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## **Sustainability in an Online Community of Practice: the Case Study of a Group of Secondary School Educators in Victoria**

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*Abstract: This paper reports on Information Technology (IT) secondary school educators in Victoria and their involvement in an online community of practice. It examined the social effects of the online mailing list technology on their participation and factors that influenced their collaboration with other colleagues. In mapping these elements, the motivations of educators and the effects on online communities of practice can be distilled and then used to build and sustain other architectures of participation. It was found that mailing list subscribers seem to trade a currency of support, thoughts, ideas and answers, which helped them in their day-to-day teaching. Online communities of practice provide a convenient way to keep up professional networks while continuing to stay abreast with subject specific knowledge and skills. The findings of this case study may be generalised to other educational mailing lists to guide designers and managers and inspire educators to join and ultimately benefit from these text based online environments.*

### **Introduction**

This paper tells the story of IT teachers and their involvement in an online community of practice. It starts with a brief summary of mailing lists and their characteristics. This is followed by the context of this particular research and the participants before moving into a short overview of the aspects that build and sustain an online community of practice. A mixed method approach was used with data from an online survey and an analysis of the contributions posted to two mailing lists. The survey used an online form with multiple choice options and scope for elaboration or clarification. The purpose of the survey was to profile the participants and their email message posting behaviour, motivation and continued engagement. The mailing list contributions were aggregated and analysed to examine and determine the social nature of working online. Particular attention was paid to the type of intangible public goods<sup>1</sup> traded between participants, namely the various kinds of interactions and their perceived value (e.g. innovative ideas, moral support, answers to pressing questions). The attitudes and behaviour that constitute a good mailing list participant were also explored. The paper closes with a summary of results and general observations to inform similar online groups of educators. It may help them to better understand and manage the

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<sup>1</sup> *Public goods* describes the benefits available to everyone regardless of whether or not people have contributed to achieve it. Online public goods are not diminished by consumption, non-trivial and non-excludable.

larger virtual commons of cyberspace occupied by them in relation to their real-world environments.

## Background

### The mechanics of mailing lists

“When we change the way we communicate, we change society” (Shirky, 2008, p 17). There are two types of online mailing lists. Membership can be *open* to the online public<sup>2</sup> or *closed* so that it is restricted to certain participants. After joining a mailing list, subscribers can read and reply to messages posted by other subscribers or send a message to a particular mailing list address, which forwards it on to everybody. This research focused on open mailing lists where any public member can join or subscribe after completing a World Wide Web page with an automatic subscription. With a few keystrokes, a single email message can be sent to thousands of different people.

Like the printing press, the use of this feature became a significant and dynamic shift in the nature of communication and information resource exchange by anybody with an e-mail address. Shirky (2008) observed that this ease blurred the boundaries of personal information and publishing. “In a world where publishing is effortless, the decision to publish something isn’t terribly momentous” (Shirky, 2008, p. 79). That ease allows fast, cheap and large-scale distribution of valuable information but also of spam or junk messages<sup>3</sup>.

The new opportunities and constraints online interaction creates are doubled-edged, leading to results that can amplify both beneficial and noxious social processes (Kollock and Smith, 1999).

### The nature and social dimensions of mailing list dialogue

E-mail dialogue on mailing lists is quite different from other modes of communication. The string of messages from a mailing list cannot be viewed as a sequential text monologue, or synchronous (real-time) communication (Bowskill, 1998). Asynchronous dialogue between educators via mailing lists overcomes different time zones and continents because time and geographic location are no longer limiting factors to engage joint activities (Fluck, 1995). However, when communicating face-to-face, people use body language and identity context cues to define the reactions of others. Messages sent by email are devoid of important emotional and social cues. (boyd, 2008).<sup>4</sup> Also, the social nature of email dialogue and the dynamics of online interaction bring new challenges. It makes it easy for a writer to forget the audience and feel unrestrained by their rules and norms of behaviour (Clarke, 1998). The resulting uninhibited and negative behaviour online is known as ‘flaming’. The electronic distribution of work also introduces some new problems of copyright and intellectual property (Weckert and Fellow, 1996). Nevertheless, the benefits of educators publicly sharing and collaborating online have been widely considered (Rheingold, 1993; Ohlund, Yu, DiGangi and Jannasch-Pennell, 2001; Cecez-Kecmanovic and Webb, 2001) and seem to outweigh the drawbacks. During the 1990’s a large body of literature on Computer-Mediated Communication (CMC) covered those arguments, which interested readers may wish to peruse independently as elaboration is beyond the scope of this paper.

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<sup>2</sup> The term *online public* is used here to describe as a whole, the people constituting the community of cyberspace or Internet.

<sup>3</sup> SPAM is usually taken to mean excessive multiple postings (Wikipedia, 2009)

<sup>4</sup> danah boyd insists on the non-capitalisation of her name for personal and political reasons (boyd 2009).

Smith (1999) suggests that the most productive and stable groups have 50 to 500 active members and even more passive participants. It has to be noted that mailing list groups are not static. Like many groups, they can grow, develop, change and mature or stagnate. King (1999) described the social development of online groups and suggested that an initial honeymoon phase is followed by disenchantment, which then leads to cohesiveness.

### **Developing an online community of practice**

The impact of online groups on current practices of teaching, learning and schooling must not be underestimated as they have become popular for professional learning amongst educators (Fishman, Marx, Blumfeld, Krajcik and Soloway, 2004; Loucks-Horsley, Love, Stiles, Mundry and Hewson, 2003). Compared with face-to-face meetings, it provides a unique opportunity for educators to continuously brainstorm ideas, be exposed to a variety of material and participate in professional development at a time of their convenience, with little associated cost or travel.

Subscribers engage with mailing lists and work together online in many different ways to create a successful online community and will assume a range of roles including leaders, active participants or lurkers (quiet observers) to develop a virtual learning community. A leader can help organise an online group, set an agenda, define goals and help build cohesiveness whereas a lurker is a mailing list subscriber that reads messages posted by others but who does not make any postings themselves (Topper, 2001). *Social loafing* is the tendency to reduce individual contribution when working in groups compared to the social effort of working alone. *Free riding* can occur when an individual does not make an equivalent contribution yet shares the benefits of the group. (Piezon and Donaldson, 2005)

Some mailing lists are moderated, with leaders moderating<sup>5</sup> the discussion for online groups and mailing lists. Some moderators directly filter the discussion on mailing lists by reading and approving each message to ensure that it is appropriate before further distribution to avoid information overload and dysfunctional human behaviour (Clarke, 1998).

