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The Research, Development and Evaluation of a Prototype

Online Community for Educators

(Educators: IT co-ordinators within the Dublin Inner-City

Schools Computerisation Project)

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0. Abstract

The aim of this study was the establishment of a prototype online community aimed at supplementing the work carried out within the DISC project. The Dublin Inner-City Schools Computerisation Project (DISC) provides support, information and training on a variety of ICT related topics to 38 inner-city schools. Although this study primarily focuses on the needs of DISC teachers, specifically IT co-ordinators, similarities can be drawn with the needs of other schools and teachers throughout Ireland.

WebCT was the chosen electronic environment in which the DISC e-community was developed. An overview of best practice in online community building guided the methods used to conduct this research. Data gathered from an in depth survey, combined with a number of other methods used to elicit user needs, shaped the design and development of an online prototype. Initial feedback and experiences of the development process was then used to shape a future plan for a sustainable and scalable online community for the DISC project.

1. Introduction

Aim

This DISC e-community will be a virtual representation of a physical community of teachers responsible for co-ordinating all things IT related within their schools. It will be housed in a Virtual Learning Environment called WebCT.

Levels of IT literacy within the DISC community cover the entire spectrum from basic to expert, as do the information and support needs of individuals. Although there are 38 schools within the project ,each school tends to function autonomously with the opportunity to take advantage of the depth of experience, knowledge and expertise of colleagues rarely arising. The development of an online community aims to provide the forum for such interaction.

It is hoped that in this online community these teachers will learn how to communicate in a virtual environment, accessing and sharing information relevant to the community itself and their communal task of facilitating the successful implementation of Information Communication Technologies (ICTs) in the school environment.

Motivation

As the project co-ordinator of the Dublin Inner-City Schools Computerisation project (DISC), I have the responsibility of facilitating over 38 schools in everything from the upgrading of IT facilities and hardware, to

basic troubleshooting and ICT training in a variety disciplines. It has been my experience, mainly in primary schools, that as computer facilities within a school improve and increase the number of technical problems, classroom management issues and information and support needs do so as well. While a single computer in each classroom was manageable, an entire suite of computers in a computer room brings a whole new set of problems.

The development of the DISC e-community is an immediate attempt to create a peer to peer network aimed at providing an empowering self help environment which could hopefully fulfil the information and support needs of IT co-ordinators within the DISC project and supplement the services which the co-ordinator provides.

ICT Initiatives for Schools

The importance of ICTs in education at all levels is something which is widely recognised both on the ground in schools and at a the policy making level. In 1998 the Department of Education and Science established the National Centre for Technology in Education (NCTE), an agency with responsibility for the use of information and communications technology (ICT) in education. Schools IT 2000, a government initiative which resulted in over 60,000 computers being installed in Irish schools was implemented by the NCTE along with a number of other initiatives, namely the Technology Integration Initiative, Teaching Skills Initiative, Schools Integration Project, Scoilnet and Special Needs in ICT, (www.ncte.ie).

Although great inroads have been made towards the integration of ICTs into Irish classrooms and the Irish curriculum there is still a long way to go. According to an evaluation of the Schools IT 2000 initiative, all teachers and principals of both primary and post-primary schools saw the following issues as the main ones hampering the use of ICTs in education; time constraints, lack of knowledge , lack of confidence and technical support (Impact of Schools IT 2000).

D.I.S.C (Dublin Inner-city Schools Computerisation Project)

D.I.S.C (Dublin Inner City Schools Computerisation Project) began life as a SIP (Schools Integration Project) initiative. Over an 18 month period this project aimed to upgrade each participating school, of which there were twenty, to full multimedia computer capacity, together with co-ordinating basic ICT training for teachers and locating and evaluating relevant educational software across the educational spectrum. Following the completion of the SIP initiative DISC continued due to support from many sectors including corporate and third level. There are now 38 schools (9 post-primary and 29 primary schools) with approximately 7,000 students and 600 teachers involved in the project. The project has a fulltime co-ordinator responsible for facilitating the continued upgrading of D.I.S.C schools, provision of administrative, software and technical support and organisation of relevant teacher training.

