

# **New Course Management System Enhances Academic communications: How Technology Advances the Classroom Experience, The Case of the University of Puerto Rico, Río Piedras Campus**

**Ivelisse Hernández, Yamil Kaba**

**University of Puerto Rico/University of Puerto Rico**

The objective of this paper is to establish the effectiveness of implementing the use of web-based course management software in enhancing the classroom experience. Students were surveyed on the experience of using two platforms, Vnet and Blackboard.

## **The rise of web education**

Over time, educators have sought new ways to improve teaching techniques, to help the students in the learning process, and to face the emerging challenges in a dynamic environment.

Technology offers a variety of new opportunities that were not available in the past. The Web provides viable means to increase access to education. Web-based Instruction could be used as an adjunct to teacher-led classrooms as well as in distance education (Owston 1997). "...Web-based tools can facilitate course assessment by transforming a dauntingly cumbersome task into a feasible one, thereby making possible an interactive approach to course assessment", Celina Byers.

## **Vnet's features**

In the search for new ways to teach our courses, in January of 2007, the University of Puerto Rico, Río Piedras Campus, invited a group of professors from different disciplines throughout the campus to participate in a pilot program utilizing Vnet, a Web-based platform which allows professors to record their class and have them available for students' review, just minutes after the class is over.

After the group's first meeting we learned that Vnet was founded in 1997 to assist educators in bringing to the classroom the necessary technological tools to present class material in a more efficient way. Vnet implements 3D and animation technologies to help professors improve make their presentations more appealing. It also applies sophisticated desktop videoconferencing capabilities to reach the students in a different way.

Vnet is easy to use. The training process was simple. It only required a Tablet PC and an in-focus. The video recording software used by Vnet takes only a few steps to record a class and to have it available for students after the class is over. This allows the students to recapture all class

details, review class material, and evaluate their participation in class. It also provides professors a space to improve their lectures.

### **Vnet's experience**

From previous research at the University of Houston we learned that Vnet improved learning outcomes especially in the math and science departments. In business administration, more specifically, in business communication courses taught in English, the experience has been unique. For example, in the oral business communication courses, the students at first felt intimidated because the class was being recorded. But, after they got the chance to listen to themselves, they found a new way to learn from their mistakes. This experience has also been encouraging for us instructors, since we get to listen to our classes, share them with some of our peers and continuously look for new ways to enhance our teaching techniques. This promotes better communication with our peers as well as with our students.

Vnet provides the students with the possibility to download their classes to their Ipods, giving them an additional tool to review their class work while performing other activities such as exercising or commuting. If the professor authorizes it, the students could also print out some class material or supplemental material posted on the site.

### **Methodology**

To determine students' feedback on the benefits of this technology, students taking business communication courses in English were given an objective questionnaire, while students taking the information systems course, were given a subjective final report where they had to comment on several technological aspects. Students in information systems courses have an advantage over those in most other subjects, due to technology-based course content, in that their assessment can be more profound. The questionnaire consisted of eighteen questions and a total of eighty-three (83) students participated on this survey.

### **Results**

The first question inquired about the place where the students accessed Vnet's content from. Most of them accessed the information from their homes; others accessed it from a university location such as a computer lab or library. A few students accessed Vnet from work or a friend's house.

Next, students were queried about their experience with Vnet's features and interface. Their responses indicate that 80% watched each class video at least once (see Figure 1). This shows that students are taking advantage of the recorded classes.

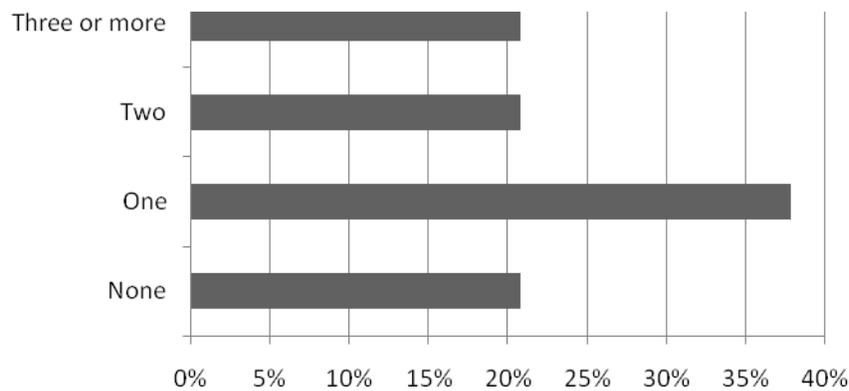


Figure 1: Student responses to the question: *How many times have you watched each class video on average?*

With regard to their responses on ease of use, only 7% considered it complex. The other 93% considered it to be within normal computer software use. Students in the Business Communication courses come from different backgrounds in terms of technology; their answers reveal that Vnet's interface is standard.