By contrast, un-moderated mailing lists are open to online public subscription from anybody and all messages posted are automatically distributed. Participants can try to shape the behaviour of others by educating and informing, issuing notices or cautions, trading hostile interactions, flaming<sup>6</sup> or parodies, which can be more or less successful depending on circumstances.

### **Social construction of knowledge in online environments**

Participants in online learning environments are not passive recipients but also active creators of information (Spender and Stewart, 2000). Essentially, online learning is a two-way process. In terms of the nature of learning in an online discussion group, Salter (2000) describes it as fitting a constructivist model where knowledge is constructed and assimilated to pre-existing notions and is then modified in light of new information. In this study, human relationships are central and online interactions such as negotiating, cooperating, resolving conflict, taking on roles (e.g. lurker, leader) are vital, which is characteristic for a social constructionist perspective (Gergen, 1995). Another way of conceptualising is Vygotsky's (1978, 1986) socio-cultural approach in which he claims that knowledge is co-constructed in

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<sup>5</sup> Moderation is taken here to describe the supervision or mediation that is done online by a leading participant.

<sup>6</sup> Flaming is also used for long intensive and heated discussions, even though insults may not occur. (Wikipedia 2009b)

collaborative learning environments through social processes.

Regardless of theoretical framework, online cooperation is not unproblematic. Kollock (1998) outlines the tension between the social dilemma of individual benefits and collective rationality of cooperation, the temptation to gather valuable information and advice without contributing anything back. He (1999) examined the open and free sharing of public goods between online community members and identified that they are motivated by reputation, attachment, sense of efficiency, future reciprocity, self-interest, altruism and payment of an outstanding debt. Although the public goods in this research are intangible because they consist of support, information, thoughts, ideas and answers, it is argued that they are just as valuable. In fact, this can form the basis for a currency of exchange.

## **Method**

### **Justification of this research**

The study aimed to determine how teachers engage with mailing lists, specifically under what conditions successful cooperation happens, which is a relative neglected area. Writings about this area tended to concentrate on technical information or instruction methods for groups that use Computer-Mediated Communication (CMC) technologies. Numerous studies have compared traditional face-to-face learning with CMC environments amongst tertiary educators or students (Schrum, 1995; Korenman and Wyatt 1996; Berge 1997; Bowskill 1998; King 1999). Others (Thomson, 1996; Nonnecke and Preece, 2000) had focussed on the number of posts, replies and message threads. However, Hillman (as cited in Hull and Saxon, 2009) argued that research must move beyond just counting to also include information about the quality of the interaction.

What makes for a successful online community is often poorly understood (Kollock, 1998) and no overall theory about why online groups of teachers work or fail has been developed (King 1999). According to Cecez-Kecmanovic and Webb (2001) there has been little interest by researchers to better understand the learning processes that occur in the online environment and Smith (1999) argued that research is needed to examine the aggregate details of individual groups and the emergent social structures.

### **Research aims and questions**

Given the limited research undertaken in this field, an investigation was warranted to determine how educators engage with mailing lists, consider if are they able to successfully use mailing lists to cooperate and share their work and if so

- under what conditions does it happen?
- how does it happen and how can we measure what happens?

The research aim was therefore to identify:

- Factors that describe educators who are important intellectual collaborators on educational mailing lists.
- Consequences of educators working together online with an educational mailing list.
- Different contributions that are valued by the group.
- Motivations for educators to share their work online with an educational mailing list.

To achieve this, data was gathered from two very different but complimentary mailing lists, and a comprehensive online survey of participants was undertaken with a detailed analysis of their e-mail contributions, with the following governing questions in mind:

- How do educators access and when do they use educational mailing lists? What time, access, support and encouragement are they given by their school administration?

- What schools do they come from?
- What do educators think of the social shift to a virtual online group? What becomes easier or more difficult to do and what are the aggregate consequences of these changes?
  - Are their individual needs met from sharing their resources online? What do they contribute to the group? How are they able to tie their curriculum to their telecommunications experience?
  - What aspects of Internet based communication contribute to increased collaboration amongst educators? Are participants motivated by their peers and self-motivated by their own engagement? Do they share feelings of personal accomplishment or enthusiasm

The online survey helped profile participant motivation, usage and behaviour patterns to provide a base-line measure of online activity whereas the analysis of their online contribution examined their interactions, attitudes and perceptions to give insight into the greater social structure of an online virtual community of teachers.

### **Research setting**

The study was conducted amongst members of the Information Processing and Management (IPM) and Information Systems (IS) mailing list for the period of one year. Both lists are open to anonymous online public subscription and are not part of a formal course or instructional program. Subscribers to the IPM and IS mailing lists are typically current and practicing IPM or IS educators in Victoria. The mailing lists are based upon Victorian Certificate of Education (VCE) Information Technology subjects of the same acronym. Students of their classes typically range from 17 to 18 years of age and are in their final year of secondary school education.

Both mailing lists are physically hosted on the same mailing list server or computer at a secondary school in an outer-eastern suburb of Melbourne. They operate with the mailing list feature built into the Mercury software (Harris, 2000). Subscribers to each mailing list can access an online list of current subscribers and browse an archive of messages. The mailing lists do not have a published set of online rules of behaviour, netiquette or FAQ. There is no moderator although a technical contact is introduced upon subscribing to each mailing list.

### **Participant demographics**

From the survey of workplace responsibilities (graph 1), most survey participants teach year 11 and 12 VCE information technology (89%) and year 7 to 10 information technology (64%). Many also undertake extra duties such as Learning Technology Coordination, Subject Area Coordination or Computer Manager.

A majority of the online survey participants (73%) were male and around a quarter (27%) were female. There is a broad distribution of ages amongst the online survey participants ranging from 28 to 57 years.

