Athena University — *VOU* and *GENII*: A Model of Conceptual Change and Collaboration

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Abstract

This paper has been written to describe what can be accomplished using the Internet to foster the development of resources, by people who live and work in diverse locations and educational environments. The goal of this project is to develop a seamless K to PhD educational institution that serves a sundry population seeking educational excellence.

The bringing together by a Consortium of Educators, the Group Exploring The National Information Infrastructure (GENII) and Athena - Virtual Online University (VOU), have combined with the Information Superhighway, to create a Virtual Educational Environmental (VEE) to provide an Online University, Teacher Training Center and experimental K-12 school. This Consortium is providing a platform that will become a Gateway to the World to bring home the World Community concept. We invite you to join us in this endeavour to make learning exciting and give, teachers and students alike, the ability to learn on their own and become researchers and collaborators in a World Community.

Keywords — Online university, distance education, K-12 teacher training, experimental K-12 Lab School, conceptual change, collaboration.

1. Introduction

The presentation of this paper is intended to document the potential of the Internet to foster collaboration and conceptual change between people who have never met face-to-face. Indeed, this paper is an example of the collaborative effort undertaken that would not have happened without the Internet technologies available. At this writing, none of the contributors have met in person. The collaborative effort to write this paper has been accomplished via the Internet, as have the development of the projects discussed herein. The distance involved spans over 15,000 miles and uncountable hours of effort to bring them to their current stage of development. All but a few of the people involved in the projects are either working or studying full-time; the others work full-time-and-then-some on the projects.

Despite the problems posed by distance, time zones, lack of resources and the varying levels of technical experience of the people involved, all the participants of the projects have gained a tremendous amount of knowledge about using, interactive online resources to collaborate with others working toward a common goal.

2. The Projects

During the months of April -June of 1994, two independent organizations established themselves as entities on the Internet. The first to make their presence known was GENII, an acronym for the Group Exploring the National Information Infrastructure followed by Virtual Online University (VOU) in June.

3. Their Missions

- GENII: To provide friendly, non-threatening assistance to K-12 teachers in gaining skills and confidence using the Internet.

- VOU: To establish an accredited Online University.

4. Project Development

GENII offers a helping hand: The GENII Project was established to facilitate the training of classroom teachers in skills necessary to use the latest digital communications protocols. The development team is a volunteer consortium made up of a very diverse group of educators and interested parents. They are in-service trainers, interested parents and teachers from all levels of education. This group agreed upon a common need and recognized that there was a way they could work together to fill that need. The purpose of the Project GENII team is to communicate, share and build on the work and experiences of everyone. They have agreed that there is a common need for the type of service offered and recognize that there is a way they can work together to fill that need.

GENII's mission was to establish a Virtual Faculty of networked educators to "be there" for the K-12 teacher learning the new skills associated with accessing the Internet. This Faculty will be an ongoing resource for teachers as they become more familiar with the workings of cyberspace and begin the process of learning and introducing tools and resources from the Internet into the classroom.

GENII has established:

(1) Gopher and World Wide Web (WWW) sites.

(2) A database of mentors; a list of names and CV's are available Via WWW and Gopher.

(3) Contact with The Amundsen-Scott South Pole Station, where a project was developed called 'The New South Polar Times'. This is an ongoing, first hand account of life at the South Pole, a bi-weekly newsletter written by one of the staff at the Amundsen-Scott South Pole Station, South Pole, Antarctica.

(4) A Warm Body Service for inservice training programs, by providing a real, first e-mail, contact to someone out there.

(5) A Pointer Service: As the Internet is so massive, finding sources that are appropriate for the K-12 classroom can be very time consuming. It is confusing to sort through the maze of information and then attempt to integrate it into the curriculum. GENII can help by giving them the benefit of our experience in locating resources and model how to best amalgamate them into the classroom.

The Internet Community has been built on a tradition of volunteer and helpful guidance. When someone makes an inquiry to a Newsgroup or to a Listserv, invariably several other users will provide answers, pointers or advice directed to that query. Often these responses will be thoughtful and extensive; well beyond what one would expect to experience in off-line life.

True to Internet tradition, the GENII Project has become a cooperative volunteer group of dedicated and knowledgeable individuals, who understand that training of teachers in the use of tools and resources of digital communications and data retrieval, is one of the most important outcomes that can be achieved if the National Information Infrastructure (NII) is to become something more than some 'giant digital shopping network'.

