

Athabasca University  Master of Arts - Integrated Studies

E-Tutoring in the 21st Century

HELEN W. GREEN

Integrated Studies Project

submitted to Dr. Terry Anderson

in partial fulfillment of the requirements for the degree of

Master of Arts – Integrated Studies

Athabasca, Alberta

August 2009

Acknowledgement

This study was developed and completed with the assistance and support of a number of people. I would like to acknowledge and thank my advisor Dr. Terry Anderson who provided direction, support and assistance throughout the process. To my friends and family who were an e-mail or telephone call away and with a special thanks to my husband Neal Viger, for his constant support and assistance throughout my graduate studies.

Table of Contents

<i>Acknowledgement</i>	2
<i>Abstract</i>	4
<i>Introduction</i>	5
<i>Tutoring</i>	6
<i>Private tutoring institutions</i>	8
<i>E-tutoring</i>	9
<i>Similarities between face-to-face tutoring and e-tutoring</i>	11
<i>Research findings related to tutoring and e-tutoring</i>	12
<i>E-Tutoring institutions using web conferencing platforms</i>	14
<i>Training for e-tutors</i>	17
<i>Best practices for e-tutoring</i>	20
<i>21st Century student</i>	21
<i>Synchronous and asynchronous learning</i>	22
<i>Synchronous learning</i>	23
<i>Web conferencing platforms</i>	25
<i>Open Source vs. Proprietary Web conferencing platforms</i>	29
<i>Costs of web conferencing platforms</i>	30
<i>Evaluation of web conferencing platforms</i>	30
<i>Method</i>	31
<i>Findings</i>	32
<i>Personal experience</i>	39
<i>Personal application of E-tutoring</i>	40
<i>Implementation plan for converting tutoring to an e-tutoring service</i>	41
<i>Conclusion</i>	42
<i>Appendixes</i>	49

Abstract

E-tutoring is an extended version of tutoring wherein, the pedagogical benefits of individualized teacher/learner relationship are brought online, thus affording access where both the tutor and learner can be anywhere in the world. This paper was written to provide a model and plan to solidify and expand an existing face-to-face tutoring service to an e-tutoring service for tutors and learners in the 21st century. Integral questions to be resolved were what web conferencing platform and tools would be needed to deliver this service and would e-tutoring have the potential to deliver same or better results as face-to-face tutoring.

To answer these questions, theories and the research literature on tutoring, e-tutoring, and their similarities was examined. Three e-tutoring institutions were also examined: Sylvan Online, Smarthinking, and Growing Stars, these cases served to demonstrate how commercial institutions are delivering e-tutoring to learners world-wide.

Particular attention was addressed towards the technical, cost issues and the features needed to deliver e-tutoring using a web conferencing platform. Finally two web conferencing platforms, Elluminate Live and Adobe Connect were evaluated using reports and studies done by a variety of experts and the author's own experience using the platforms.

The paper concludes that there is a valid educational and business case for adding an e-tutoring service to the tutoring service. E-tutoring has the potential to reach learners of any age, anywhere in the world, sharing and growing knowledge without boundaries and thereby enhancing learning and educational opportunity.

Introduction

Both the term tutor and tutoring have been defined in various ways. However Wood (2001) defines a tutor as one who “provides instruction and support that is contingent upon the learner’s (potentially changing) level of domain knowledge in contexts where the tutor is challenging them to master tasks that present manageable problems; problems whose mastery promises to enhance their domain knowledge” (p.282). The e-prefix adds the notion of technical and communication mediation between tutor and tutee. An e-tutor interacts directly with learners to support their learning process that is separated from the tutee in time and place for some or all of these interactions (Denis, Watland, Pirotte, & Verday, 2004). This mediation may be text, audio, video, or immersive--it may also be synchronous or asynchronous. Thus e-tutoring takes many forms depending on the technical tools, skills, and learning approaches of both tutor and tutee.

Tutoring is a time-honoured, research-based method of helping students succeed in their academic tasks. Tutoring is as old, at least, as Plato and Aristotle, as we know from their writings; they found tutoring a highly successful and engaging process. Today, tutoring has taken on more of a mass appeal, and the practices that make tutoring effective have been more scientifically studied and replicated. Boylan, Bliss, Conham, and Saxon in their findings from the National Study of Developmental Education concluded that tutoring has consistently been found to have a positive impact on retention, final grades in tutored courses, course completion, and graduation rates (Kruft, 2006).

Private tutoring is currently an \$8 billion industry; \$3 billion is accounted for by e-tutoring, and is growing significantly at a rate of 12% per year (Jones, 2007). Reasons for this growth include a greater emphasis on educational standards, (Gordon, Morgan, O’Malley, &

Ponticell, 2007), the combination of parents having less time with their children (Hughes, 1999), and entry into higher education and professional careers is more competitive (Davies, Quirke, & Aurini, 2002), thus creating demand for increasing amounts of formal and credentialed education.

Advances in information and communications technologies; both in hardware and software, and high speed Internet access, give rise to an opportunity to further develop e-tutoring services. As Friedman (2007) makes clear in his bestselling book, *The World is Flat*, students today are not competing with the student sitting next to them in class, or the rival school down the road. Today's students are competing in a global arena. E-tutoring provides students the capacity to source knowledge and help from around the world to meet their learning needs.

Tutoring

The benefits of tutoring arise from one-to-one interaction between a knowledgeable and skilled individual (the tutor) and a less knowledgeable and less skilled individual (the learner). According to Vygotsky, there are a set of common principles for pre-school to adult learners that govern tutoring (Wood & Wood, 1996). Tutors serve as a bridge between learners' existing knowledge and skills and the demands of the new task, and provide structures or scaffolds to support the learners' problem solving. Scaffolding within a Zone of Proximal Development (ZPD) refers to the gap between what a given child can achieve alone, their "potential development as determined by independent problem solving" and what they can achieve "through problem solving under adult guidance or in collaboration with more capable peers" (Wood & Wood, 1996, p.5).

Since its formulation, the idea of scaffolding within a ZPD has been developed, extended and criticized in different ways. These ideas are integral to later learning theories such as

“cognitive apprenticeships” (Collins, et al., 1989), “guided participation” (Rogoff, 1990) and “reciprocal teaching” (Brown & Campione, 1990). These, have also been used as theoretical basis for tutoring. Several general features of the aforementioned concepts are summarised below:

- Tutors serve to provide a bridge between a learner’s existing knowledge and skills and the demands of the new task. Left alone, a novice might not appreciate the relations between what the task demands and what they already know or can do that is relevant;
- By providing instructions and help in the context of the learner’s activity, tutors provide a structure to support the learner’s problem solving. Learners left alone, may lose sight of the overall goal of the activity;
- Although the learner is involved in what is initially, for them, ‘out of reach’ problem solving, guided participation ensures that they play an active role in learning and that they contribute to the successful solutions of problems;
- Effective guidance involves the transfer of responsibility from tutor to learner

(Wood, 2001).

Tutors also mentor and help learners stay motivated, provide words of encouragement, keep them on track and accountable for their learning. In addition tutors provide a personal and humanistic touch to learning. Learners are unique individuals and bring their uniqueness to the relationship, thus the tutor/learner dialogue varies from one learner to another.

Crucial to the success of tutoring is the status of the moment-to-moment activity of the learner, the timely provision of feedback and guidance from the tutor, and reduction in the

amount of the direct instruction as learners make progress. Now with a clearer description of tutoring we next turn to private institutions offering tutoring.

Private tutoring institutions

Tutoring may be enacted through informal connections organized by religious or charitable organization, supported by formal education institutions or operated as private businesses. Private tutoring businesses have undergone a massive transformation in North America evolving from small cottage industries into billion dollar corporate enterprises (Davies, Quirke, & Aurini, 2002). These organizations are also broadening their offerings. Traditionally tutoring centres offered “shadow education” where they closely follow the school curriculum, offering short-term homework help and test preparation. However, the recent trend has been to create franchised learning centres where centres create their own curricular and assessment tools, educational services, and aim to nurture long term durable skills. Examples of these popular learning centres include Sylvan Learning Centre, Kumon, and Kaplan.