Each of the D.I.S.C schools has a dedicated IT co-ordinator who takes responsibility for the running and management of the computer room. This is a voluntary appointment and is not necessarily based on technical ability or know how, in many cases it can fall to the resource or special needs teacher

purely due to their relative flexibility. The result is a large variety of teachers, with mixed backgrounds, attitudes to technology, confidence levels and technical know how. Some schools are thriving due the personal interest and efforts of a motivated individual, others are lagging behind. The *time constraints, lack of knowledge , lack of confidence and technical support,* mentioned in the Schools IT 2000 evaluation combined with training needs, form the basis for much of the liaison with the D.I.S.C co-ordinator.

Online Community and D.I.S.C

Since the projects has grown to include 38 schools, the amount of support which a single co-ordinator can offer each school is considerably reduced. This can result in feelings of frustration and isolation among IT co-ordinators within individual schools, an increased sense of separation from the project itself and a decrease in motivation and enthusiasm for ICTs in general.

An online community is one way of combating some of these issues. It provides a single point of contact for all members, a place where people can 'meet' any time, anywhere without the constraints of work or travel, it can be accessed and browsed at an individuals leisure and each individual can take from it what they like instantly without having to sit through others requests and questions as they would in a physical environment.

DISC as a cluster of schools has an already well established physical community which makes it more easily extensible to a virtual environment. This is a benefit which can not be underestimated and is often the initial step in online community development, (Kim A,J. 2000).

WebCT – What is it and why use it?

WebCT is a learning management system* which was developed by Murray Goldberg, a member of the Computer Science department at the University of British Columbia. It is an easy to use virtual environment which facilitates the development of online courses while also using tools such as whiteboards, chatrooms, discussion boards and email, to enhance the student's experience.

In choosing an environment to house the DISC e-community there were two options, a standard website or a WebCT site. The later was chosen for a number of reasons:
- The security offered by the logon procedure automatically afforded a sense of community, allowing members to interact in a more relaxed environment.
- The standard interface, its simplicity and ease of navigation and consistency.
- The communication tools including interactive calendar.
- Ability to track members use of the system – essential in determining who is not accessing facility and targeting the reasons why this is so.
- Quiz facility – allowing easy development of online evaluations.

A number of other vendors produce equally good Learning Management Systems, however as WebCT is the chosen LMS of the third level institution responsible for DISC, this is what was used. For a more complete description of WebCT see www.webct.com.

*A learning management system uses Internet technologies to manage the interaction between users and learning resources, Rosenberg 2001, pg 161

2.   Literature Review

Online Communities

The term community can be used to describe small groups of individuals bound together by "a common sense of purpose and a real need to know what each other knows" (Brown and Gray, 1995).

Online communities are a "gathering of people, in an online 'space' where they communicate, connect, and get to know each other better over time." (Boettcher, Duggan, and White, 1999) It would seem that online communities are very similar to their physical counterparts. The learning and interaction which occurs through conversation, meetings, observation, demonstration etc in a physical environment uses tools such as discussion boards, newsgroups, mailing lists, synchronous chatrooms, whiteboards and more to emulate the physical experience.

Developing a Successful Online Community

"What makes a successful learning community is often poorly understood. At this time, the tendency of those involved in building graphical virtual worlds is to create visually compelling worlds that look good, but do a poor job of fostering social interaction. Many of these communities have more in common with lonely museums than with the vibrant communities they set out to create."

Peter Kollock (1996, p1)

It is extremely important when designing and developing an online community to ensure that it is fulfilling a specific need, a need that can not be fulfilled by other means for whatever reason. The location of the potential users is also an issue, can their online interactions be supplemented with face to face meetings or must it occur exclusively online. The technological constraints from where the user is accessing the online environment should also be taken into consideration, what specification is their hardware, is bandwidth an issue, how technologically competent are they?(Boettcher, 1999).

According to Cothrel and Williams (1999) in order to have a successful online community it must "engage and involve members" as this will create a sense of ownership, and a sense of belonging is essential in achieving a high level of interaction. Online communities are best operated in a framework of collaborative learning, (Lally & Barrett, 1999), with members needing to be in some degree committed to the group and the co-operative principles functioning therein. In order to ensure dynamic interaction online activities should be designed with this in mind, (Uber- Grosse and Leto, 1999).