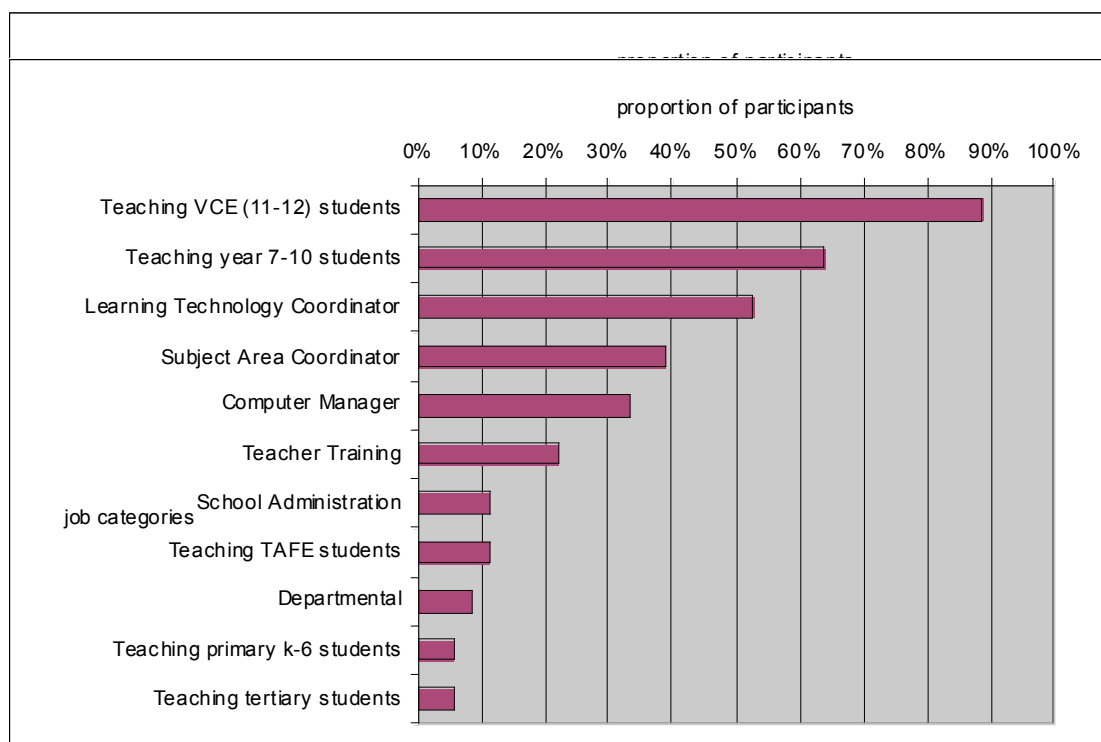


Figure 1: Profile of participant workplace responsibilities

**Results**

A total of 33 educators participated in an online survey, which represents a small proportion (0.4%) of the total population of 669 subscribers to the IPM and IS mailing lists. However, the 515 messages posted by this cohort represent a large proportion (21%) of the total 2448 messages posted to both mailing lists. It is an average of 15.6 e-mail messages per person, which is significantly larger than the average of 3.43 messages for the IPM mailing list and 2.56 messages for the IS mailing list. This lends considerable trustworthiness to the findings of the online survey.

From the e-mail message posting profile (graph 2), a small group of online survey participants (18%) posted no email messages compared to subscribers of the IPM (50%) and IS (52%) mailing lists. Thus, when comparing the survey cohort to the mailing lists data there is a sampling bias that has manifested in fewer lurkers and some very active contributors.

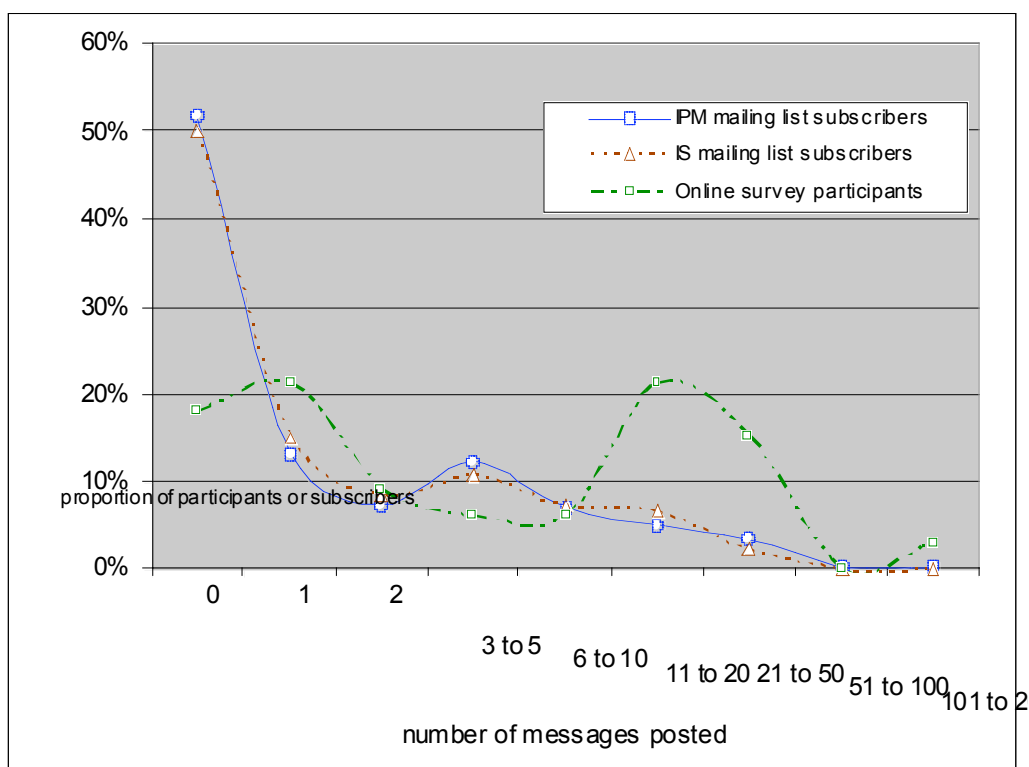


Figure 2: E-mail message posting profile

#### Initiation to and continuation of the mailing list

To learn, what factors are most responsible for helping to recruit participants to mailing lists, they were asked to select from a range of options. Many participants first heard about their mailing list by ‘word-of-mouth’. Online introductions were important for IS participants with around 46% reporting that they first heard about the IS mailing list from other mailing lists, a personal e-mail message or the World-Wide Web. By contrast, over 74% of IPM participants reported that word of mouth, subject association meetings and articles were more important for their first introduction to the IPM mailing list.

From the reasons why participants continue to use a mailing list (graph 4), most conveyed that they used the mailing list to access information and resources (93%) to support or enhance their work (80%). Many indicated that they use it to communicate between individuals (60%) and learn new knowledge or skills (60%). A smaller number (33%) considered the mailing list important for exploring, examine and build situations (modelling).