The Sylvan Learning Corporation, founded in 1979, provides private tutoring for children in grades pre-K through 12. It has more than 1,100 centres located in neighbourhoods across the United States and Canada. In 1999 it had over 7,437 employees and was worth over \$338 million (Sylvan Company History, 2001). It was named the number one franchise by the American Association of Franchisees and Dealers ahead of more familiar names like McDonalds, Thrifty Car Rental, and Mail Boxes etc. (Davies, Quirke, & Aurini, 2002). Sylvan Online has recently entered into the world of e-tutoring.

Kumon, founded in 1958, teaches mathematics and language arts for school age children. It has more than 1,500 Centres in North America and centres in 44 countries. Its mission is to unlock

the potential in every child. In 2004 it had over 2,400 employees and was worth 63 billion yen (Kumon Company History, 2004).

Kaplan Tutoring, founded in 1938, provides after-school tutoring programs for children in kindergarten through 8th grade across the United States. Kaplan Tutoring programs help children catch up and get ahead in math, reading, and writing while building confidence. Its mission is to help individuals achieve their educational and career goals. Its net worth in 2008 was over \$ 2 billion dollars (Washington Post Shareholder website, 2008).

E-tutoring

Many labels have been affixed to the use of technology and learning/teaching that occurs over geographic distances, the most frequently used being “distance”, “online”, “network-based”, “web-based”, “e-learning”, and “e-tutoring”. Distance learning stresses the effect of distance between the teacher and the learner regardless of the technologies deployed for the purpose of teaching and learning. The implied feature of online learning is that the learner has unlimited and constant access to materials available on the course servers and, in some cases, to peers and instructors. Network-based language teaching (NBLT) is language teaching that involves the use of computers connected to one another in either local or global networks, web-based teaching is understood as using existing websites and other networked resources as sources of course materials, and Internet technologies as tools supporting teacher-learner, learner-learner, and learner-content communication. The common feature in all of the above-mentioned definitions is the fact that the Internet (and computers generally) are used extensively in the teaching and learning process.

An e-tutor is defined as someone who interacts directly with learners to support their learning process that is separated from the tutee in time and place for some or all of these direct interactions (Denis, Watland, Pirotte, & Verday, 2004).

E-tutoring is a form of e-learning using the advantages of information technology and the Internet. It is a modern way to access quality and value tutoring services anywhere anytime in the world. It provides private and personal coaching in the learner's home, without the student incurring costs or the inconvenience of physically going to a tutoring facility. Learners have an open access to tutors of his/her choice anywhere in the world.

E-tutoring services range from highly structured individualised support to occasional response to specific homework questions. In commercial "learning centres" e-services usually include: an initial assessment to determine specific academic deficiencies, e-tutoring sessions that target those deficiencies, ongoing assessment following e-tutoring sessions, and frequent reporting of tutee progress (Johnson & Chatta, 2006).

The roles of an e-tutor can be divided into four domains: Pedagogical--supporting the learning process itself by providing instruction, stimulating questions, examples, feedback, motivation, etc. to the learners (Teles, et al., 2001). Managerial--perform basic course administration, track student progress, and data. Social--establishes a friendly and comfortable environment. Technical- acquaints the students with the Information and Communication Technology (ICT) that is used for e-tutoring and provides technical support to the learner (McPhearson & Nunes, 2004).

The above-mentioned defines e-tutoring. The similarities to face-to-face tutoring will now be examined.

Similarities between face-to-face tutoring and e-tutoring

E-tutors need to have expertise in the field they are tutoring, have and practice educational skills, and be able to develop and use well designed learning goals, objectives, and activities in their lessons. Peter McLintock, e-learning director for Global Knowledge sees little difference between the two: on-line tutoring is not really different to classroom tutoring, it is a new medium, but the best instructors are still the best instructors (Shepherd, 2003). The Effective Online Tutoring Guidelines (2002) concurs that the core skills of a good tutor are unlikely to change with a different delivery method. The Guidelines include the following broad skills for e-tutoring:

- good organisation
- familiarity with the structure of the course
- subject expertise
- enthusiasm
- ability to deploy resources effectively
- good relationships with learners
- ability to communicate
- a flexible approach.

Breur, Chair of Economics and Business Education of the University of Cologne, writes that the tasks of an e-tutor are similar to a face-to-face tutor. They include: diagnosing a learner's needs, helping learners get started, explaining content, assessing progress, giving feedback, promoting activity, giving encouragement, trouble-shooting problems, preparing the learning environment and recording progress (Breur, 2003, p.21).

A lot of what works face-to-face: preparing for the class well in advance, making a class interactive, using illustrations, and explaining using an example, and giving meaningful homework, also work well online. Additional skills that e-tutors need are technological skills to use the Internet and computer programs and the ability to create a social presence at a distance. After an extensive literature review Sulcic and Sulcic (2007) concluded that the most important

skills for an online tutor are ICT literacy, communication skills, personal characteristics, and subject matter expertise.

Now that a definition for e-tutoring and its similarities to tutoring have been established the scientific research related to tutoring and e-tutoring is examined.

Research findings related to tutoring and e-tutoring

There is overwhelming research to support the benefits of one-on-one tutoring in improving students' grades, study skills, and confidence levels, specific results are listed in point form below. A meta-analysis of 65 independent evaluations of school tutoring programs (Kulik, Kulik & Cohen, 1982) shows that these programs have positive effects on the academic performance and attitudes of those who receive tutoring. Tutored students outperformed control students on examinations, and developed positive attitudes toward the subject matter covered in the tutorial programs. The meta-analysis also showed that tutoring programs had positive effects on the adults who served as tutors. Like the children helped, the tutors gained a better understanding of and developed more positive attitudes toward the subject matter covered in the tutorial program. Other studies have shown:

- Private tutoring can help students with learning disabilities to master subjects and study skills (Vadasy, Jenkins, & Pool, 2000).
- Private tutoring can help students who have performed poorly on yearly standardized tests (Robelen, 2002).
- Private tutoring can help academically and intellectually advanced students remain challenged--and, therefore, interested in their education--and, because it is customized,

one-to-one instruction, private tutoring can go at the accelerated pace necessary for such students (Charlton, Marolf, & Stanley, 2002).

- Private tutoring can help ensure that elementary school students have a firm grasp on academic basics when school systems may be introducing more complex ideas before the basics have been mastered as a result of mandatory end-of-year standardized testing (MacDonald, 2003).
- Private tutoring can help students prepare for and maximize scores on standardized college admissions tests, such as the SAT, GRE, LSAT, MCAT, TOEFL, and others (Matson, 2003).

These positive research findings on the benefits of tutoring have been one of the factors for the increase in demand for tutoring services. In Ontario the number of tutoring businesses has grown by 60% from 1998-2002 (Davies, Quirke, & Aurini, 2002).

There have been many studies done to establish the benefits of Internet based support learning; however, most of these studies are not specific to e-tutoring. In 2004, Cavanaugh, Gillian, Kromrey, Hess and Blomeyer conducted a meta-analysis of studies published since 1999 that compared the academic achievement of traditional school children with those who received online instruction at least 50% of the school day. Students who learned via the Internet performed as well or better than students in regular school programs. Kulik (2003) conducted a comprehensive synthesis of research published since 1990 that evaluated the instructional effectiveness of Internet technology for children. He concluded that, “instructional technology is growing increasingly effective in elementary and secondary school applications” (p. 61). Zhao (2003) conducted a meta-analysis of the effectiveness of Internet communication for second

language learning. The mean effect size of nine synthesised studies was 1.12, “indicating an overwhelmingly positive effect of technology applications on language learning” (p. 19).