Designing an Online Community

According to Kim (2000) and her "Social Scaffolding" approach to online community building, there are nine design strategies which will ensure a successful sustainable online community. They are as follows:

Define and Articulate your PURPOSE
In order to have a successful community you must understand why you are building it and who you are building it for. This vision must then be expressed in the "design, technologies and polices" of your community.

Build flexible, extensible gathering PLACES
Once your purpose has been defined you need to develop somewhere where you and your members can work together and talk regarding your shared purpose. A "flexible, small scale infrastructure of gathering places" is essential to the evolution of the community.

Create meaningful and evolving member PROFILES.
It is important for you to get to know your members and for them to get to know you and each other. This is essential in building trust, fostering relationships and ensuring personalised services.

Design for a range of ROLES
New members joining the community will have different needs to seasoned members, it is important to design for both.

Develop a strong LEADERSHIP program
Leaders in a community provide direction, instruction, guidance etc., it is essential to develop and effective leadership program within an online community.

Encourage appropriate ETIQUETTE
In order to ensure that conflict and disagreements do not get out of control some ground rules for participation need to be established. This 'Netiquette' should be enforced and will shape the development of the communities standards.

Promote cyclic EVENT
Running regular events online fosters deeper relationships among members, this should encourage a loyal following.

Integrate the RITUALS of community life.
Celebrate events important to the community in the online environment.

Facilitate member-run SUBGROUPS
This is a goal for large scale online communities and require the provision technologies to help members achieve this. It can be a powerful feature which drives lasting member loyalty.

Maintaining an Online Community

In order to ensure that a successful online community is maintained there are two factors playing an important role, one is the facilitator or co-ordinator and the other , the members themselves.

The facilitator is the person who instigates communication within the environment, they are responsible for welcoming new members, setting the tone of communication, monitoring and managing communication, (Kimball, 1995). The members, once they get to know each other are responsible for maintaining the vibrancy of the community. It is important that once members engage in an online discussion or communication, that other members are signalled, which helps to foster active participation by everyone, (Lally and Barrett, 1999). As a result of this different roles will become apparent such as observer, content expert, mentor or critic. According to Cothrel and Williams (1999), these roles tend not to belong to the members themselves but to the community, with different members taking on these roles over time.

Evaluating an Online Community

Evaluating the success of an online community can be a difficult task. Many variables can be used to measure the effectiveness of an online community, however the most important is the users themselves. Feedback from members is possibly the most valuable insight into the success of the online community (Kollock, 1996). Mason and Hart (1996) suggest a list of criteria which may be employed to determine the effectiveness of an online community. The criteria include:

- Usage rate : How often did the members visit the online environment?
- Participation rate: Did the majority of members participate in online communication, were some moreactive than others?
- User Feedback: what did the members think of the experience?

Educators and Online Communities

[Teachers] have no time to work with or observe other teachers; they experience occasional hit – and – run workshops that are usually unconnected to their work and immediate problems of practice. [Effective professional development cannot] be adequately cultivated without the development of more substantial professional discourse and engagement in communities of practice – Darling – Hammond & Ball (1997)

Research has shown that communities in general have an important role to play in enabling teachers to improve their practice (Lieberman, 1996). Social gatherings, meetings, informal conversations all play an important role in solidifying a teachers place in a community and help bring new teachers into the fold. Communities provide learning opportunities through social interaction with colleagues in a work setting. A pool of professional knowledge can be accessed by newcomers through authentic tasks, tool and social norms (Lave & Wenger, 1991).

With the documented benefits of communities for learning and professional development within education much investment has been made in attempts to extend this concept to an on-line environment. Large investments in technology and on-line teacher professional development in the U.S have

however generally not been successful in creating sustainable and scalable online models.

Reasons for Failure of Educational Online Communities

Schlager et al (1998/1999) believe that the reason for the failure of a number of online communities aimed at educators lie in misconceptions regarding the nature of online communities, how to cultivate them, and their role in supporting teachers.