Participants use mailing list in a variety of ways but a principle reason is to seek information and resources to support their work in the classroom.



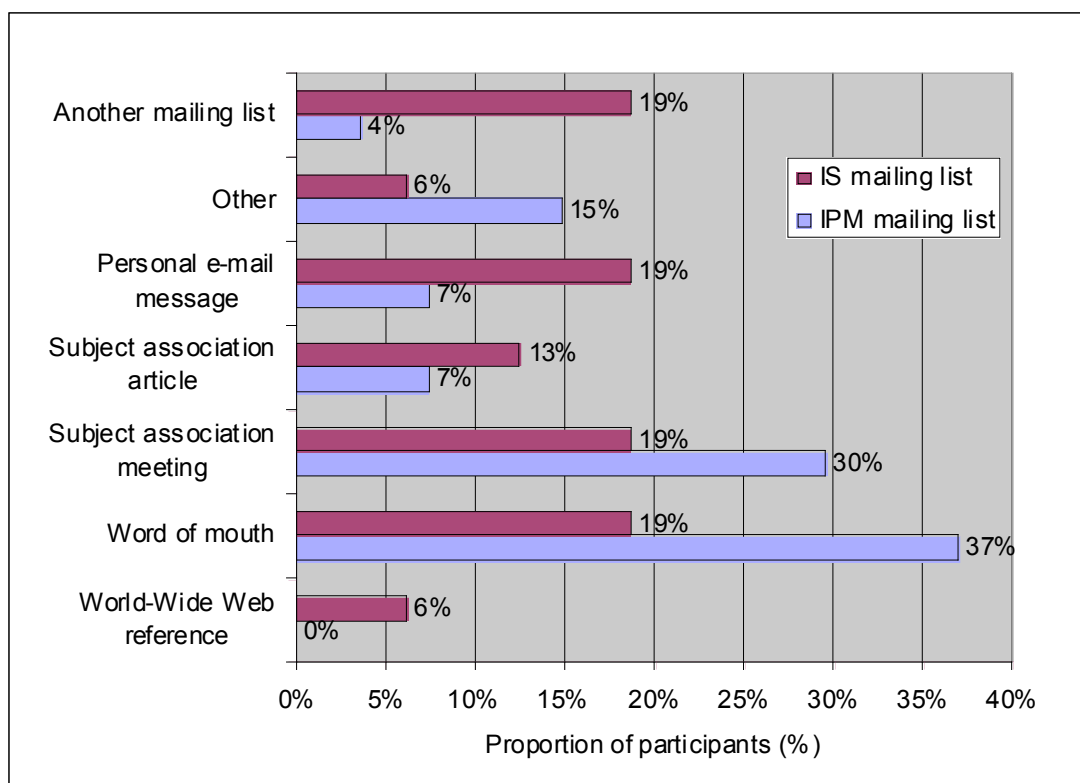


Figure 3: How participants first heard about mailing list

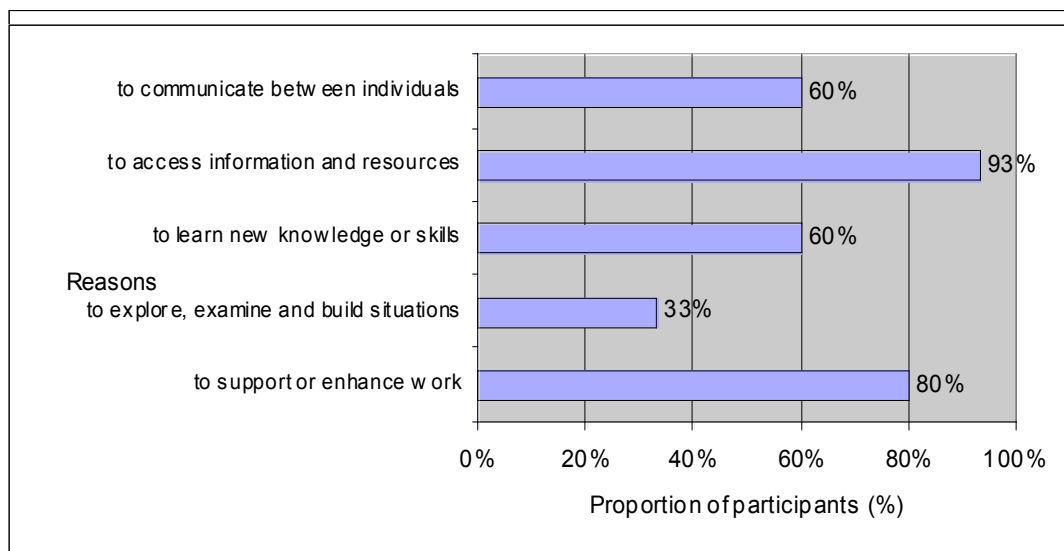


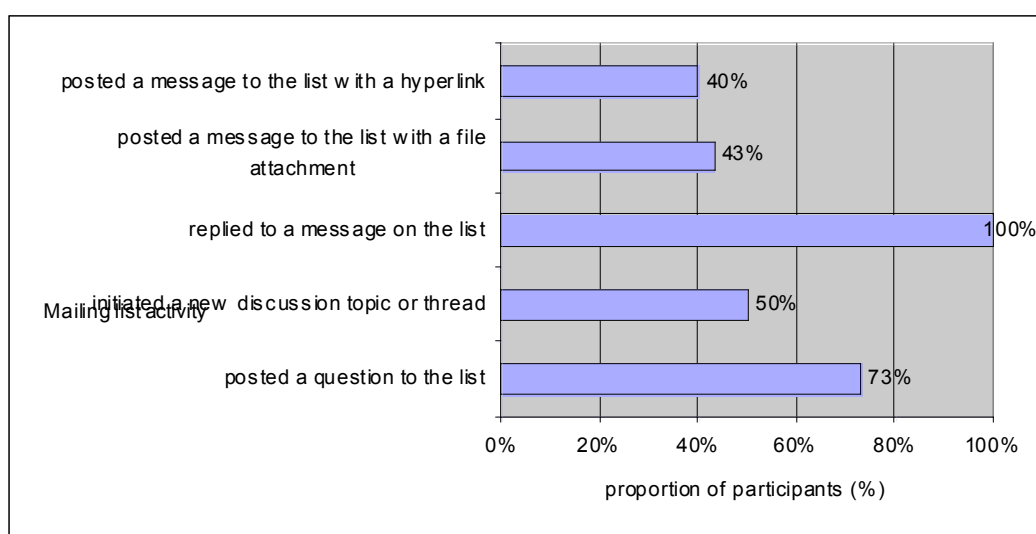
Figure 4: Reasons why participant continues to use mailing list

**Activities contributing to online discussions and use of public goods**

Participants selected from a range of options how they contributed to existing online discussions. Directly engaging with the mailing list by posting a reply or question was considered most important. All participants (100%) said that they had replied to a message on the mailing list. Most (73%) reported that they had posted a question to the mailing list. Around half of the participants had supported online discussions by starting a new topic or thread (50%), posting a message with a file attachment (43%) and posting a message with a hyperlink (40%).

