorize the problems that confronted the participants in managing distance learning courses that use the internet technology we used the process of open, axial and selective [7].

### **Findings**

Below In this section we describe the various problems that the pre-service teachers encountered while teaching internet-based distance courses and the solutions they worked out to overcome these problems.

#### ***Problems and Worked-out Solutions in both Synchronous and Asynchronous Platforms***

##### **Computer literacy problems**

Pupils faced difficulties when operating the platforms of distance learning or the communication tools used to communicate between them and their teacher or between each other. For example: encoding the presentation of the text (in a multilingual environment) to the proper language when reading a message in the email, or applying for registration in the platform system, or forgetting the username or the password with which they enter the learning platform, or basic actions that are needed to participate in an electronic forum or to send an assignment.

The pre-service teachers used the following methods to overcome the technical problems:

1. Meeting with their pupils at the beginning of the course in the school in order to explain to them how to open an email, how to encode a message to the proper language, how to register to the distance learning platform, how to participate in a forum and how to send an assignment.

2. Writing help documentations that describe how to register and work in a distance learning platform and email environment.
3. In the case of the Interwise, the pre-service teachers reminded the pupils, at the beginning of each lesson, how to operate the various features of the platform.

##### **Infrastructure problems**

Two pre-service teachers had difficulties at the beginning because there was no internet in the school, so they couldn't explain to the pupils, in a practical way, how to register and operate the distance learning platform. This caused some pupils to delay their registration and to slow the flow of the course. Another problem was the disconnection of the internet in the pre-service teachers' or the pupils' houses which also slowed the flow of the course.

To overcome these problems, the pre-service teachers explained to the pupils how to register and participate in the distance learning platform orally and by phone.

##### **Communication problems**

Some pupils did not open their email frequently. Therefore, they missed the instructions and explanations that their teachers sent to them, so they missed learning the new topic.

To overcome these problems, the pre-service teachers called the pupils and requested them to open their emails.

##### **First experience problems**

Two pre-service teachers said that the pupils' young age (seventh graders) makes it difficult for online teachers to cover enough material in a given time, because it takes a long time for pupils of this age to get used to a new learning environment. For example, some pupils ignored the email messages sent to them and the instructions written in the course site, and waited until they met the pre-service teachers in the school, and only then they asked them about topics that they did not fully understand. This enforced the pre-service teachers to review learning materials from previous lessons again and again' which consequently delayed the covering of new learning material.

The pre-service teachers said that online teachers should be patient when they teach distance learning courses to pupils who have not experienced this mode of learning before. To help the pupils overcome the problems of the first experience, they sometimes called them and encouraged them to participate more actively in the course. They also did that when they met them in their school once a week.

#### ***Problems and Worked-out Solutions in the Synchronous Platform: the Case of the Messenger***

##### **Participant availability problems**

One pre-service teacher said that it was difficult for her to agree with her pupils on setting the sessions learning

<sup>1</sup> It can be found at <http://mofetnet.macam.ac.il/>

<sup>2</sup> It can be found at <http://interwise.macam.ac.il/mofet/portal/elkasami/>

time, because she was mostly available on the morning but her pupils were mostly available on the evening.

To overcome this problem, the pre-service teacher had to be more flexible in order to meet the time requirements of the pupils.

### **Attendance problems**

Another pre-service teacher said that not all her pupils attended the synchronous class at the agreed time.

To overcome this problem, the pre-service teacher contacted the absent pupils to verify the reasons behind their absence, and to encourage them to be present in the remaining lessons.

### **Dealing with considerably large group of pupils**

One pre-service teacher said that it was difficult for her to teach ten pupils the process of registration to the distance learning system, and the procedure to open an email account as a precondition for the registration. She managed to help just five of the pupils to register. She reflected on what happened saying that this could have happened because many pupils asked, in the messenger, different questions at the same time, so it was difficult to answer all of them. Another pre-service teacher thought that this may have happened because pupils do not read what other pupils ask or the teacher's answer to them. They just concentrate on their own questions, ask them and wait for answers to them.

To overcome these problems, the pre-service teachers explained to the pupils that they should behave as if they are in a regular class, and pay attention to each other's questions, as well as to the answers to such questions. They announced that if the pupils keep "talking" without order, they will split the group into two different ones, so they would be able to keep an accepted learning pace. That made the pupils comply with the preservice teachers requests.

### **Lack of information about the users**

One pre-service teacher said that the lack of presented personal information about the pupils in the messenger, like the unlisting of their phone numbers, makes it difficult for her to inquire why they sometimes disconnect; whether it is because the disconnection of the internet or for other reasons related to the pupils.

To overcome this problem, the pre-service teachers collected an acquaintance list, in order to keep the names and phones of the pupils in reach.