Preliminary findings from another study exploring both the process of online writing instruction as well as student outcomes provide further evidence that online instruction does improve student grades and, most importantly, the quality of the student learning (Hewett, in press).

Preliminary research by Lotze (2002) indicates that online tutoring in mathematics can be effective in facilitating student learning. The established effectiveness of online support for learning has resulted in demand and expectations that academic goals can also be met through e-tutors (Denard, 2003).

Another area of research is the influence of media on learning. The study of the influence of media has been a permanent feature of educational research since pictures were recommended as a labour saving device in instruction (Clark, 1983). Most summaries and meta-analyses of media comparison studies suggest that media do not influence learning under any condition, only the content and personal interactions can influence achievement. Clark, (1983) a professor of Educational Psychology and Technology argues that media are “mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition” (p. 445).

The above mentioned scientific research findings support the new and emerging field of e-tutoring.

E-Tutoring institutions using web conferencing platforms

The e-tutoring businesses described in this section provide e-tutoring to school age children in all subject areas. I chose to include a business that offered its services in Canada, one

in the United States, and one that has its tutors based in India to show the range of services. They all use the features of video, audio, text chats, and whiteboards. Each business has an excellent demonstration of an online tutoring session on its' website: however, it was not possible to identify the commercial web conferencing platform used.

Sylvan Online www.sylvanonline.com

Sylvan Online advertises that its program and curriculum is the same as its in-person tutoring service. Trained and certified online teachers tutor students in real time using a hands-free headset connected to a computer. The student and tutor talk to each other as they write questions and answers on the same workspace displayed on both the student's and tutor's computer screens using a digital pencil and digital writing pad, similar to a mouse pad. Bavaria, Vice President of Sylvan Online says that parents and children are more pressed and stressed for time, juggling busy work schedules, after-school and summer activities, and travel, now, parents can ease their scheduling difficulties by having the unique option to bring Sylvan Learning Centre's expert tutoring home to their child. (Sylvan Learning Archives, 2005). An excellent Sylvan Online demonstration using Windows Media Player and a Sylvan Online class are at:

<https://learn.sylvanonline.com/login.aspx>

Smarthinking: www://smarthinking.com/

Smarthinking provides online tutoring in mathematics, the arts and sciences. Students can submit questions for a response within 24 hours, pre-schedule sessions, and view archives of past sessions. Smarthinkings' objectives are to engage and encourage students in active learning, as well as to enhance their motivation. E-tutors strive to help students develop successful learning

skills, rather than simply "giving answers" or "doing homework." Over 80% of its online tutors have a master degree or Ph.D. in their discipline, and an average of eight years of teaching experience. It has a management team and staff of over 500 professionals and educators. Tutors complete an extensive online training in effective teaching methods in an online environment, including student management, the Smarthinking technology, and course-specific pedagogy. Smarthinking also sells its technology platform to create private-labelled e-tutoring centres. There is an excellent demonstration of a Smarthinking tutorial for calculus using a whiteboard at <http://smarthinking.com/static/customerSupport/whiteboardPractice>

Growing Stars: www.growingstars.com

Growing Stars Inc. started in 2002 and provides one-on-one online tutoring services for children in grades 3-12. Its mission is to help each child excel academically. Growing Stars Inc. is headquartered in Fremont, California and operates a teaching centre in Kochi, India. There is a demonstration of their services at <http://www.growingstars.com/gettingstarted.html>

Included are some testimonials that demonstrate the satisfaction of students and parents that have used Growing Stars Inc. e-tutoring services:

"I just wanted to say Thank you for your great assistance on my paper. I got a 98% on the paper and had great comments from the professor. Part of that success was most definitely based on your help, and I appreciate it very much." - *Lance Decker, Student, UT Tyler/UT Telecampus*

"I am an instructor at Capella University and decided to try out your writing service to see the kind of feedback Smarthinking provides. I have to say that it was excellent. In fact, the e-structor, DougW., was professional, helpful, and posed thought-provoking questions. Please pass my

comments on to the appropriate people at the organization." - *Tony Pizur, PhD, Instructor, Capella University*

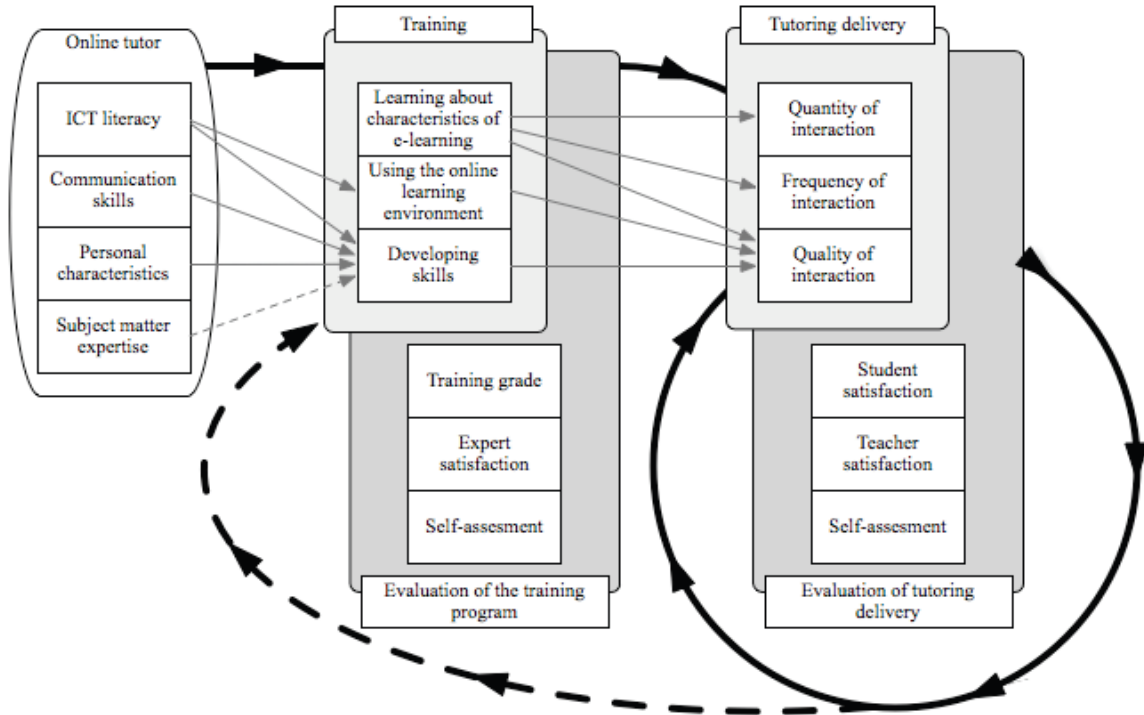
"I am pleased with Nia's progress in Math with Anjaly. She is doing excellent. Nia received a perfect score on her recent math test along with one grade of 95 and the other of 98. Now I want her to get help in English. Thank you GrowingStars for providing top notch service in the comfort of my own home." *Nasreen Watson, Parent.*

Training is an important part of e-tutoring as described in the next section.

Training for e-tutors

Initial and ongoing training, mentoring, and assessment of effectiveness are keys to the success of any tutoring program whether it is face-to-face or virtual. Sulcic and Sulcic (2007) developed the figure below to demonstrate a successful e-tutoring program. Training programs are designed to help the e-tutor understand the specifics of e-learning and become familiar and competent within an online learning environment (p. 208).