In order to combat this it is important to have online activities to increase motivation, incentives and support for teachers. If they see there is no added value to using the technology this will only reinforce their feeling of being bogged down by technology and therefore reinforce their negative views of technology as a teaching tool. (Schlager et al, 1998)

There are further beliefs that it is possible to build an online community and simultaneously use it to provide support, training and content. Businesses have learned to their detriment that adopting new technologies is often "accompanied by and initial decrease in productivity, with benefits accruing only after the technology in question has been effectively assimilated, a process that often involves the introduction of significant structural changes within the adopting organisation"(PCAST, 1997)

Research has also shown that in order for education professionals to engage successfully in an online community they must be proficient in on-line technology beforehand. (Schlager et al, 1998)

There is no doubt that teachers throughout their lifetime will be involved in a number of online communities. More than likely these communities will work autonomously, having little or no knowledge or connection with each other. In a large number of cases they will be developed using a top down approach, using insular and highly structured activities.

The Future for Educational Online Communities

Physical communities unlike online communities, foster co-operation and innovation by informal communication, sharing of information and experiences combined with trust building measures. In order to ensure sustainability of online communities it is essential that the social structures so obviously in place in physical communities be employed in an online environment, essentially this means an online community for the online communities, (Corcoran and Fuhram, 1999).

This type of co-operation can result in a lack of duplication of resources, a more effective service being provided for the target user and a better quality product. Eventually this idea of an online community for online communities could be extended to the policy level where state agencies take on the role of organiser, in creating a place for relevant online communities to gather.

According to Lieberman (1996), " Network leaders try to create public spaces where educators can work together across classrooms, schools, or districts. In locations free of the normal boundaries and cultural constraints of one's own organisation position or place, it becomes possible to grow a

culture of commitment to a new set of ideas and ideals, Helping build a culture through activities that keep these ideas visible and integral to the work is an important part of leadership" .

3. Methods

Overview

A number of methods of data collection were employed in this project including questionnaires, informal interviews, prototyping , overview of existing websites, professional experience and a focus group.

Questionnaires

Support and Information Needs Survey
This survey was developed in order to elicit information on user profiles, user needs and the requirements for development of the DISC e-community . It focused on the following areas, User Profile, Internet, Training, Technical Support and Other Support and Information Needs.

Teachers are constantly receiving surveys from various institutions and find the filling out such surveys an increasingly tiresome task. With this in mind this survey was intentionally short, approximately one and half pages in length. The questionnaire contained a combination of qualitative and quantitative questions. The majority of questions were closed ended, with just ticking and numbering required, although additional comments were encouraged . The survey was posted to the IT co-ordinators of the 38 DISC schools. A stamped addressed envelope was included with all surveys and follow up phone calls were made to ensure their return.

Survey Analysis

The analysis of the survey was carried out as follows

Question 1.

Q1	Profile	
a	Age:	(20 –30)　(31-40)　(41→)
b	Male/Female:	
c	Teacher status(Permanent etc.):	
d	Years teaching:	
e	Qualified Education Centre Trainer	Yes　/　No
f	If you are undertaking any computer training or have done in the past please state these courses below? Exact titles are not necessary.	

The information gathered from this question was analysed against age (Results, Table 1), against the number of courses completed (Results, Table 2) and against Gender (Results, Table 3). Q1f – An mean score was given for the number of courses completed where part-time courses undertaken within the DISC project were given a score = 1, Part – time course outside of DISC such as Diplomas etc. were given a score of 2 and Fulltime courses such as Masters were given a score of 15.These scores were loosely based on the time required to complete courses, a score of 1 being equivalent to approximately 6 weeks.

Question 2.

Q2	Internet Access			
a	Do you have internet access in school?	Yes / No		
b	Is accessing the Internet during the school day possible?	Yes / No		
c	Do you own a home PC?	Yes / No		
d	Does it have internet access?	Yes / No		
e	On a weekly basis would you access the Internet….	Once	Twice	More Often
f	Please circle any of the items below which may correspond to your use of the Internet or add any which may be omitted. Shopping Hobbies Training/Education Research Email Online Courses Sports Chat Rooms Travel Music Discussion Boards			

The information gathered from this question was analysed against age (Results, Table 1), against the number of courses completed (Results, Table 2) and against Gender (Results, Table 3).