In selecting from three options, participants conveyed what resources they used. The majority of participants (93%) had used file attachments, 89 % drew on the Internet hyperlinks as a resource while 79 % used ideas generated during online discussions.

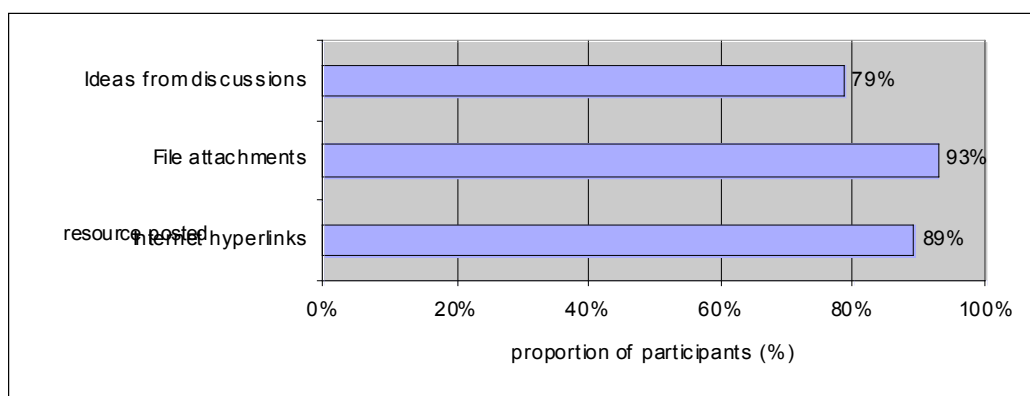
**Levels of engagement**



**Figure 5: Activities that support online discussions**

Note: Survey participants could select more than one option so the sum of these is not equal to 100%

By selecting one of three descriptions to indicate the extent of their involvement with the mailing list, more than half of the participants (61%) identified themselves as *engaging participants* posting on average 26.2 e-mail messages during the calendar year. A smaller number (32%) identified themselves as *quiet observers* and correspondingly posted only an average of 5.4 e-mail messages during that year.



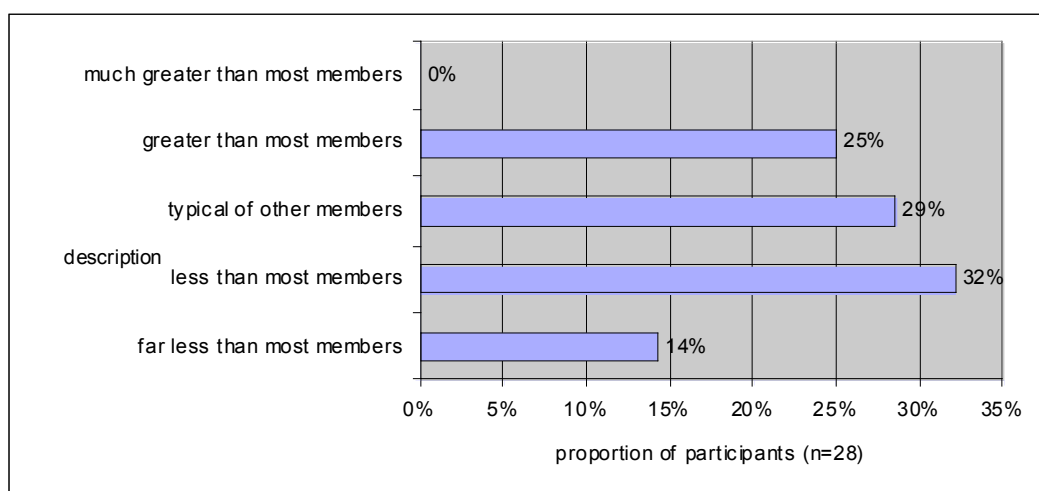
**Figure 6: Use of resources posted by others**

One participant suggested that all members should at least contribute 12 messages per year, noting that: “To improve this mailing list I believe that each member should be asked to contribute at least monthly with a posting.” (Response to question 5.4.)

Several survey responses made specific reference to lurkers, ranging from a call for “...lurkers to show more spirit and contribute...” with lurkers pleading for “...others to recognise for the diversity needed on a mailing list”. At the end of the year, some subscribers on each mailing list discussed the benefits of lurking and courage needed to contribute, for example: “I have been lurking for a while and enjoying the comments” (IPM). “Thanks to all for suggestions, contributions, etc this year. Hopefully next year I’ll feel a little more confident about sharing some of my ideas” (IPM).

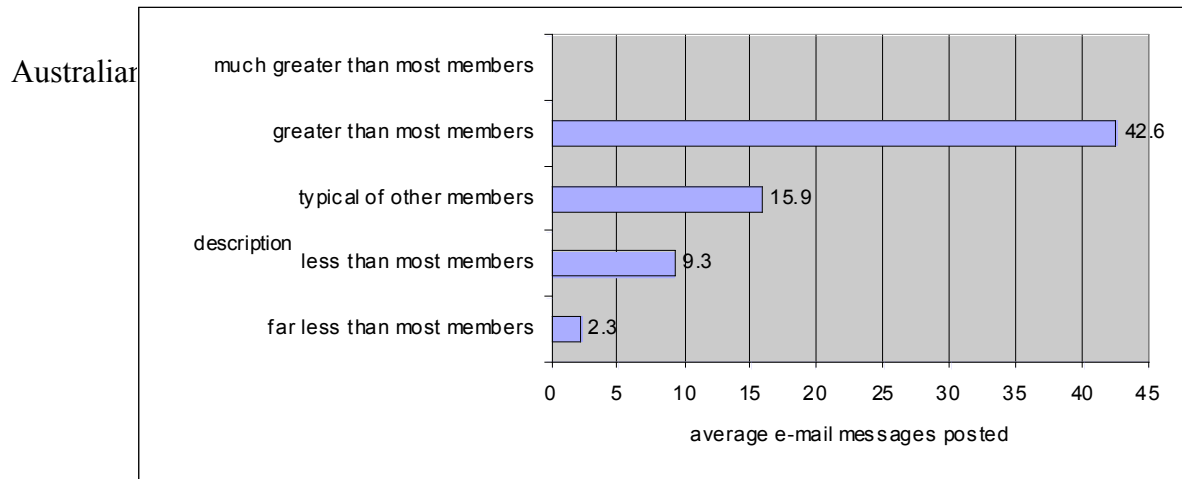
*Comparison with other participants*

In comparing their involvement with that of other subscribers, participants selected from a range of five different descriptions.