Figure 1. *Online Tutoring Model from Sulcic and Sulcic (2007)*



An Internet search revealed a variety of training opportunities for e-tutors; a large amount of the training time was spent with tutors practicing online communication in online learning environments with other tutors in training. Of particular interest was the following 30 hour course for Online Tutors offered by The Consultants-E, a leader in online and distance education (<http://www.theconsultants-e.com/index.asp>). The course is aimed at teachers, trainers, tutors, facilitators, lecturers, and mentors from any discipline and any level of education, who are interested in developing the skills necessary to become an effective e-moderator in online courses. The objectives of the course are to:

- learn to effectively use a VLE (Virtual Learning Environment);
- become familiar with the stages through which learners pass in online learning environments;

- acquire the necessary online tutoring skills for each of these stages;
- develop your own skills as an online tutor through collaborative group work;
- develop the skills necessary to effectively handle students' online work;
- learn to set up and implement a variety of online task types;
- explore the principles of online versus f2f (face-to-face) learning;
- reflect on the skills needed for working effectively with students online. This includes moderating skills, climate setting, support, etc.;
- create a final portfolio consisting of your own reflections, and a bank of activities and principles for effective online tutoring.

A number of larger certificate programs include:

- Certified e-Learning Professional (CeLP) www.elearningprofessional.com
- Certificate in Online Learning (COL) www.cipd.co.uk/training/col/
- Learning to Teach Online (LeTTOL) www.sheffcol.ac.uk/lettol/

In Europe they have developed and promoted a core curriculum for e-tutors in Vocational Education and Training with the overall aim to support teachers and trainers in their development of skills, knowledge, and understanding of the pedagogic aspects involved in e learning, and to provide opportunities for them to experience these aspects of e-learning first-hand, develop pedagogical competencies that will enable teachers and trainers to apply virtual learning processes in ways that are appropriate to their role and national/sectoral context.

Included is a useful “best practices” checklist for e-tutors to use before starting an e-tutoring class (Dhiman, 2009).

Best practices for e-tutoring

1. **Keep all your equipment ready and test it in advance:** Test once, twice, and as many times as you need all your devices: computer/ laptop, microphone, headphones, webcam. Try and use standard equipment to minimize the compatibility issues. If possible, test the devices with the students as well.
2. **Check your connection settings:** Keep at least 512 kbps or more connection and make sure you do not download, use Skype/ messengers, stream videos during the live online class.
3. **Processor Speed/ Memory:** Whiteboards and Online Virtual Classrooms are memory intensive applications.
4. **Always do a test:** Even if you are a seasoned pro, always conduct a test for students new to your classroom.
5. **Schedule a class in advance:** Always schedule a class in advance [one week at least], it is best to have the class at same day/ same time to set a rhythm and predictability to online learning for the student.
6. **Prepare a class in advance:** Attention spans on Internet are low. Have whiteboards ready with graphs and drawings as well as the files [pdf/ PowerPoint/ Word/ Excel] needed and check the links [YouTube/ Slideshare/ Scribd/ authorStream] to see that they work.
7. **Have a moderator:** If not familiar with technology or you have more than 10 students in a class, consider having a moderator who can transfer controls to the students [speaking, writing, streaming video] and answer any technical queries from the students.
8. **Have a holding slide:** Have a holding slide with class title, objectives and welcoming the students.
9. **Use Illustrations:** Computers and Internet open up opportunity to go visual and aural. Make use of graphs, diagrams, emoticons, images, video and audio.
10. **Anonymous Feedback/ Chat:** One of the advantage online classes provide to the learners is that they can communicate privately with the teacher
11. **Audio, video, and writing controls:** The more the people with audio, video and writing controls, the more chaotic the class can become. Limit the number of students with access to speaking in a class or writing on the whiteboard. This will allow others an opportunity to listen and wait, and if they have something to contribute, they can always type it in the chat area.
12. **Two hours is an epic online:** Try and keep a class under 2 hours.
13. **Engage students asynchronously as well:** Students should be able to take back class material/ notes [through content sharing] and class recordings at a minimum. This allows students to leverage online environment for their own learning benefit. If possible, also have tests at the end of one/ few classes to check if the students have been grasping the subject.
14. **Analyze student feedback:** Best practices in how to conduct an online class are being currently written and researched. The best guide is the students. Talk to them, gather feedback and analyze their behaviour.
15. **Handling Exigencies:** If a class cannot be conducted for whatever reason or one of the attendees is having some issues, try and extend the session, reschedule the session or ask the attendee to watch the recording later.

The profession of e-tutoring is a growing field both in e-tutoring services, training, and e-research, and best practices; this paper now examines the learner of the 21st century.

21st Century student

Today's students from Kindergarten through College represent the first generation of youth to grow up surrounded by technology. Oblinger (2003) describes the Net Generation as students who have grown up surrounded by computers, videogames, digital music players, cell phones, and other items of the digital age. She argues that the student of today is used to information sharing, multi-tasking, is a multi media learner, and flexible learner, and likes to learn anywhere, anytime. A recent example is of an 11 year old who gave teachers "a kid's eye view of the innovative classroom." The presentation was on and recorded through a web conferencing platform called Elluminate Live. Using examples, anecdotes, and engaging activities, she humorously and honestly shared strategies educators can use in their classrooms to get kids excited and passionate about learning (Svitak, 2009). An Educause survey reports that students want faculty members to use information technology to communicate their knowledge in a better way (Kvavis & Caruso, 2005).

Some alternate studies about the Net Generation have revealed that caution should be exercised when making assumptions about what students or staff already know or prefer in relation to technology, and a one-size-fits-all approach to the implementation of learning technologies is unlikely to succeed and should be avoided. Studies from Australia and the UK starting in 2006 indicate that young people tend to be high users of established technologies, but they don't necessarily want or expect to use these technologies to support some activities, including learning in formal contexts. Educating the Net Generation Handbook (2009) report these key findings:

1. The rhetoric that university students are Digital Natives and university staff are Digital Immigrants is not supported.
2. There is great diversity in students' and staff experiences with technology, and their preferences for the use of technology in higher education.
3. Emerging technologies afford a range of learning activities that can improve student learning processes, outcomes, and assessment practices.
4. Managing and aligning pedagogical, technical and administrative issues is a necessary condition of success when using emerging technologies for learning.
5. Innovation with learning technologies typically requires the development of new learning and teaching and technology-based skills, which is effortful for both students and staff.
6. The use of emerging technologies for learning and teaching can challenge current university policies in learning and teaching and IT.

We have looked at the tutor, the learner, and some of their skills. Next two types of e-learning: synchronous and asynchronous are described. In combination these models are used to create the tutoring context.

Synchronous and asynchronous learning

Asynchronous learning refers to programs that are independent of time, anyone can access these programs any time and as many times as desired (Rosenburg, 2001). There are no “live” components and in most cases nothing has to be scheduled. Programs based on this type of learning have been around for decades, as traditional correspondence courses and, more recently, as pre-recorded audio and video classes. Both of these examples rely on materials that are delivered directly to students and are limited in the amount and quality of interaction. The popularity of the Internet and increasing bandwidth in access networks has brought new life into asynchronous learning. Notably, computer conferencing allows for interaction between and among students and teachers, through text based interaction. This mode of distance delivery allows for engagement and rich and reflective discussion, without confining participants to engagement at particular times. Web-based courses have advantages over their asynchronous distance learning predecessors; course material are delivered quickly, at low cost and can easily be edited on the web, one-to-one communication is improved via e-mail, web forums support

one to many and many to many interactions, and multimedia content can illustrate important concepts. Students also have access to a multitude of additional resources using links to other web-sites, posted journal articles, simulations, and other content often referred to as learning objects (McGreal, 2004). Asynchronous tools are often bundled into educational suites of tools, such as portals, platforms, and dedicated educational systems, i.e., Learning Management Systems (LMS), and Content/Class Management Systems. (CMS).