Scores for this question were allocated as follows
Q2 a,b,c,d –   Yes = 1, No =0
Q2 e –   Once = 1 Twice = 2 More Often = 3
Q2 f -   1 item =1, 3 items = 2, more than 3 items = 3   Maximum score equals 10

Question 3.

Q3	Training within DISC						
a	Training provided adequately equips me to implement ICTs in a school environment and manage the IT classroom.	1	2	3	4	5	6
b	I find my training needs are being adequately catered for by the courses provided	1	2	3	4	5	6
c	I have sought training elsewhere in the past.	1	2	3	4	5	6
d	I am very aware of all training which is available to me.	1	2	3	4	5	6
e	Inflexibility of training times and dates is a problem.	1	2	3	4	5	6
f	I would be interested in undertaking an online course.	1	2	3	4	5	6

The information gathered from this question was analysed against age (Results, Table 1), against the number of courses completed (Results, Table 2) and against Gender (Results, Table 3). A mean score was given for each part of this question.

Q3e – Due to the fact that this question was phrased in the negative while all others were phrased in the positive, scores were reversed where 1 corresponds to 6 and vice versa. This ensured consistency of results.

Question 4.

Q4	Technical Support						
a	What types of problems occur on a day to day basis in the computer classroom?						
b	When dealing with this type of problem please list in ascending order the course of action which you might take.						
		Call for outside assistance (DISC or other).					
		Document the problem in detail.					
		Contact colleagues who may have similar problems.					
		Retrace steps which may have lead to the problem.					
		Read resource/reference materials which relate to the problem.					
		Search Internet discussion board for similar problems and solutions.					
c	What type of problems occur less frequently?						
d	When dealing with this type of problem please list in ascending order the course of action which you might take?						
		Call for outside assistance (DISC or other).					
		Document the problem in detail.					
		Contact colleagues who may have similar problems.					
		Retrace steps which may have lead to the problem.					
		Read resource/reference materials which relate to the problem.					
		Search Internet discussion board for similar problems and solutions.					
e	I am very aware of the technical problems which other people within the DISC project experience.	1	2	3	4	5	6
f	I would find it useful to have a facility enabling open discussion of technical problems within DISC.	1	2	3	4	5	6

Q4 a , c – The most common types of problems appearing throughout the survey were noted.

Q4 b, d – These questions were answered very badly with some people only filling in 1-3 of their choices. The focus of these parts was to determine whether the Internet can play a role in the troubleshooting process. As a result the most common placement as the Internet as an option was chosen for each of these two parts.

Q4 e,f - The information gathered from these parts was analysed against age (Results, Table 1), against the number of courses completed (Results, Table 2) and against Gender (Results, Table 3). A mean score was given for each.

Question 5.

Q5	Other Support and Information	
a	Please tick any other areas where extra information and resources would be of help, Feel free to add any topics that may be omitted.	
		New software titles
		Software titles currently being used effectively within the DISC project.
		Software used to manage networks
		Up to date hardware information
		Product prices
		How to sheets e.g. How to download drivers. How to install a printer on the network etc.
		Purchasing advice
		Experiences of other teachers within project on a variety of issues.
		Web resources for Education
		Online training courses
		Please add any other types of information or resources which you feel would be helpful.

On average the most common problems ticked were chosen.

Evaluation of Prototype and Discussion Forum

An informal email questionnaire was written with the aim of distributing it among the focus group using the WebCT email facility. Due to the time constraints of this project this part of the study will be carried out after submission. It is hoped that the questionnaire will establish initial impressions and problems with using the e-community and communicating online along with focusing future development and possible introductory training for other teachers within the DISC project.

Informal Conversation

School Visits
Informal conversations were conducted during routine school visits on topics such as troubleshooting , day to day technical support issues, software and training, among other things. This was useful in formulating a general structure for the types on content which may eventually appear within the e-community and for development of the outline for the prototype.