**Figure 7: Comparison with other participants**

The average number of email messages posted for each category was calculated by relating participant responses to the mailing list archive.



**Figure 8: Comparison with average list messages posted**

The results for Graph 7 and Graph 8 demonstrate correspondence between the average number of messages posted and the participant's comparison with other mailing list members. The group that described themselves as 'typical e-mail message posters' sent on average 15.9 messages. Subscribers on the IPM mailing list averaged 3.43 messages with those on the IS mailing list averaging 2.56 messages.

#### **Influence by other mailing list participants**

When asked if other mailing list subscribers influenced their contributions, most participants (70 %) answered in the affirmative, with elaborations being summarised as:

- I am encouraged to contribute when others provide positive and supporting words or feelings or when I want to acknowledge good ideas presented.
- I am reluctant to contribute when others provide responses that are pedantic or vitriolic or when discussions become tedious and irrelevant.
- I don't want to sound silly when others seem to be experts.

#### **Subscription to other mailing lists**

Online survey participants were asked what other educational mailing lists they had joined to determine the number and nature of other links. Half the participants (50%) subscribe to an average of 2.7 educational mailing lists, the remaining half of participants (50%) do not subscribe to any other list. This implies that subscribers to each mailing list are not operating within in a bound or contained environment as several participants regularly cross post resources between different mailing list communities.

#### **Sharing benefits**

Participants were asked to detail a response to the statement: "Benefits produced by your efforts on a mailing list may be reaped by others who have not contributed to those efforts." The following broad constructs were synthesised from their aggregate responses, with subheadings in italics adapted from Kollock's (1999) examination of the exchange of public goods:

- It is an expected role or duty for us to share and contribute (*reputation, attachment, sense of efficiency*)
- By sharing and contributing, others will perhaps take my lead. (*future reciprocity*)

- It does not matter, at least somebody else has benefitted. (*altruism*)
- I have already benefitted from the efforts and contributions of others. (*outstanding debt, sense of efficiency*)

Some suggested that mailing lists needed this attitude to survive: “By sharing your work and ideas, you encourage others to share. If everyone adopted the stance quoted ... would mean no mailing list!” Others felt an obligation to educate: “Oh well. I don’t mind, the goal is to educate students as well as we can – it doesn’t matter whether my work or someone else’s work does this.” Although a range of different motivations were recorded, the attitude of most participants was either altruistic, selfless or indifferent towards others benefitting from their contributions.

#### **Sharing work outside the mailing list**

97 % of participants said that they were sharing their work with other educators at their workplace, while 3 % did not. The following attitudes emerged in elaborations:

- Sharing resources is second nature to my current job
- I only share my work with others on the mailing list
- I share my work with others at subject association seminars and conferences
- I share my work with other school colleagues
- I share my work by publishing it on the Intranet, e-mail or floppy disk.

Similarly, when asked if others at their workplace influenced their contributions to the mailing list 90% of participants responded “No” and 10 % replied with a “Yes”.

Some participants also engage in discussions beyond what is seen on the mailing list. As one participant remarked:

“But primarily through the list, because of its immediacy and convenience. Often I will move ‘off-list’ and continue a discussion by direct email if I feel that it will impose unwanted ‘clutter’ to the list.”

A number of responses indicated a degree of confusion between sharing their own work and sharing the work by others. When work is further modified and electronically distributed, the line between the public and personal becomes very blurred.

#### **Feedback from others on mailing list**

90 % of participants indicated that they valued the feedback from other educators on the mailing list; 10 % did not. In elaborating their answers, the following surfaced:

- Feedback helps me to form an opinion and learn new ideas
- Feedback keeps me on track and lets me know where I stand.
- I am encouraged to participate and contribute more by reassuring and rewarding feedback.
- It gives me a good feeling to provide or receive feedback.
- Feedback can sometimes be misguided or wrong.

Feedback seems to provide an important role in helping participants measure their attitudes and ideas against others on the mailing list. It doesn’t seem to matter that some personal feedback was directed back to the entire group via the mailing list.

### **Encouraging others to contribute or participate**

In reflecting how participants might encourage others to further contribute or participate on the mailing list they proposed:

- By modelling good mailing list behaviour, posting contributions and asking open-ended requests for information.
- By personally extending an invitation for others to join and contribute, communicating the benefits of subscribing to the mailing list.
- It is a personal preference if others wish to not participate and contribute.

### **Good mailing list participants**

Participants were asked to describe what they think makes a good mailing list participant:

- Somebody prepared to contribute and sharing
  - an original idea or answer
  - a quality piece of work or resource
- Somebody who can initiate, engage or maintain a debate, providing
  - a sensible or diplomatic response to controversial issues
  - honest and positive responses, withholding negative feedback
  - sharing light-hearted comments
- Somebody demonstrating exemplary mailing list behaviour such as
  - limiting the e-mail messages posted
  - editing and carefully wording e-mail messages
  - knowing when to keep quiet

### **Interactions most valued**

Participants were asked to describe what kind of interactions they most valued, which yielded the following aggregated replies:

- The posted links to resources, attachments of tasks, worksheets and materials saves considerable teacher preparatory time
- Reading the wide range of views, ideas and ways of teaching the subject and professional development strategies gives a fresh curriculum perspective
- Contributing to discussions and debates, replies to questions and personal feedback helps contribute to the social atmosphere
- Seeing, comparing and evaluating my work with others helps reduce professional isolation

Several participants used this question as a chance to promote their positive feelings and support for these mailing lists. For example: "The lists for IPM & IS are remarkable and something that teachers should be very proud of." The following participant alluded to the social nature of working online in the response. "I enjoy the 'in' discussions / jokes between members as they add a social factor missing due to the isolation of IT teachers in schools. I also enjoy the discussions about the faults with the current course descriptions."