Currently, the University standard software in course management is Blackboard. We surveyed the students' opinion regarding the ease of use of Vnet versus that of Blackboard. The responses varied; still 24% said that Vnet was easier to use than Blackboard while 35% said both were easy to use.

We also assessed the students' opinion on Vnet's appeal. If it was considered appealing, students would feel more compelled to browse and use it. While 42% considers it very appealing, 53% considered it somewhat appealing. This reveals that students in general consider Vnet to be up to current webpage esthetics standards. Next, we asked students to compare Vnet's appeal with Blackboard. The responses indicated mixed feelings, with 39% saying Vnet is more appealing than Blackboard, 22% reporting that both were appealing, and 17% saying that Blackboard is more appealing.

An interesting aspect of making class video available to students through Vnet is the possible impact on study habits. We ascertained information regarding the impact of class attendance, homework, exams, and note taking. Regarding class attendance, we feared the implementation of Vnet could possibly reduce students' attendance to class, since students might think they could skip class and make up by watching the video later. Surprisingly, 69% of the students answered that this feature increased their willingness to go to class. Business Communication courses require in-class interaction, and Vnet seems to motivate students to watch themselves and their classmates' interactions with each other and the professor. Attendance sheets show that most students had excellent attendance records.

On the other hand, students' sentiment regarding the impact Vnet had in their in-class exam preparation was less than we expected. Although answers were diverse, 29% expressed that they prepared fully or mostly from their textbook and/or notes, 23% used Vnet and the traditional studying methods, but mostly textbook and notes. Similar results were found for homework/take home exam preparations: 32% of the students answered that they prepared mostly from their

textbook and/or notes and 22% used videos and their textbook and/or notes but mostly the latter. Further investigation could yield information regarding the reasons students still rely more on traditional studying methods.

Note taking results are interesting as well: 42% take notes as they would normally do, 39% take notes without worrying if they miss something, 10% take fewer notes, 8% consider the possibility of not taking notes, and 1% stopped taking notes. Vnet has not been intrusive in the note taking process, and seems to have given the students more confidence in their notes.

The questionnaire then focused on assessing students' recommendations on Vnet's use in procedure-intensive courses and in Business Communication courses for students whose first language is not English. As shown in Figure 2 and Figure 3, Vnet was regarded as favorable for both types of courses and for Business Communication courses in particular.

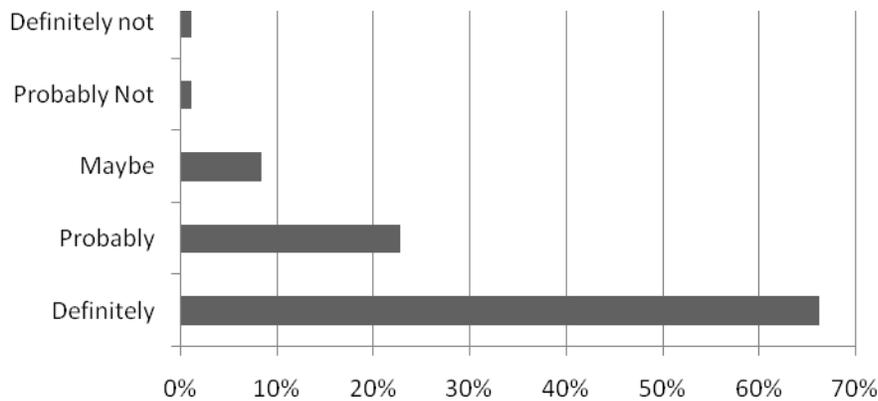


Figure 2: Student responses to the question: *Do you think Vnet's feature to watch past classes would be an asset in procedure-intensive courses?*

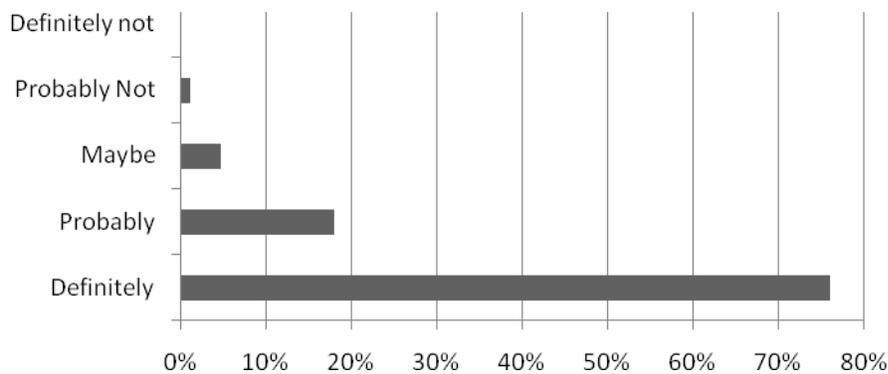


Figure 3: Student responses to the question: *Do you think Vnet's feature to watch past classes would be an asset in business communication courses?*