End of year Principals/IT co-ordinators meeting
This is a meeting which is held at the end of every school year. All school principals within the project are invited to attend and are brought up to date on all developments within DISC. At this stage the prototype had been developed and the idea of the online environment was aired to the group with a brief talk on the present status and future vision for the e-community. The floor was left open to comments and feedback on the issue.

One to One
A number of informal conversations were held with possible focus group members regarding the development of an online environment for the DISC project. These conversations took place prior to the undertaking of the project in an attempt to establish grassroots reaction to the idea and prime possible focus group members for interaction within such an environment.

Professional Experience

As project co-ordinator of the DISC project, the day to day challenge of meeting the needs of the schools and teachers was useful in establishing user needs and requirements for the e-community, the users being the teachers themselves and myself the co-ordinator.

Focus Group

A focus group of eight teachers within the DISC community was chosen to use and evaluate the prototype e-community. The reason for choosing these teachers lay in the fact that they were all to undertake a specialist training course in Network Management , during the last week of August, prior to their return to school.

This course was a once off, to be given by a professional computer training institute, funded by an outside institution with the understanding that these teachers would then become peer tutors on this topic, within the DISC project.

The course was to be customised, with the degree of customisation to be decided by the teachers themselves. From a selection of three Microsoft accredited courses, a combination of 12 modules needed to be chosen. The email and discussion board facility on the DISC e-community, WebCT site were to provide the forum for making these decisions.

Due to time constraints and the busy schedules of the teachers involved, a face to face meeting to introduce them to WebCT and its functionality was not possible. Instead a short introductory email was sent to all teachers within the group confirming their places on the Network Management Course and informing them that all future communication regarding this course would be carried out within a virtual environment which had just recently been established.

The teachers were already aware of the possibility of this development due to informal conversations held over the previous months.

A follow up mail was then sent with URL , logon and password details. This email also contained a brief explanation of WebCT and its uses, a few lines on what should be expected within the prototype e-community, what their role within this environment would be and what was required of them in the immediate future in this regard.

An introductory email was also written within the e-community itself , welcoming the teachers to the environment, again detailing the elements initially to be used within the environment and setting them a the task as outlined above, of choosing the modules to be covered within the network management course.

A document governing protocols for online discussion was also drawn up, this document was to be disseminated via email prior to any online discussion taking place.

Existing Websites

A number of websites offering some or all of the elements envisioned for the DISC e- community, were looked. This was a relatively uninvolved exercise used to see what other online communities were offering teachers with similar needs, and to ensure that the development effort was focused in a tried and tested direction, hopefully preventing the unnecessary waste of time and resources and ensuring objectivity in determining needs and requirements.

Prototype

Based on information gathered and analysis of information from questionnaires, interviews, personal experience and existing websites, a prototype online community was developed called the DISC e-community. This was a high fidelity* prototype in that it was developed within the environment which would eventually house the working version of the DISC

e-community. It did however entail compromises in that it was a 'horizontal' prototype, providing a range of functions but with little or no detail.

As DISC comes under the DIT banner design of the interface was not a huge issue as only certain defaults were permitted in order to keep consistency with other DIT initiatives housed within the WebCT environment.

*High fidelity prototype – Uses materials that you expect to find in the final product and looks more like the final system than a low-fidelity version.

4. Discussion

Limitations of the Study

This study aimed to research, develop and evaluate a prototype online community for a group of teachers responsible for co-ordinating IT within their school environment. Due to time limitations the development and evaluation phases were pursued at a relatively shallow level compared to the research phase.

The trends and results shown as a result of the survey taken may not be indicative of the teaching profession as a whole, due to the small sample sizes. Also a little over 50% of the surveys were returned, which leaves almost half of the target audience unsurveyed.

Feedback on the e-community was limited due to the time constraints of this project, so the degree of remodelling of the environment which can be suggested on the back of this is limited.

The design of question 4 on the survey did not elicit all the information it required, being very badly answered by most.

With these limitations in mind I will continue with the discussion.

The Survey – Planning and Development of the Community

From the survey results I hoped to get a clear picture of the profile of my potential users, their training, technical support and information needs and also to test the water on their attitudes towards online interaction.