5. Higher Education with a Difference

VOU Inc. was incorporated in June of 1994, as a not-for-profit organization by the State of Missouri, with the intent to provide educational opportunities to a geographically dispersed population using the Internet. Immediately, VOU began to attract a core group of diverse individuals who felt that higher education, and education in general, was in need of general reform. VOU established as its mission:

To provide high-quality educational opportunities on the Internet as inexpensively as possible. It provides a forum in which students and teachers can pursue an integrated, interdisciplinary curriculum in the Liberal Arts. It is a medium for the free exchange of ideas in a non-physical setting, placing emphasis on ability and achievement. Critical thinking skills are encouraged and emphasized in an integrated and practical approach to Liberal Arts, rather than vocational education. As an equal opportunity institution it does not discriminate on grounds of ethnicity, creed, gender, age, sexual or political preference, nationality, economic status, or physical disability. Scholarly research and publishing is recognized as a necessary adjunct to quality teaching, but places priority on teaching and does not make research or publication a necessary condition of employment, job retention or promotion.

This has been accomplished by using an organizing structure along the lines of 12th century European universities with unions of faculty and students having minimal administration.

6. Conceptual Change

What makes VOU different from other universities? By existing in a virtual environment without the costs of maintaining a physical plant, VOU can offer a high-quality educational experience at a greatly reduced cost to the student.

Bill Painter and Robert Donnelly started with a vision for a new school house - one based completely on the Internet. VOU evolved from their interpretation of a mandate set forth by GNA and its Gold Curriculum Review Committee. What they proposed was the creation of an accredited Liberal Arts College set in virtual reality - A place where students would help create their own learning environment, work cooperatively in small groups, and explore their world via the global information superhighway.

In a few short weeks, Painter and Donnelly along with Dan Gerson designed and programed a text-based virtual educational environment known as Virtual Online University. The next task was to create learning tools and train instructors to use them effectively.

While teachers know how to use traditional tools like a chalkboard, overhead projector, to lecture, teaching online eliminates most of the cues good teachers use to monitor their student's progress. As instructors cannot see their students, in this environment, puzzled looks and even the simplest interaction filters through abstracted typed text. In such an environment, showing a student what to do takes time, typing, and very precise language. These do present some problems in the interaction between instructor and student but they are overcome in a short time. As the technology improves over the next few years this problem will soon be eliminated as audio and visual Internet links are developed and improved.

Regardless of the teaching environment, instructors generally use a lecture approach in-real-life and tend to deliver electronic lectures online. As this is a little more difficult to do in this environment, the first tools created or transported from other Moo's (Multi-user, Object Oriented environment) were the classroom, slide projector, notice board, and of course, the lecture. The lecture allows instructors to pre-load their thoughts, instructions, and communications and then deliver them line by line to their students.

In essence, the lecture epitomizes the paradigm shift required to restructure traditional education into a Virtual Educational Environment (VEE). The difference between the two can be compared to the evolution of automobiles from the horseless carriage to the modern car.

7. Advantages of Working in a VEE

Much like the horseless carriage, the 'lecture' approach to delivering instruction in a VEE tries to adapt a well known approach to a new technology with varying results. The lecture is very effective when instructors pause to allow a dialogue to develop and incorporate other teaching tools into it. The ability to access powerful tools such as the World Wide Web and Gopher browsers, simulations, tutorials, and most significantly, the VEE itself are a very compelling teaching device. The online browsers make gigabytes of information available to students, while tutorials and simulations can provide 24 hour a day access to detailed, information presentation, practice and feedback.

The VEE itself serves as a most important resource to students. It can be changed to respond to the requirements and desires of the learning community, by creating new spaces to match the curriculum and activities. Students can also add rooms and create objects to illustrate their conceptual understanding or to assist others in gaining such insight.

For example, a science student may create a demonstration and prepare a hypertext document relating their ideas to the theory. This becomes a portfolio of work for assessment. Traditional evaluation, if desirable, including multiple choice, fill in the blank, and matching exercises can be built with relative ease.