With regard to the general question concerning students' opinion on whether Vnet should be used in more courses at The University of Puerto Rico, Río Piedras Campus, the responses received were very favorable, which has encouraged us to continue with the pilot program and increase the project's scope (see Figure 4).

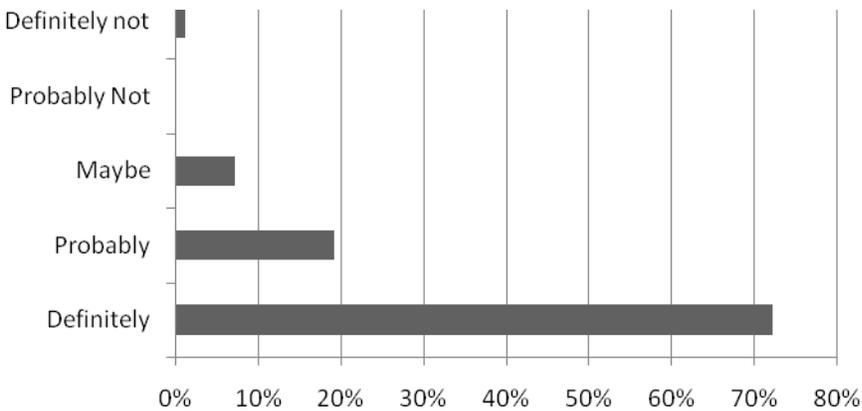


Figure 4: Student responses to the question: *Do you think Vnet should be used in more courses?*

The questionnaire then addressed Vnet’s success in enhancing the course experience, contributing to the syllabus’ general and specific objectives and facilitating the course specific skills.

When asked if Vnet had enhanced the course experience, 89% gave positive responses. Vnet also seems to have served to positively reinforce the course specific skills, such as writing, and verbal and non-verbal communication, as indicated by the 89% who gave a positive response to this question.

According to students’ feedback, it seems clear that Vnet and its features also helped fulfill the course objectives as 92% answered positively to this question. What was more important, however, was whether students thought that Vnet improved or enhanced their learning process. Strikingly, 86% agreed that Vnet was able to achieve this.

We tried to gather which obstacles tarnished the Vnet experience in order to learn from possible mistakes or technical drawbacks. We would like to share this information, as it might save other implementations of Vnet or similar software the trouble experienced here. Unfortunately, in Puerto Rico, not everyone has access to broadband Internet speeds as Internet Service Providers (ISPs) do not offer coverage in all towns. Almost 50% of the student sample said that they had slow Internet connections (dial-up) and that this affected their Vnet experience. Although Vnet streaming video feature, for example, has a low bandwidth option, video quality is inferior and in a dial-up connection, it can still take a substantial amount of time. We think this is a region specific problem; therefore, the implementation of Vnet in a place with better Internet infrastructure should not be detrimental to the course experience. As stated by Ronald D Owston, “providers of on-line educational programs must ensure that ample technical support is available for participants, particularly in the early stages of the program when participants are most likely to encounter the greatest number of problems.”

Another issue commented on was the software requirements to use Vnet. In order to view the streaming videos, Quicktime® and a specific codec for video software are required. Sometimes, students did not understand this or had problems getting the specific software from the Internet. Both are free and downloadable, but the student must acquire them. Another problem that we

experienced was the release of Microsoft® Internet Explorer 7. This browser had many compatibility issues with the streaming video feature which, if installed, prevented the user from viewing the video. Many times users downloaded it and installed it inadvertently with other updates from the Microsoft Automatic Update feature of their operating systems. We recommend that a small training session be given to students who are about to start using Vnet in which information such as this is provided so they can understand and troubleshoot their own problems.