Profiles
The picture which emerged of the user profile was of a generally quite IT literate demograph with everyone having undertaken some or at least one IT related training course and with the male forty something's being the most highly trained. Combining this with my professional experience of providing day to day technical support to schools within in the project, this would suggest that the types of courses being undertaken are not enhancing troubleshooting skills or classroom management skills although they do indicate a willingness to learn and lack of fear accessing technology. Also based on experience there are a minority , possibly as few as one or two teachers, who have an innate fear of technology. Both ends of the scale will need to be catered for in any further development of the e-community.

Internet

One of the greatest possible constraints to the development of the DISC e-community would have been access to the Internet. Without this the project could not go ahead. A clear outcome from this survey is that this is not a problem with most teachers having access in school and at home. The level of usage among those sampled was also high across the board. Everyone surveyed had experience communicating via email with only one person having made use of discussion boards. This is important for the success of the e-community as familiarity with an online environment will make facilitating the initial interaction a lot less difficult. Also initial communications will need to be restricted to email as this is a form of communication familiar to everyone.

Training

The initial development of the online community has and will continue to concentrate on the use of the communication tools. One of the uses envisioned is informing members of training available within and outside of the DISC project, another possibility down the line is that of supplying online training. The results in this section of the survey were not as expected. It would seem that the level of awareness of courses available within DISC is above average, that information on courses outside of DISC should be geared towards the older age groups who have completed a large number of prior DISC courses and are looking for something different. Online courses should be geared towards the less well trained younger age group.

Technical Support

Unfortunately the part of this question aimed at determining teacher's troubleshooting procedures was not well answered however it did give an idea of the part the Internet had to play in this process. As you would expect the Internet was accessed earlier in the troubleshooting process for less frequent, more complicated problems. The day to day problems listed were nothing new which enforces the idea that the online community can fulfil a very basic role in the technical support process by providing information on how to troubleshoot the most common problems encountered.

The problem of networks was listed as one of the less frequent problems. This is a very vague statement, the reason being that networks are extremely complicated and the management of them can be a very difficult task. For this reason posting troubleshooting information is not particularly useful in this situation. An ask an expert scenario would be most useful combined with discussion board sessions.

The use of a discussion forum although not flagged as online within the survey, is something that received a very positive response from those surveyed, with women more eager than men. This could be a very powerful tool within the project if planned and managed effectively.

All the information gathered during this research was used in the development of prototype within the WebCT environment.
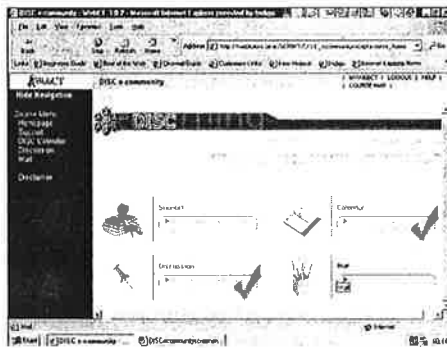
Homepage of Disc e-community

Support page :based on results from Q5.

This tool was used to then test the implementation of the e-community.

The focus group – Implementation of the e-Community

This process was an enlightening one. The data had been gathered, analysed and the prototype developed, now it was time to test the environment using a focus group. Those chosen had a definite need to use the online environment as it was the only way for them to communicate as a group regarding their communal task of choosing content for a network management course to be undertaken at the end of the Summer. Busy schedules did not allow a face to face meeting within the time scale in which the decisions needed to be made.

Due to the high level of IT literacy and motivation among these teachers it was assumed that an email introducing them to DISC e-community, combined with logon details and an indication that further information on what was required of them lay within the DISC e-community, would suffice.
Only one person accessed the community in the week that followed the posting. Phone calls were made, messages left and still only one response. Contact with the teachers proved very difficult.

The initial plan for introducing this focus group to the online community and their task was to hold a face to face meeting with everyone and walk them through the process, however due to the time constraints of this project and the teachers schedules this was not possible.

As a result of the experience however it has become apparent that this meeting must be held to ensure everyone is aware of project, what is expected of them and are accessing the environment on a regular basis. Also setting time constraints on discussions and interactions etc. may possibly not be a good idea, however this concept would require further research.