### ***Problems and Worked-out Solutions in the Synchronous Platform: the Case of the Interwise***

#### **Unsaved Protocols**

One pre-service teacher pointed that absent pupils could not get the learning material or the teacher explanations that were presented synchronously through the Interwise lessons, because this substance was not saved like in the case of asynchronous platform.

To overcome this problem, the pre-service teacher recorded herself and sent the files of the learning material

and her recorded explanations to all the pupils who were absent.

### **Communicational problems**

The pre-service teachers pointed that the pupils may be distracted from the Interwise lesson without the awareness of the teacher.

To overcome this problem, one of the pre-service teachers used to ask her pupils yes/no or multiple questions to find out who was distracted.

### **Infrastructure problems**

The frequent infrastructure problems, such as the microphones malfunction affected negatively the flow of the lessons.

To overcome this problem, the pre-service teacher sent the files of the learning material by email to all the pupils, and, at the beginning of the following lesson, she explained shortly the material that she could not cover online in the previous lesson.

### **Lack of platform features**

Some pre-service teachers said that the Interwise platform does not have a feature that allows keeping the pupils' sent assignments in the course site, so pupils had to send them by email. This made it difficult for the pre-service teachers to track the assignments, because they received many email messages everyday.

To overcome this problem, one of the pre-service teachers created a special folder in their email inbox to arrange the pupils' assignments in it, so they could retrieve them easily.

### ***Problems and Worked-out Solutions in the Asynchronous Platform: the Case of the MofetNet***

#### **Emotional problems**

One pre-service teacher said that some pupils complained about the physical absence of the teacher. She explained this complain by the pupils' need for the assurance of the physical presence of the teacher, even when they work independently, and that working without the physical presence of a teacher may cause pupils not to be sure of their learning actions.

To overcome this problem, the pre-service teachers intensified their presence in the distance learning environment, by giving more frequent feedback to the pupils when they write in the forum or send an assignment.

#### **Active learning problems**

Some pupils did not interact in the forums. They sent their own answers and rarely replied or commented on other pupils' answers. Others were late to send their answers to the forum or their assignments.

To overcome these problems, the pre-service teachers used various communication methods to increase their pupils' involvement:

1. Calling to remind them regarding the assignments and forum discussions.
2. Sending them reminding email messages.
3. Inviting them to their own houses to make them feel comfortable and, at the same time, to talk about the new experience. The pre-service teachers called these meetings heart-to-heart meetings indicating that after the meetings the pupils and the pre-service teachers got closer to each other.

**Discussion and Conclusions**

The participants in this research pointed at problems that were mentioned in the literature, but they also reported other ones, especially when describing the difficulties they met when using a synchronous platform designated for distance learning. The pre-service teachers did not only apply solutions that researchers already pointed at, but they also initiated other solutions too, as making phone calls to their pupils and inviting them to their own houses. Certainly, teachers are not expected to call their pupils to encourage them to participate actively in their courses, neither are they expected to invite their pupils to their own houses in order to make them feel at home, but these initiatives, that the participants performed, probably point at their understanding that without such attempts the pupils would not be active in the distance learning courses, especially when these courses are not obligatory nor they would receive grades on them.

Pre-service teachers tried every communication channel with their pupils in order to attract their attention to the course and make them active learners, while they did not think about other possibilities such as convincing the actual teachers of the pupils to give them bonus on their participation in the distance learning courses. Ref. [4] suggests reward systems and face-to-face meetings as means to overcome the modest participation of learners in the electronic forums. The participants in this research not only used the suggested face-to-face meetings but heart-to-heart house meetings too, if to use the words that the participants used to describe the house meeting that they held with their pupils. The pre-service teachers did not use reward systems, maybe because they were not the pupils' actual teachers, or because not all the pupils of the actual class participated in the distance learning course.

It seems that the participants felt that they are part of a novel educational approach to teaching and learning, so they made every attempt to make their new experience succeed. The successful attempts and solutions that the pre-service teachers initiated, may imply that determined new teachers can succeed in managing online courses and would be able to solve the various problems that they may encounter.

This research has contributed two main contributions: constructing a set of categories which characterize the problems that may confront pre-service teachers, when coming to teach distance learning course, and examining the worked-out solutions that pre-service and new teachers might use to overcome these problems. We can characterize the problems as: computer literacy problems, infrastructure problems, communication problems, management problems, learning problems and emotional

problems. The solutions categories include: communication means, management means, documentation means and training.

We describe, in TABLE I, the various categories of the problems that the pre-service teachers encountered while teaching intermediate school pupils in both synchronous and asynchronous platforms.