Synchronous learning

Synchronous distance learning is time dependent and communication takes place in real time; however, the teacher and learners are in different places (Rosenburg, 2001). It has many similarities to face-to-face instruction. For example, both live instruction and synchronous classrooms allow for immediate feedback, interaction with the instructor and guided exercises to motivate and increase student learning. Synchronous distance learning may include multimedia components such as group chats, slide presentations, simulations, video conferencing, and immersive technologies.

Text chat is a form of synchronous communication where participants type messages to each other. Text chat does not need much bandwidth, making it an easy form of synchronous communication to establish from a technological point of view. It can be an ideal environment for intermediate and advanced students to develop skills of spontaneous communication in a foreign language. Text chat is one of the media frequently used by learners in their spare time; therefore capturing it in an educational context can be highly motivational.

Videoconferencing is a two-way interactive platform with video and audio capabilities. When used in conjunction with tools like a whiteboard it is a close approximation to a traditional classroom or group seminar. Videoconferencing can be categorized into desktop and

studio-based conferencing. Studio-based videoconferencing can be supported by the Internet or an Intranet and often involves more complicated set ups and technology, a multipoint control unit, group based audio and video, and a studio or dedicated room. In an educational setting, videoconferencing is often designed to conduct lectures among distributed campuses or institutions. Desktop video conferencing offers similar feature, though at lower cost and associated lower quality. Typically, desktop videoconferencing requires each participant to supply their own individual web camera, headset, and microphone, and participants engage in the conference from their own home or office desktop.

Immersive Worlds are online three-dimensional (3D) virtual worlds in a networked desktop virtual reality in which users move and interact as "avatars" in simulated 3D spaces. Most programs include a text-based chat tool, some include an audio chat. Within the 3D environment users are represented as individual avatars, they interact with other avatars and the environment. Several of the popular 3D virtual worlds include Active Worlds, Second Life, and Dark Star.

A web conference platform is a set of communications tools that supports multiple modes of synchronous communication and learning activities.

Traditional face-to-face tutoring (synchronous learning) takes place in a room with a tutor, the learner, and the necessary tools for learning: a chalkboard, paper, text books, etc. E-tutoring takes place with a tutor and learner that are globally dispersed and connected via a web conferencing platform. A web conferencing platform includes the following:

- Real-time voice and visual contact between all participants;
- Shared whiteboard;

- Integrated area for the projection of slides or other visuals;
- Capacity for text-based interaction, including side conversations or note-passing;
- Means for learners to indicate that they have questions or are confused; and
- Tools for assessing current moods, opinions, and comprehension as well as for soliciting questions or feedback, and the ability to gauge virtual body language, or a sense of how engaged learners are in the activity at hand (Finkelstein, 2006, p.58).

E-tutoring using a web conferencing platform has many similarities to a physical classroom. For example, both face-to-face instruction and live virtual classrooms can provide immediate feedback, interaction with learners who have similar interests, and guided exercises to motivate and increase student learning. The online synchronous classroom provides learners with more authentic and engaging learning activities enabling higher levels of learning compared to purely synchronous modes of self-paced learning (Hastie, Chen, & Kuo, 2007).

Karrer (2008), from the eLearning Technology Journal feels that web conferencing systems will become as common (and free) as the web browsers of today.

Web conferencing platforms and their features to support e-tutoring will now be examined in detail.

Web conferencing platforms

During a web conference, each individual connects their computer to a common server via the Internet. The web conference platforms can be either a downloaded application on each of the individual's computers or can run as a browser-based application. The communication is synchronous, meaning that the two (or more) individuals communicate by a variety of means-text, audio, and video in real time.

There is no official reference or guideline defining the basic features needed in a web conference platform; however, the mini guide to Web Conferencing Tools and Technology (Kolabora, 2007) includes the following components:

Voice over Internet Protocol (VoIP): VoIP converts a person's analog voice signals into digital data packets and supports real-time, two-way transmission of conversations. This is of utmost importance in e-tutoring as, without a smooth transmittal of audio one loses the communication between the learner and tutor. There are two types of VoIP, simplex refers to transmission in only one direction at a time, duplex refers to a simultaneous two way communication, and two people can talk and interrupt one another. In order for the more fully featured duplex mode, all participants must wear ear phones to prevent feedback from distorting and disrupting conversations.

Live or streaming video: Video supports the transmission and reception of video presentations captured by a full motion webcam, digital video camera, or multi-media file. In addition to using a web camera for live streaming, a camera can be used for many useful exercises: to create and record both still and moving images, to add backgrounds or to change and distort images, students can dress up, disguise themselves and create images to build into picture stories, record stories for students to watch, and get students to record their own stories to share. Telling a story to a web camera on a computer can be much less intimidating than facing a live audience, students can also watch and listen to themselves telling a story so that they can evaluate their own performance and record and re-record to improve their performance.

Text chat: Text chat allows the transmission of text based question and answers, and is limited to the people connected to the tutoring session. Text chat may be public (open to all learners) or

private (between two learners). This function is of value in particular for teaching language or grammar where learners might say a sentence incorrectly and the teacher will write it correctly in the text chat, or in a situation where the learner does not know how to spell a word, or pronounce it, the tutor can type it out phonetically. Some studies have shown that in written forms of computer-mediated communication (CMC), or so called text chat; students produce a greater quantity of discourse than in an oral classroom (Kern, 1995). Pellettieri (2000) claims that written learner chat has the same potential for developing grammatical competence through negotiation of meaning (comprehensible input and modified output) as oral interaction does. Emoticons are a simple value added feature that can add humour and other emotional enhancements to any text message.

Whiteboard: A whiteboard is the equivalent of a chalkboard and much more. An electronic whiteboard with its many features allows both the e-tutor and learner to highlight and annotate content, and the information can be saved for future reference. In math numbers and calculations, spreadsheets, graphs and other materials can be displayed and used; it has the capacity to project slide shows and web tours. Art classes can use colours, shapes, and designs on a whiteboard. Whiteboards are also great for brainstorming exercises, word associations as well as other vocabulary-building activities (Hampel & Hauck, 2004).

Recordings: From the learners perspective a recorded session of the subject matter can be reviewed at his/her computer at a later date or downloaded to a portable device. The e-tutor can also use it to review his or her method of delivery and interaction style and to keep track of what is being taught. It might also be reviewed by the parents of a younger learner or by the organization offering the tutoring services as a means of evaluation of the services.

Polls and surveys allow the e-tutor to conduct questions with multiple choice answers directed to the learner. This is a good feature for tests, and quizzes to verify the learner understands the content. There are a wide range of tools to make quizzes colourful and attractive to the learner.

Access to a shared web browser is another important feature for e-tutoring. It allows both the e-tutor and learner to access the Internet. The World Wide Web (WWW) is a virtual library of information that can be accessed by any user around the clock. These include dictionaries and encyclopaedias, links for teachers, chat-rooms, pronunciation tutors, grammar and vocabulary quizzes, games and puzzles, literary extracts, etc. Some of the most important newspapers and magazines in the world are available on-line and the same is the case with radio and TV channels. Students can be encouraged to conduct meaningful tasks and solve problems in an environment that reflects their own personal interests.

File, screen or application sharing is a feature where participants can view anything the e-tutor or the learner has on their computer screen. These could include slide show presentations, assignments, electronic quizzes, web safaris, pictures, simulations, etc. Table 1 represents some of the web conferencing products currently available.