Evaluation

This is an ongoing process which is hoped will yield significant results before the end of this school term. It will focus on the focus group members initially and will follow their task of determining the course content for a Network Management Course.

DISC e-Community - The Immediate Future

As mentioned the organisation of a meeting with the focus group will occur as soon as possible. The plan being to introduce them formerly to the WebBot the environment, the concept of an online community, the vision for the DISC e-community and their immediate and hopefully long-term role in this project.

Conversations with the Computer Trainer due to deliver the Network Management Course at the end of the Summer have resulted in an agreement to enter into the DISC e-community as an Instructor and advisor on all things Network Management related. Having a 'leader' in the field of Network Management and hopefully provide the structure needed to produce a fruitful use of the online discussion board with the Trainer as chair.

With this in mind research into the management and hosting of online discussion will be conducted and a document of best practice drawn up. A document covering 'Netiquette' in online discussions has already been written see.

An email questionnaire will be distributed to all involved before the end of term and the future role out ,training and support materials will be tailored based on feedback received.

DISC e-Community – The Long Term Future

Considering that nearly 50% of the questionnaires distributed within DISC were not returned it would seem sensible not to invest too much time and money in the development of the e-community for the wider DISC community at this stage. Now that Information, Support and Training needs have been established, a more basic survey should be written to be distributed at the beginning of next term. This survey would be extremely short, possibly conducted at a start of year meeting of all the IT co-ordinators, and would ask basic questions on Internet access and usage, the two main prerequisites for engaging in an online community.

Introductory training should be developed with the novice and expert in mind. The tracking facility within WebBot can be used to gather information on the frequency of use by the members. This information can then be used to allow the co-ordinator to target those most in need of assistance and training.

Peer to peer support and interaction is part of the vision for the DISC e-community, however to ensure this occurs certain 'social' structures need to put in place within the community. It is hoped that at least some of the chosen focus group will become leaders within the online community, possibly becoming part of a development team focusing future growth of the community and helping to foster continuos interaction within the environment.

Actively encouraging teachers to help shape, and take ownership of DISC, is a process which has been encouraged in the running of the project in the past with teachers invited to join the management committee, there is no reason why it should be extended to the DISC e - community.

Initially the focus group will become part of a Network Management team, responsible for disseminating the information and expertise which they will have accrued during training, to the rest of the DISC teachers. The DISC e-community should provide a useful tool to support this task.

Although there is potential for involvement in the development and management of the e-community by expert teachers, one of the main difficulties which will be encountered will be that of ensuring regular accessing of the online environment by the remaining DISC teachers. Strategies to combat this need to be planned prior to any mass role out. A possible courses of action could be the provision of an electronic newsletter combined with short flyer to advertise it, get them logging on, on a monthly basis, more thought needs to given to the task of weekly logons. A two pronged approach of snail mail and email will play an important part in this process.

And finally, as mentioned earlier, the e-community will initially focus on fostering communication within the online environment mainly by email and eventually with discussion forums. However in order to truly develop the potential of this community it is important that partner organisations be invited to be tenants in the DISC e-community. This will ensure the development of expert content and services which should aid DISC's agenda along with that of the organisations in question. Current partners of the project are Hewlett Packard, the National Centre for Technology in Education, Dublin Inner City Partnership and Dublin Institute of Technology. It is important to realise at this stage that no single organisation could provide the services that a combination can. As more and more online communities for educators appear collaboration between these communities will need to form part of a future plan.

5. <u>Conclusion</u>

The development of an online community for teachers, such as the DISC e-community is an organic process. It is essential that the teachers themselves be included in every step of the process from development to maintenance. The project co-ordinator must be constantly aware of the grass roots feelings of the community in question in order to prevent failure and to maintain members interest. Members must be continuously motivated and engaged if they are to see the e-community as a useful part of their professional lives. An all hands on deck approach should be encouraged, bringing members and organisations on board to ensure the longevity of the e-community.

In short, in order to ensure that the DISC e-community and others like, are sustainable environments for teacher collaboration and support, they must be given the time and resources to " mature, develop social norms, grow leaders, and assimilate into the dominant local culture", (Schlager et al, 1999)

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