Below, we will list some of the comments students made about their experience with Vnet:

“Vnet is good and the option to watch past classes is really wonderful”

“Students should use Vnet in all their courses; it will be definitely an instrument that will enhance our learning experience”

“Vnet, excellent job. I would like to continue working with this pilot program. Thank you for the experience”

Students enrolled in the Information Systems course utilizing Vnet were asked to prepare a report in which they compared Vnet’s and Blackboard’s functionality and other topics such as: ease of use, tool appearance, video management, document management, special features such as calendar, how the tools contribute to improve the course experience, any other advantage or disadvantage, if in their opinion recorded classes were a substitute for attendance, and a final recommendation on which tool they thought should be implemented full scale at the University of Puerto Rico. A total of forty-seven (47) reports were handed in. We will present a summary of the students’ comments within their reports. The report content was examined and classified as a recommendation for Blackboard, Vnet or both. We also tagged those comments referring to a specific feature and we will mention them as well.

### **Discussion & Recommendations**

In our analysis of the comments we have to take into consideration that Vnet is a pilot program. This implies that Vnet did not have full functionality while Blackboard did. For example, students accessed Vnet using a public course account, instead of having their personalized account. As a result, features such as grade book, were not available for students using Vnet; however, they were available for students using Blackboard. In fact, some students submitted their final recommendation choice for Blackboard, using this feature as a tie breaker.

“I could not find a place to check my grades on Vnet, which puts it in a great disadvantage to Blackboard. This is one of the main reasons why we use these web pages.”

Also, some students felt more comfortable using Blackboard while Vnet was something new to them. Since Vnet is a pilot program, its’ content was replicated in Blackboard as well. This led some students to using Blackboard only, as they admitted in their final work:

“I consider that Blackboard is easier to use since it is the only course management system I have used, and I get around in it pretty well”

Unfortunately, technology users define in terms of black and white whether something is good or bad, or whether they can or cannot make it work. Some students could not install properly the software required to see the streaming video feature and concluded Vnet was worse than Blackboard. One student commented on this as follows:

“In Vnet, I never found the way to access the documents... and I could never watch the videos since it is too complicated.”

The first topic the students had to discuss was ease of use. It was found that 34% of the students stated Vnet was their choice considering ease of use and 38% said both Vnet and Blackboard were easy to use. We also looked in the text to see if we could determine whether the students found Vnet easy to use regardless of which platform they chose and found that 89% remarked in one way or another that Vnet was easy to use.

The next topic we investigated in the reports was appearance. Vnet was considered to have a better look and feel than Blackboard, 68% of the students mentioned that they preferred Vnet's appearance over Blackboard and 21% said both were appealing. Some students even mentioned that Vnet looked “very modern”, “felt like using Windows”, and looked “extremely organized”, and “sleek”, among other remarks. We also looked in the text to see if we could determine whether the students found Vnet appealing regardless of which platform they chose and found that 87% remarked in one way or another that Vnet was appealing. We probed further and counted how many students made comments about Vnet's tabs or colors. Vnet's tabs were mentioned by 21% of the students and 47% said they liked Vnet's colors. In fact, the colors and tab organization received praise from several students with comments such as these:

“When I first saw Vnet, I could perceive this site was newer than Blackboard, it is bright which gives it a touch of freshness, which transmits the idea that what is modern predominates. It appeals to young people...”

Video management and streaming are some one of Vnet's greatest and more attractive features. Some students commented they had problems installing software or downloading the video. Still, for those who could, they were astonished at how quickly video streaming started to play a video versus having to wait for a complete video download. About 69% of the students mentioned Vnet as their choice for video management, 75% mentioned it was easy to download and watch a video via Vnet, regardless of their platform choice, and 69% mentioned in their reports a positive remark about the video streaming. One student commented:

“Vnet manages video much better than Blackboard. It is so evident; I could never see a video downloaded from Blackboard, whereas, I could quickly start watching a video in Vnet.”

Another one of Vnet's strengths is document management. Only 30% of the students mentioned that Vnet was their choice for Document Management, 38% said that any platform was a good

choice and 28% preferred Blackboard. About 81% of the students mentioned that Document Management in Vnet was easy to use. We also found that students liked certain document management features such as information content of uploaded documents, (15% commented on this), and document extension logos, i.e. Microsoft® Word documents show a word logo, etc., which again 15% commented on. Several students pointed out that Vnet also shows how many times each file has been accessed.

Students also had to discuss several Vnet features and compare them to those of Blackboard. One feature widely discussed was the Calendar, although students were not specifically required to do so. Vnet provides a calendar where important dates, such as due dates for assignments or exams, are automatically updated as soon as the professor assigned them. Blackboard's calendar is not as accessible and does not update with information provided by the professor. The calendar feature on Vnet was mentioned as something positive by 85% of the students, while 40% specifically mentioned that they liked the feature that the calendar was automatically updated when the professor assigned a homework or exam via Vnet.