Table 1 *Current Web Conferencing Systems*

Product	Website
Acrobat Connect Professional (Formerly Breeze)	http://www.adobe.com/products/acrobatconnectpro/
Saba Centra	http://www.saba.com/products/centra/
Illuminate Live	www.illuminate.com
Wimba Classroom	www.horizonwimba.com
AT&T Connect	www.interwise.com
LearnLinc	http://www.ilinc.com/products/suite/learnlinc
Microsoft Live Meeting	http://office.microsoft.com/en-us/livemeeting/
Raindance Meeting Edition	www.raindance.com

Webex	www.webx.com
Web-4M	www.jdhtech.com

Open Source vs. Proprietary Web conferencing platforms

There are two types of web conferencing platforms available at the present time: open source or proprietary. Open source web conference platforms include the code with the software, and modification or customization of the program is actively encouraged. Successful open source platforms have development communities that support further development of the platform. Software developers who support the open source concept believe that by allowing anyone who is interested to modify the source code, the application will become more useful and error-free over the long term. Dimdim is an example of an open source web conferencing platform. Its mission is to enable web collaboration for everyone. “We believe that we can improve the world by providing easy, open and affordable collaboration software that anyone can use” (Dimdim History, 2008). Dimdim developers listen closely to the needs of the open source community and actively improve its product based on user feedback. Dimdim’s founders see an opportunity to make the world a smaller place by creating a simple, free service that lets everyone everywhere communicate using rich media in real time.

Proprietary web conferencing platforms software comes in a ready-to-run program or are hosted on the owners systems, and online classrooms, or meeting spaces are booked by user. The program code that the developer creates is protected and concealed making it impossible to modify or even to see how the developer created the software. Most commercial software manufacturers see this as an advantage that keeps other companies from copying their code and using it in a competing product. It also gives them control over the quality and features found in

a particular product. Examples of popular proprietary web conferencing platforms include Adobe Connect, and Elluminate Live.

Costs of web conferencing platforms

Most of today's web conferencing platforms are offered via the software-as-a-service model. Services are offered on a per-minute basis or a subscription model where schools pay for unlimited use by the month or by the year. Very often these subscription models are based on the number of "seats," or number of meeting participants. For many schools the advantage of using a hosted-based Web conferencing platform is that it does not require any up-front capital investment. Many vendors are also offering free use of their services for limited number of seats such as Elluminate Vroom and Adobe Connect Now. Web conferencing platforms offer a variety of user fee paying packages depending on the seats needed and tools required. For example, ElluminateVOffice with five seats cost \$499 US annually, 10 seats cost \$999 US annually, 20 seats cost \$1,920 US annually.

For this paper two web conferencing platforms were analysed: Adobe Connect Now and Elluminate Vroom, they were both chosen for their popularity in academic environments, cost, pedagogical features, and user friendliness (see Appendix A).

Evaluation of web conferencing platforms

Adobe Connect Now (Version 7.00) <http://www.adobe.com/acom/connectnow/>

Adobe Connect Now is a web collaboration tool that provides a classroom environment for sharing presentations, images, and desktop applications for up to three users free of charge. For use in one-to-one tutoring it has all the eight basic features of a web conference platform described earlier. Tutoring sessions can be recorded; however, one is unable to watch recorded sessions on any media device other than a computer because of the formatting of the saved

recording. It is a proprietary program. There is an excellent nine minute Adobe Connect Pro training session on Youtube. <http://www.youtube.com/watch?v=2syFXr6pRZ8>.

Elluminate vRoom: www.illuminate.com/vroom

Elluminate vRoom provides real-time online learning and collaboration and works both in Mac and Windows platforms for up to three participants free of charge. For use in one-to-one e-tutoring it has seven of the basic features of a web conferencing platform, it does not include the recording feature. It is a proprietary program. There is a very good introduction to using Elluminate Live on Youtube. <http://www.youtube.com/watch?v=AbZohAS1hos>.

Method

For the purpose of this paper, reports and studies on the two most popular proprietary web conferencing systems Elluminate Live and Adobe Connect Pro that have been done by a variety of groups in the past five years were examined. They include:

A Tale of two Systems: Elluminate Live vs. Macromedia Breeze (Schullo, 2006);

Conducting a Trial of Web Conferencing Software (Reushle & Loch, 2008);

Interwise leads field of 11 vendors in global test of voice/video over IP services (Perey, 2005);

Magic Quadrant for Web Conferencing (Mann, 2007);

Screen Sharing Performance of Web Conferencing Services (Peterson, 2007);

Selecting a Virtual Classroom System: Elluminate Live vs. Macromedia Breeze (Adobe Acrobat Connect Professional), (Schullo & Hibelink, 2007);

Skype, Elluminate, Adobe Connect, and iVisit: A Comparison of Web-Based Video Conferencing Systems for Learning and Teaching (Karabulut & Correia, 2008);

Top 10 Web Conferencing Vendors (Business Software, 2009); and

Web Conferencing Tools and Technology: A Mini-Guide (Kolabora, 2007).

Findings

In Perey's study (2005) Elluminate Live received an overall rating of 4.2 with positive comments about the cross-platform delivery and support. Negative comments included Elluminate Live's complex initial download and the "push-to-talk" interface. Adobe Connect obtained an overall rating of 3.9. Advantages included the availability of templates and the use of Flash. Challenges included the quality of the Voice over IP audio. Eleven web conferencing products were evaluated on their features and functionality (50%), security/control (25%), administration/management (15%), and set up/installation (10%).

In another report Elluminate Live received an A- rating with special mention of its cross-platform compatibility and universal accessibility. Limitations included the single-duplex audio and lack of search features in archives. Adobe Connect earned a B+ for its flexible management interface and ability to accommodate diverse session content. The platforms were rated on features related to pre-Meeting (initial setup, meeting management, client installation, platform support); In-Meeting (user interface, application sharing, image quality, performance, and streaming media); Post-Meeting (playback, recording, reporting); and Price (Cogburn & Kurup, 2006).

A study at the University of South Western Australia in 2006 used Elluminate Live! as its' preferred choice of web conferencing software because of its cross platform functionality, its handling of low (dial up) as well as broad band Internet speeds and because it offered all that other commercial tools offer plus more features. These additional features include quick and good quality writing on the shared whiteboard with input devices of diverse levels of resolution (touchpad to tablet PD stylus), the ability to point out sections of the whiteboard to everyone by

everyone using a visible pointer, web tours, a shared graphing calculator and the ability to share anyone's screen (Reushle & Loch, 2008).

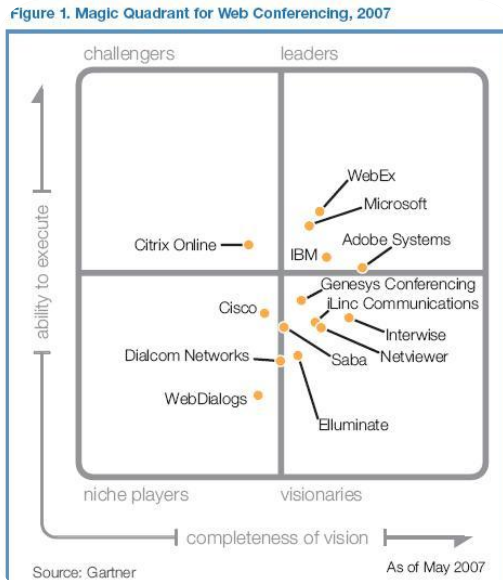
Adobe Connect ranked as a "Leader" and Elluminate Live ranked as a "Strong Performer" in another evaluation of six web conference platforms. To be included in this review each of the vendors' web conferencing platforms earned revenues in excess of ten million dollars and served at least 200 active customers. The characteristics and features assessed included architecture, connectivity, interaction, management, integration, and product strategy (Schullo & Hibelink, 2007).

Adobe Connect Pro was chosen as one of the top 10 web conferencing vendors by Business Software.com (2009). It reports that companies chose its' web conferencing platform because it is intuitive, there is no download, instant access and a rich interface keeps participants attention.

The Gartner Magic Quadrant for Web Conferencing 2007 places its top web conferencing platform in four groups: Leaders, Challengers, Visionaries, and Niche players. The following criteria were used to determine the platforms to include:

- Vendor must market the web conferencing product on a stand alone basis;
- Vendor must have at least 7.5 million in annual revenue from web conferencing product sales;
- Sales and marketing efforts of the product are not limited primarily to a particular vertical industry; and
- Vendor must develop and market the primary web conferencing product.