8. Disadvantages of Working in a VEE

Like most human creations, VEE's have their drawbacks. The current technology limits interpersonal interactions to text alone. Even worse, participation in the VEE depends on typing ability and knowledge of the English language. The command structure confuses even veteran MOOers, and the text output from players in the same location mixes together into a continuous stream of indecipherable babbling. Learning to survive in this demanding environment may take time, and not suit the tastes or learning styles of some people. The greatest limitation is the lack of good research into the niceties provided by interactive learning environments. Hopefully, in the near future, most of the disadvantages will vanish as the technology improves, where all that will be missing is the lack of face-to-face person-to-person interaction

9. Amalgamating Higher and K-12 Education

The concept of a Lab School attached to a University is not a new one. Many Teacher Colleges and Universities had Lab Schools attached to make the experience of a school setting, by student teachers, convenient for short term observation prior to them going into the field. In more recent times, with the escalating cost to maintain faculties, Colleges and Universities can no longer afford the luxuries of having a K-12 School

close at hand. This however, is not the case with VOU and the GENII Lab School. The fundamental philosophies of both projects are to provide services to the learners and create a unique learning environment through cooperation.

As part of its research and testing phase VOU held its first Virtual Conference in the MOO in November of 1994. With presenters and participants from all over the world in attendance, the first Conference, 'Research and Pedagogy in Cyberspace: A Conferencing Workshop for Teachers On Using the Internet', due to the time zone differences, lasted an entire week. Most participants reported they had initial difficulties in adjusting to using the MOO but generally, evaluations were highly positive and each attendee expressed the desire to repeat the experience. Evaluations of the conference by participants supported the concept that MOO's were a great place to learn.

The GENII Project was invited to present a paper at this conference and George Duckett, representing GENII, made the presentation. It became clear GENII's own mission was entirely compatible with VOU's, though directed at teachers and students in the K-12 arena. As GENII was seeking a permanent base to establish itself as a viable entity, VOU offered GENII a permanent home for its Web pages and a site to use for conferencing. As the relationship grew it was realized that the two organizations had much to offer each other and collaborated in developing the concept of an Online Lab School. On the 18th of February 1995, The GENII project began an official relationship with Athena University - VOU by establishing the GENII Lab School (GLS).

Although now connected to a University, GENII's goal is still the same; to help organize the teacher's access to the Internet by first teaching the basic skills necessary to achieve a connection, then to provide a First Site for entry into the Internet jungle. Once inside, GENII's Virtual Faculty will be there to be the friendly, knowledgeable guide. Just conjure up a vision of the friendly genie from Aladdin's magic lamp and ride the Internet on his magic carpet.

Summary

There is currently little knowledge available of adult learning, micro worlds, distance education and instructional systems as they relate to online education. Thus, we try to adapt what is known to create the best learning environment possible, given our resources.

The best part of building a new technology involves testing the limits of the medium. We are heading towards a graphic user interface which will illustrate our VEE using brilliant pictures, icons, symbols and motion video with sound. The VEE will blend seamlessly with the World Wide Web, Gopher, E-mail, and video conferencing.

Students will be able to talk to their instructors, see their fellow students, and create their own version of reality using the graphic interface. While this may seem unrealistic and far-fetched, VOU has begun development of such a system. We intend to always test the limits of our medium, while delivering information-age technology and high quality instruction to our student clients.

Athena University - VOU and GLS uses a Multiuser, Object Oriented environment developed by Pavel Curtis at Xerox called a MOO. This environment allows interaction between faculty and students. Research has established that MOO environments have unique social characteristics which would facilitate a pedagogical format. VOU began to test this environment as a virtual classroom in September, 1994, by holding 'beta-test' classes. This period of examination was completed, and the consensus of both students and teachers is that it was a resounding success.

We consider the joint effort of all parties in the genesis and development of the University and Lab School, as a fascinating and successful model of conceptual change and collaboration. By using the tools and potential of digital communications, what began as a "What if..." scenario on the Internet mail list NII-TEACH, struck a nerve with a substantial number of educators and others who were obviously ready to take a proactive stance with regard to getting a seamless K to PhD community online.

The Staff Members of the online Athena University - VOU and the online GENII Lab School, extend to you a warm welcome and invite you to join them in the development of this new, exciting educational technology. We look to making a college education available to any person capable of haveing one by providing, a 24 hour 7 day a week service, accessible to persons normally unable to attend classes. In addition, offer assistance to the K-12 teaching community to develop the skills needed to use the Internet and related resources and provide a meeting place for them to exchange ideas and information.

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For complete detailed information with regard to the development of this project we have provided URL's pointing to the projects and the published papers below.

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