### ***Etiquette and mailing list fair use guidelines***

A discussion thread on the IPM list about appropriate mailing list behaviour was started after a significant increase in posted messages. One person remarked that they had over 145 messages to read and process after a three-day absence from the mailing list. It highlighted

for many subscribers a weakness when working in this medium and the absence of any formal rules or guidelines. The thread was started with an e-mail message asking participants to consider restricting their replies to the sender and not the mailing list. It was expressed that many messages had little content related to specific relevant topics and took up precious bandwidth or time to process. Others requested that subscribers should stick to the topic so that only messages directly relating to the subject area are discussed. At this point, several subscribers expressed a concern about any change or moves to restrict messages as these might also inhibit the free sharing and flow of information. As one subscriber wrote: "I feel that if one person has a question there is at least another half a dozen people who have the same or similar queries... I just hope that some of my infrequent rantings may have been useful to fellow teachers on this mailing list and isn't the free sharing of information what this list is all about."

It was felt by others that some subscribers might be reluctant to contribute or that they would miss valuable discussions by private email conversations.

"... If we insist that only worthwhile messages are posted we will miss out on a lot of quality work that people are reluctant to share. Often what I gain is not a whole project but an idea, a possible direction, or an alternative interpretation (etc.) that had not occurred to me. We should not discourage any contributions."

It was also suggested by some subscribers that these mailing lists required ongoing dialogue and regular message postings. By these discussions, the mailing lists seem to be able to moderate their own level of activity without the intervention of a specific moderator or published set of rules.

### *Limitations of the research*

A significant limitation of this research and its findings is based in the sample population of Information Technology educators on the IPM and IS mailing lists, which are not typical of teachers from other learning areas. By virtue of their subject area, they are likely to demonstrate an increased positive attitude and above average computer skills to embrace CMC technologies and high degree of online social maturity. However, as the majority of VCE Information Technology educators subscribe to either the IPM or IS mailing list, the findings have considerable authority for them given the decisions reached and discussions initiated by educators on both mailing lists. Nevertheless, insights from this study may be broadly generalised to similar online groups of teachers.

Interactions beyond and around the mailing list are highly probably as some mailing list participants might e-mail each other directly, meet face to face or telephone each other. From discussion on the mailing list, this seem a regularly occurrence following particular workshops. Evidence of this interaction would not appear amongst the messages posted to the mailing lists and would limit any full understanding about the nature, extent and influence of interactions on the mailing list.

### **Conclusion**

Subscribers tend to use the mailing list to access information and resources, support or enhance their work, communicate between individuals and learn new knowledge or skills. The interactions on the mailing list most valued by participants were resources that saved preparation time. Reduced professional isolation, fresh curriculum perspectives and the sociable atmosphere were also valued. There is a large secondary population of teachers that indirectly benefits from these mailing lists. The motivation to share their work was in

returning a favour of help, to reduce professional isolation and as a service for others. Reluctance to contribute grows when there is a lack confidence, discussions become hostile or irrelevant, or feedback was misguided.

The teachers in this study believed that the best way to encourage others to join the mailing list included modeling good mailing list behavior, personally extending an invitation and recognizing that not everybody desires to participate and contribute. It was suggested that a good mailing list participant is somebody who is prepared and willing to share their work, while initiating and engaging in a positive and diplomatic online debate. The mailing lists seem to manage a balance between the comfort of a friendly and supportive environment with the stimulation of focussed debate, by motivating smaller groups of subscribers with different needs to contribute. A currency of support, thoughts, ideas and answers seems to be frequently traded between mailing list subscribers.

These findings could be considered by managers of other existing educational mailing lists or used to inform designers of new text based learning environments. In Australia, pre-service teacher training courses incorporating online components are also becoming increasingly commonplace, including undergraduate students enrolled in teacher education. Once they have moved into a teaching position, the experience of participating in a professional mailing list may well be needed for their classroom teaching as many schools have discussion groups set up for teacher-teacher but also for teacher-student interaction, often on their school intranets. This is pertinent in times of rapidly increasing online teaching with Hull and Saxon (2009) quoting 2.6 million undergraduate students enrolled in the United States during 2005 alone.

In times of limited professional development resources, falling conference attendance rates, financial pressures, and budget constraints, the task of practising educators to maintain best professional practice could be greatly facilitated by their participating in these online communities. In Victoria at the end of 2009, this will be endorsed and facilitated by the Victorian Institute of Teaching (VIT) through the professional reading portal and associated professional reading group with credit given towards the required hours for VIT professional registration (Mildren, 2009).

Given the growing pervasiveness of communicating and information sharing online by electronic mail, evidence based research such as this case study is an essential pre-cursor to successful engagement in text-based online environments and the design of any new learning workspace for educators.

## References

- Berge, Z. L. (1997). "Characteristics of online teaching in post-secondary, formal education." *Educational Technology* 37(3): p 35-47.
- Bowskill, N. (1998). "Networked Learning: A Review Paper". [Online] Retrieved on 13 Dec 2004 from <http://netways.shef.ac.uk/rbase/reports/chapter.htm>
- boyd, danah (2008). "None of this is Real." Structures of Participation in Digital Culture. (ed. Joe Karaganis). New York: Social Science Research Council, pp.132-157.
- boyd, danah (2009). "what's in a name?" [Online] *danah's blog* (Updated 8 May 2005) Retrieved on 20 March 2009 from <http://www.danah.org/name.html>
- Cecez-Kecmanovic, D. and Webb, C. (2001) "Communicative Practices and Knowledge Co-creation in Web-mediated Collaborative Learning". [Online] *IS-KOMO Research Group: University of Western Sydney*. (Updated 15 Dec 2000) Retrieved on 31 Jun 2001 from <http://www.uws.edu.au/iskomo/publications/crinq2.htm>