Figure 2 Magic Quadrant for Web Conferencing, 2007



Adobe Connect placed in the Leaders quadrant having achieved significant market share while demonstrating an ability to respond to customers' needs. Leaders have robust, scalable products with a wide range of features, a large installed base, acceptable financial performance, and good distribution. Leaders do well today and are prepared for the future.

Adobe's strengths are:

- It offers a strong performance and a wide range of features, including personal meeting rooms, a highly configurable user interface, and excellent video and VoIP support.
- Whiteboards displays are full resizable.

Its' weakness are that the personal meeting rooms lack library functions.

Elluminate Live placed in the Visionary quadrant. It has an important, unique or well-developed technique capability, and provides key elements of innovation that illustrate the future of the market. However, it had not yet developed sales and support capabilities to address or influence the complete market. Elluminate Live strengths are:

- Offers a free version for up to three participants under the vRoom brand.
- Supports a variety of clients (Windows, Macintosh, Linus, and Solaris).
- Extensive facilities for e-learning, including testing facilities and integration with several course management systems.

Downfalls include that it is primarily aimed at e-learning use and it relies on VoIP for meeting audio requirements. It is considered one of the smaller vendors in this Magic Quadrant.

The above mentioned studies focussed on the business and technical perspectives of Elluminate Live and Adobe Professional Connect. The next report compared the pedagogical features as the initial step in Elluminate Live and Adobe Professional Connect. The pedagogical evaluation included interviews and focus groups with faculty members and students, the decision-making process and experiences at other universities and the observation of several online course sessions (live or in archived format).

At an initial glance it appears that Adobe Connect and Elluminate Live have very similar features (see Table 2). However differences occurred when the systems were used in actual teaching situations. During observation of the class sessions four questions emerged:

- 1) How easy is the system to use? (Usability)

- 2) How well did the system meet the students' and instructors' needs technically?
(Technical needs for instruction)
- 3) How did the system help instructors and students meet the education's goals they wanted/needed to accomplish in the live sessions? (Instructional needs)
- 4) How would the system integrate into an existing infrastructure? (Compatibility).

Table 2 *Comparison Adobe Connect (was Macromedia Breeze V.5 and Elluminate Live V.6 –Features)*

Y = The product has this feature.		
N = This feature is not available in this product.		
Desired Features & Functionality	Systems Considered	
	Macromedia Breeze V 5	Elluminate Live V 6.5
Communication Channels		
Voice Chat (VOIP)	Y	Y
Text Chat	Y	Y
Video (two-way)	Y	Y
Content Presentation and Interaction		
Guided Web Browsing	Y	Y
Interactive Whiteboard	Y	Y
PowerPoint Presentation	Y	Y
Polling and Quizzing	Y	Y
Multimedia Presentation (i.e. Flash)	Y	Y
Application Sharing	Y	Y
Hand Raising/Simple Feedback	Y	Y
Logistics		
Breakout Rooms	N	Y
Record and Playback (voice, text, and screen)	Y	Y
Password Secured	Y	Y
Plugins Required	Breeze	Java
Cross Platform (Windows and Mac)	Windows/Mac	Windows/Mac/Linux

Results from use in the classroom included the following:

- Breakout rooms are easier to use in Elluminate Live than in Adobe Connect.

- Elluminate Live user interface mirrors a typical Windows environment using similar toolbars and icons.
- Adobe Connect Live interface allows the user to make more changes to the interface itself. The use of “pods” in Adobe Connect allows instructors and students to modify the screen based on the interaction taking place.
- Adobe Connect allows for multiple video feeds at one time where as Elluminate Live has one video feed.
- Adobe Connect also had a better visual appeal with higher resolution slides and a very professional look.
- Elluminate Live has a simple interface with an emoticon panel and hand raising capabilities easily accessible and recognizable. The same tools are in Adobe Connect: however, they seemed more difficult to access.

Table 3 summarizes the pros and cons for Adobe Connect V.5 and Elluminate Live V 6.5 based on usability, technical, and instructional needs and compatability.

Table 3 Comparison Checklists for Virtual Classroom Systems- Pros and Cons

<i>Product</i>		Macromedia Breeze V 5	Elluminate Live V 6.5
<i>Usability</i>	Pros	Intuitive for Mac users Professional looking interface Pod templates provide quick options PowerPoint presentations can be made JAWS friendly for ADA compliance	Familiar to Windows users Simple interface with short learning curve Visible “hand raising” and emoticons for quick feedback Keyboard access for all menus and dialog boxes plus closed captioning capable for ADA compliance

	Cons	Iconic feedback uses menu system with unclear graphics Complicated interface can lead to steep learning curve	Uploaded slides are converted to graphics with lower resolution
<i>Technical Needs</i>	Pros	Multiple two-way video feeds possible Good resolution of uploaded slides Full duplex audio allows more than one person to speak at a time Flash based – limited wait time	Functions well at low bandwidth Reconnects automatically if Internet connection is lost during session Caches audio if connection is slow or lost
	Cons	Tendency for system to lose audio capabilities – no cache if connection is lost	Initial software download required Administrative interface is cumbersome “On the fly” PowerPoint slide resolution is not clear enough for fine detail such as numbers in tables
<i>Instructional Needs</i>	Pros	Social presence more easily achieved through use of multiple video windows Wide variety of options based on pod infrastructure	Breakout rooms for group work Instructor control of all student features Visible, easy to use “hand raising” and emoticons for quick feedback Polling can be done “on the fly”
	Cons	Limited instructor control of what students do Polling requires preplanning No breakout rooms	Use of video windows limited
<i>Compatibility</i>	Pros	Supports both PC and Mac Uses plug-ins that are probably already loaded on most computers.	Supports both PC and Mac Administrative back-end runs on multiple platforms including Unix

	Cons	Does not seem to work as well in a windows environment as a Mac environment	USB microphones are sometimes difficult to setup on PC
--	-------------	---	--

Web conferencing today often includes the sharing of content rich material via screen sharing. To be successful, screen sharing performance should include minimal latency (time delay), maximum smoothness, and true fidelity (accuracy to the source). It should also be done efficiently to minimize the bandwidth required and the impact on the network. Adobe Connect Professional, with Turbo Screen Sharing capabilities outperforms the industry average on all of these metrics and delivers a superior screen sharing experience (Petersen, 2007).

Personal experience

I found that Elluminate vRoom used similar tool bars and icons to Windows. It was easy to send an invitation; however, software had to be downloaded to join a session. Invitations can only be sent one time; therefore, one needs to be careful about who s/he wants to invite as additional students cannot be added later. The interface of Elluminate has a hand raising feature that flashes when someone wants to say something; however, the interface looks busy because learners can write in the chat area without raising hands. The application sharing and whiteboard are effective; however, the teacher needs to give permission every time students want to use these features. The audio and the video are good, but only one person can use video at a time. Also, the tutor needs to enable this feature so that students can use it. I do not like having to press the talk button feature with Elluminate Vroom.

Adobe Connect was more intuitive, using “pods” and allowed modification of the screen based on the interaction taking place. It was also easier to navigate from one feature to another. I

like the fact that my URL never changes, there it was easy for users to remember. I also like that there were no downloads. Adobe Support is available in English, French, German, and Japanese.

In conclusion both web conferencing platforms are suitable for e-tutoring and can be used free of charge for one on one tutoring. After researching numerous web conferencing platforms, trying the above mentioned in detail, and two years of teaching English as a second language online using Skype the author's choice for e-tutoring is Adobe Connect. It has simpler processes, allows both learners and tutors to contribute to the learning, and intuitively seems easier to use.

The author's personal interest in e-tutoring is now described.