Another feature discussed was the professor's photo and contact information. Vnet is designed so the professor's photo and contact information can always be seen when the course is accessed. To our surprise, 62% of the students directly mentioned the feature and described it as positive. Many of these students perceived the professor as being more accessible than when they used Blackboard to access the course content. Also, it served to reassure that they were looking at the correct course content.

“When you enter, the first thing you see, is the professor's picture, which makes it more personal.”

Additional features included in Vnet are Vmeeting, a chat tool, and Vreservations, a tool to coordinate equipment borrowing such as TVs, laptops and projectors. About a 69% of students found Vmeeting advantageous and 21% found Vreservations desirable. One student commented about Vmeeting:

“This is very useful because students can work in teams without having to physically meet.”

Vreservations would be a great asset at our University since equipment borrowing lists are kept manually. Through Vnet, students and professors alike can check any time if the desired equipment is available and can make the necessary arrangements with time.

The next topic students discussed was whether course management software improved the learning process; 98% of the students said yes and explained why. Their reasons included not having to worry if they misplaced papers, having homework and video accessible if they missed class, professors being able to announce if they had to cancel class, keeping in contact with the professor and fellow classmates.

However, 98% of the students also argued that recorded classes are not a substitute for real classroom interaction. They agreed that course management software such as Vnet helps

enhance course experience and enables students to review past classes, watch their classmates and themselves participate, go over the professor's explanation, get first-hand information in case they missed class are a great advantage but do not replace the real experience. Several students' comments on this are:

“In fact, to be able to see a pre-recorded class is not enough for me; it will never be the same as the classroom experience”

Finally, students had to recommend either Vnet or Blackboard as the University's official course management software. The results show that 56% of students chose Vnet, 28% Blackboard and 17% did not make a decision. We will present comments that show the level of satisfaction students had with Vnet:

“I consider Vnet to be more up-to-date, accurate, graphic, and easier to use”

## **Conclusion**

From our experience and the students' feedback we learned several important things. First, for the implementation of any course management software, in this case Vnet, it would be advantageous if students received formal training where they could feel comfortable to ask and participate. We suggest that each professor begins each semester with a thorough walkthrough of Vnet and its main features for all of their students. This should help students to troubleshoot simple problems which are usually the most common.

Second, pilot program teams should include at least one student-oriented professor, lab technician, or any other friendly and technology oriented personnel that could help students troubleshoot their problems. It is important that students feel confident about the course management software; otherwise, they will stop using it and dissuade other students from using it. On the other hand, if they feel confident, they will be the first ones to promote it.

Classrooms should be equipped with projectors to minimize lost time in setting up the equipment for every class. If possible the classrooms should be air conditioned to reduce the level of outside noise in the recording of the class. Mounting and dismounting the equipment is a waste of valuable class time and increases the probability of equipment failure due to handling or accidents.

The pilot project to implement Vnet as new course management software has been a great success. Despite its limitations, students in the business communication and information systems courses have liked the software and its features. Students who were able to watch themselves, their classmates, and the professor whether they wished to review a class or because for any reason they missed it, have already benefited greatly from this teaching technology tool. Video streaming has filled the gap of lengthy video download.

Traditional methods of communication in the classroom setting have become insufficient as technology evolves. Online classes take advantage of new technology while sacrificing the real classroom experience. The course management system, Vnet, integrates the classroom

experience with new technology and it certainly enhances the way we teach. The implementation of Vnet's pilot program at the University of Puerto Rico, Rio Piedras campus, has enabled academic interactions to transcend beyond the classroom.

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#### Biographies

IVELISSE HERNANDEZ has an M.A. in Translation from the University of Puerto Rico and doctoral studies in Communication from the University of Oklahoma in Norman. She has been teaching business communication courses for 10 years and taught several Spanish courses at the University of Oklahoma. She was president and general manager of an existing corporation and held managerial positions in companies such as American Airlines, Marriott Hotels and, DirecTV Latin America. Over the past four years she has been devoting part of her time to working as a translator and interpreter. Her research interests include business communication, language teaching, virtual technologies, and development of language competences, among others.

YAMIL KABA has a B.B.A. in Information Systems and is pursuing a PhD in Finance. He has completed all his doctoral courses and is writing a dissertation on Seasoned Equity Offerings performance of Real Estate Investment Trusts. He has been teaching for the past three years Financial Markets and Institutions, Managerial Finance and Introduction to Information Systems. His research interests include business communication, technology assisted learning, and propensity score matching.