TABLE I : CATEGORIES OF PROBLEMS WHEN MANAGING SYNCHROOUNS AND ASYNCHRONOUS PLATFORMS

<i>Infrastructure problems</i> <ul style="list-style-type: none"> <li>•Internet unavailability</li> <li>•Internet disconnections</li> </ul>	<i>Communication problems</i> <ul style="list-style-type: none"> <li>•Not opening the email frequently</li> </ul>	<i>Computer literacy problems</i> <ul style="list-style-type: none"> <li>•Registration problems</li> <li>•Operating problems</li> </ul>	<i>Learning Problems</i> <ul style="list-style-type: none"> <li>•Lack of experience</li> </ul>
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The solutions worked-out by the pre-service teachers were of all the previously mentioned solution types. In most cases, pre-service teachers even used more than one solution type to overcome the problem. For example, to overcome the operating problem in the computer literacy category, the pre-service teachers met or called their pupils (a communication mean), and explained or demonstrated to them how to register or operate the distance learning platform (a training act).

In TABLE II, we describe the additional problems that the pre-service teachers encountered in the case of teaching intermediate school pupils using the synchronous platform of the Messenger.

TABLE II: CATEGORIES OF PROBLEMS WHEN MANAGING A SYNCHRONOUS PLATFORM: THE CASE OF THE MESSENGER

<i>Management problems</i> <ul style="list-style-type: none"> <li>•Participants availability problems</li> <li>•Attendance problems</li> <li>•Dealing with considerably large group of pupils</li> </ul>	<i>Communication problems</i> <ul style="list-style-type: none"> <li>•Lack of information about the users</li> </ul>
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The solutions worked-out by the pre-service teachers, in the case of the Messenger, were of three solution types: communication, management and documentation. It is important to notice that in the case of the Messenger, no training acts were applied. We can relate that to the familiarity of the pupils with the Messenger environment.

In TABLE III, we describe the additional problems that the pre-service teachers encountered in the case of teaching intermediate school pupils using the synchronous platform of the Interwise.

TABLE III: CATEGORIES OF PROBLEMS WHEN MANAGING A SYNCHRONOUS PLATFORM: THE CASE OF THE INTERWISE

<p><i>Management problems</i></p> <ul style="list-style-type: none"> <li>• Managing the students' assignments</li> <li>• Unsaved protocols</li> </ul>	<p><i>Communication problems</i></p> <ul style="list-style-type: none"> <li>• Pupils distraction</li> </ul>	<p><i>Infrastructure problems</i></p> <ul style="list-style-type: none"> <li>• Microphones malfunction</li> <li>• Lack of platform features</li> </ul>
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In the case of the Interwise synchronous platform, the solutions worked-out by the pre-service teachers were of all the previously mentioned solution types. In some cases, pre-service teachers also used more than one solution type to overcome the problem. Especially, documentation type solutions were used in the case of the Interwise, because of the unfamiliarity of the participants with this platform.

In TABLE IV, we describe the additional problems that the pre-service teachers encountered in the case of teaching intermediate school pupils using the asynchronous platform of the MofetNet.

TABLE IV: CATEGORIES OF PROBLEMS WHEN MANAGING AN ASYNCHRONOUS PLATFORM: THE CASE OF THE MOFETNET

<p><i>Emotional Problems</i></p> <ul style="list-style-type: none"> <li>• Feeling the need for the physical presence of the teacher</li> </ul>	<p><i>Active learning Problems</i></p> <ul style="list-style-type: none"> <li>• Modest interaction in the forums</li> <li>• Postponing sending the assignments.</li> </ul>
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In the case of the MofetNet asynchronous platform, the solutions worked-out by the pre-service teachers were mainly of the communication type. It seems that this platform is well organized and it provides enough documentation for the users. Therefore, there was little need for solutions of the other types. It is important to note that the communication solution worked-out by the pre-service teachers, the heart-to-heart meeting, was important and effective in this case. Pupils really needed to meet with their teachers or at least "talk" to them synchronously

In summary, we conclude that pre-service and new teachers can succeed in managing and teaching internet-based distance courses, synchronously or asynchronously, if they invest enough time and effort in applying mainly communicational means to overcome problems that they encounter. Of course, they should be aware also to other means: documentation, management and training, and to combine them when needed.

**Recommendations**

Problems that encountered pre-service teachers who taught distance learning courses for intermediate school pupils were presented in this research. Worked-out

solutions to overcome these problems were described too. This research shed light on the distance learning problems from the point of view of the teacher. It is interesting to study the distance learning problems from the point of view of the intermediate school pupils who experience distance learning for the first time. It is also interesting to study the problems of pre-service teachers or of K-12 pupils when the entire class takes the distance learning course, or when teaching ordinary obligatory courses using internet-based distance learning.

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