- Clarke, R. (1998). "NET-ETHIQUETTE Mini Case Studies of Dysfunctional Human Behaviour on the Net". [Online] *Roger Clarke*. (Updated 4 Sep 1998) Retrieved on 25 November 2008 from <http://www.anu.edu.au/people/Roger.Clarke/II/Netethiquettecases#io>
- Fishman, B., Marx, R.W., Blumenfeld, P., Krajcik, J. and Soloway, E. (2004). Creating a framework for research on systemic technology innovations. *The Journal of the Learning Sciences*. 13(1), 43-76.
- Fluck, A. (1995). "Computers in Schools - a framework for development". [Online] *Australian Council for Computers in Education and Australian Computer Society*. (Updated 1 Nov 2001) Retrieved on 25 Dec 2001 from [http://www.acce.edu.au/position\\_schools.asp](http://www.acce.edu.au/position_schools.asp)
- Gergen, K.J. (1995). Social construction and the educational process. In L.P. Steffe & J.Gale (Eds.), *Constructivism in education*. Hillsdale, NJ: Erlbaum.
- Harris, D. (2000). "Mercury/32". [Computer Software] David Harris. (Version 1.47)
- Herring, S. C. (1999). "Interactional Coherence in CMC." *Journal of Computer Mediated Communications* 4(4).
- Hull, D. M. Saxon T. F. (2009) Negotiation of meaning and co-construction of knowledge: An experimental analysis of asynchronous online instruction" *Computers and Education* 52, pp.624-639.
- King, K. (1999). "Group Dynamics for the Online Professor". [Conference] *Fifth Australian World Wide Web Conference*, Southern Cross University, NSW Australia. Also available at <http://ausweb.scu.edu.au/aw99/papers/king/paper.html>
- Kollock, P. (1998). "Design Principles for Online Communities." *PC Update* 15(5): p 58-60.
- Kollock, P. (1999). "The Economies of Online Cooperation: Gifts and Public Goods in Cyberspace". [Online] *London: Routledge*. (Updated 1999) Retrieved on 25 November 2008 from [http://www.sscnet.ucla.edu/soc/faculty/kollock/papers/communities\\_00.htm](http://www.sscnet.ucla.edu/soc/faculty/kollock/papers/communities_00.htm)
- Korenman, J. and N. Wyatt (1996). "Group Dynamics in an e-mail forum". *Computer-mediated communication: linguistic, social and cross-cultural perspectives*. S. C. Herring. Netherlands, John Benjamins Publishing Co.: 225-242.
- Loucks-Horsley, S., Love, N., Stiles, K.E., Mundry, S. and Hewson, P.W. (2003). *Designing professional development for teachers of science and mathematics* (2<sup>nd</sup> ed.) Thousand Oaks, CA: Corwin Press.
- Mildren, John (2009). Pdi. Council of Professional Teaching Associations of Victoria. Presentation by John Mildren, Manager, Professional Learning, Victorian Institute of Teaching on 10 March 2009, Statewide Resource Center, Carlton, Victoria.
- Nonnecke, B., and Preece, J. (2000). Lurker demographics: Counting the silent. *Proceedings of CHI 2000*. The Hague: ACM.
- Ohlund, B., Yu, C.H., DiGangi, S., and Jannasch-Pennell, A. (2001). Impact of asynchronous and synchronous Internet-based communication on collaboration and performance among K-12 teachers. *Journal of Educational Computing Research*, 23, 435-450. Available: <http://seamonkey.ed.asu.edu/~alex/pub/AERA1999/collaboration.html>
- Piezon, S. L. and Donaldson, R. L (2005) "Online Groups and Social Loafing: Understanding Student-Group Interactions." *Online Journal of Distance Learning Administration*. 8 (4). [Online] *University of West Georgia, Distance Education Centre*. Retrieved on 17 March 2009 from <http://www.westga.edu/~distance/ojdla/winter84/piezon84.htm>
- Reingold, H. (1993). "The Virtual Community: Homesteading on the Electronic Frontier" Cambridge, England, MIT Press. 447 pp.
- Salter, G. (2000). "Making use of online discussion groups." *Australian Educational Computing* 15(2): p 5 - 10.

- Schrum, L. (1995). "Educators and the Internet: A case study of professional development." *Computers and Education* **24**(3): p 221 - 228.
- Shirky, C. (2008). "Here comes everybody". The power of organizing without organizations. Penguin Group, Australia.
- Smith, M. A. (1999). "Invisible Crowds in Cyberspace: Measuring and Mapping the Social Structure of USENET". [Online] *University of California, Los Angeles*. Retrieved on 25 November 2008 from <http://www.research.microsoft.com/~masmith/Invisible%20Crowds%20in%20Cyberspace.doc>. Also published in: Smith, Marc. "Invisible Crowds in Cyberspace: Measuring and Mapping the Social Structure of USENET". *Communities in Cyberspace: Perspectives on New Forms of Social Organization*. London, Routledge Press. (1999)
- Spender, D., and Stewart, F. (2002). *Embracing e-Learning in Australian Schools*. Brisbane: Commonwealth Bank.
- Thomsen, S. R. (1996) *@Work in Cyberspace: Exploring Practitioner Use of the PRForum*. *Public Relations Review*, 22 (2), 115-132.
- Topper, A. (2001). "Professional Growth". [Online] *LETSSNet, Michigan State University College of Education and Ameritech*. (Updated 1999) Retrieved on 26 November 2008 from <http://commtechlab.msu.edu/sites/letsnet/noframes/bigideas/b9/b9theor.html>
- Vygotsky, L.S. (1978). In M.Cole, V.John-Steiner, S.Scriber & E. Souberman (Eds), *Mind in society*. Cambridge, MA: Harvard University Press.
- Vygotsky, L.S. (1986). In A. Kozulin (Ed). *Thought and language*. Cambridge, Ma: The MIT Press.
- Weckert, J. and G. Fellows (1996). "Intellectual Property on the Internet: some technical and moral issues". [Conference] *AUUG96 & Asia Pacific World Wide Web*, Melbourne, Victoria, Australia, cohosted by Australian UNIX & Open Systems Users Group and Charles Sturt University. (Sep 1996)
- Wikipedia (2009). "Newsgroup spam." [online] *Wikipedia – the free Encyclopedia*. Available at ([http://en.wikipedia.org/wiki/Flaming\\_\(Internet\)](http://en.wikipedia.org/wiki/Flaming_(Internet))) Last up-dated 19 March 2009. Retrieved 20 March 2009
- Wikipedia (2009 b). "Flaming (Internet)." [online] *Wikipedia – the free Encyclopedia*. Available at ([http://en.wikipedia.org/wiki/Newsgroup\\_spam](http://en.wikipedia.org/wiki/Newsgroup_spam)) Last up-dated 15 March 2009. Retrieved 20 March 2009