Personal application of E-tutoring

Study Abroad Canada (SAC) teaches English as a Second Language (ESL) and has been in business delivering this service on Prince Edward Island for over 14 years. Study Abroad Canada Inc. is operated by three partners with significant experience in the marketing, servicing, and education for non-English speaking students. The author of this paper is one of the partners. Collectively they have over 40 years of experience working in this market. With over 14 years in business, the management team understands the ESL marketplace, has established relationships in foreign, federal, and provincial target markets, and is proactive in adapting their business to take advantage of new technologies and learning efficiencies.

In 2006, Tutors on Demand (TOD), was created as a value added service to Study Abroad Canada. It specializes in face-to-face one-on-one tutoring to help school age children with school content, and new Canadians with English as a Second Language (ESL) classes in Charlottetown, Prince Edward Island. Classes are 50, 75 and 90 minutes in length. TOD uses the classroom space of its parent company Study Abroad Canada. TOD also has a government

contract to provide after school ESL tutoring to new immigrants in the public school system (2007 & 2008).

Today, Tutors on Demand is transitioning its business to become more competitive in the \$2 trillion global tutoring market. By tutoring online, TOD can increase margins and expand market reach in Prince Edward Island and at a later date to expand in other provinces.

There are two delivery options that TOD Online will be pursuing as they enter the market; these include: customized tutorials as required by the student and small group tutoring. TOD Online will manage this growth prudently by leveraging expertise of the principals to establish the service, in addition to their daily duties. Additional resources will be added according to a predictable plan and in conjunction with market demands. By installing an infrastructure which is scalable, building business through strategic development activities and hiring resources when business dictates, TOD Online will tightly manage growth.

A plan of implementation is described to convert the face-to-face tutoring service to an e-tutoring service.

Implementation plan for converting tutoring to an e-tutoring service

The first step of the implementation plan will be to train tutors in the specifics of e-tutoring and become familiar with an online learning environment. The e-tutors will enrol in one of the aforementioned e-tutoring courses. Second, the technology support staff will work with the Adobe Connect training department to familiarize him/herself with the platform and technological requirements of the web conferencing platform for creating an e-tutoring business. The third step involves the e-tutors becoming familiar with the Adobe Connect web conference platform. Each e-tutor will practice Adobe Connect with other e-tutors

practicing online communication and developing their skills. Each e-tutor will conduct several e-tutoring classes with volunteer learners, and evaluate the e-tutoring delivery. The evaluation will include student satisfaction, teacher satisfaction, and the quantity and quality of the tutoring. The supervisor of the project, the e-tutors and technical support will develop a training content and guidance manual for new tutees. Finally a change management plan will be implemented to educate people on the worth of e-tutoring. All of these steps will help convert a tutoring service to a vibrant e-tutoring service.

Conclusion

The tutoring industry today is in a constant state of renewal, expanding and changing in response to an increasingly diverse market. E-tutoring is part of this expansion; it can take on many forms depending on the technical tools, skills, and learning approaches of both the tutor and the tutee.

Synchronous learning using a web conferencing platform is one of these forms. It is a powerful tool that can be used to connect learners located across the globe enabling interactive and collaborative activity that facilitates learning. I believe there is a valid educational and business case for converting a traditional face-to-face tutoring service to a vibrant e-tutoring service using a web conferencing platform as its medium.

Key to its conversion is choosing the appropriate web conference platform. Questions to consider include: Who is the clientele? What is their current knowledge and competency with the use of technology? What are the user's expectations and plans for using the web conferencing platform? How easy are the systems to use? How much control does the tutor have and how does the system fit into the existing tutoring infrastructure? Continual evaluation of the platform, e-

tutor and administrator training, student and staff support, annual maintenance costs will also be key. A study of a web conferencing platform using Adobe Connect concluded that it is important to understand the capabilities of the tool in order to better utilize it for educational purposes, be transparent and straightforward about the problems and barriers faced (e.g., technology failure), accept frustrations and disappointments when using technology, and push technology to the limit by leveraging their limitations and expanding their capabilities (Correia, Baran, & Yusop, 2007).

The changing needs of society, the education system, information and communication technology, and learners will require e-tutoring services to always be on its toes to keep a clear and imaginative view of the future learning landscape.

References

- Ascent Strategy Group, Prince Edward Island Schools for Tomorrow. (2008). *Prince Edward Island Schools for Tomorrow: Building and sustaining high quality education programs*. Retrieved October 18, 2008, from http://www.edu.pe.ca/esd/pdf/final_enrollment_study_080828.pdf
- Benjamin, S.B. (1984). The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher*, 13(6), 4-16. Retrieved June 3, 2009, from http://edr.sagepub.com/cgi/pdf_extract/13/6/4
- Berge, Z.L. (1995). *The role of the online instructor/facilitator*. Retrieved Feb 2, 2009, from http://www.emoderators.com/moderators/teach_online.html
- Brown, A.L. & Campione, J.C. (1990) *Communities of learning and thinking, or a context by any other name*, in: D. Kuhn (Ed.) *Developmental Perspectives on Teaching and Learning Thinking Skills*. Contributions to Human Development Series 108-126.
- Breur, J. (2009). *The e-tutoring case study: A concept for tutor training with ILIAS*. Paper presented at the meeting of the Second International ILIAS Conference, Cologne, Germany. Retrieved April 2, 2009, from <http://www.ilias.de/conference/2003/pdf/22-BREUER.pdf>
- Business Software. (2009). *Top 10 web conferencing vendors*. Retrieved date, 2009, from <http://www.business-software.com/crm-reports/web-conferencing.php>
- Cavanaugh, G., Gillian, K. J., Kromrey, J., Hess, M., Bloymeyer, R., (2004). *The effects of Distance Education on K-12 on student outcomes: A meta analysis*. Retrieved April 15, 2009, from http://iit.bloomu.edu/spring2006_ebook_files/ebook_spring2006.pdf#page=26
- Clark, R.E. (1983). Reconsidering research on learning from media. *Review of Educational Research*, 53(4), 445-459. Retrieved January 22, 2009, from <http://www.jstor.org/stable/1170217>
- Canadian News Network (CNN). (2008). *CNN report on growing stars*. Retrieved October 2, 2008, from www.growingstars.com
- Cogburn, D. L., & Kurup, D. (2006). *TechU: The world is our campus*. Network Computing Retrieved July 30, 2009, from <http://www.networkcomputing.com/showArticle.jhtml?articleID=184428959&queryText=The+World+is+our+campus>

- Collins, A., Brown, J.S., & Newman S. (1989) *Cognitive apprenticeship: teaching the crafts of reading, writing and mathematics*, in: L. B. Resnick (Ed.) *Knowing, Learning and Instruction: Essays in Honor of Robert Glaser*, 453-494, (Hillsdale, NJ, Erlbaum).
- Davies, S., Quirke, L., & Aurini, J. (2002). New markets for private education in Canada. *Education Canada Vol. 42, No.3.* Retrieved June 13, 2009, from <http://www.proquest.com>
- Denis, B., Watland, P., Pirotte, S., & Verday, N. (2004). Roles and Competencies of the E-tutor. *Networked Learning Conference*. Retrieved May 4, 2009, from http://www.networkedlearningconference.org.uk/past/nlc2004/proceedings/symposia/symposium6/denis_et_al.htm
- Dede, C., Whitehouse P., & Brown-L'Bahy, T. (2002). Designing and studying learning experiences that use multiple interactive media to bridge distance and time. In C.Vrasidas & G.V. Glass (Eds.), *Current perspectives on applied information technologies: Distance education and distributed learning* (pp.1-30). Greenwich, CT: Information Age.
- Dhiman, V. (2009). *Best practices for e-tutoring*. Retrieved June 20, 2009, from http://wiziq.typepad.com/wiziqcom/elearning_and_etutoring
- DimDim History. Retrieved May 3, 2009 from http://www.dimdim.com/opensource/dimdim_gnu.html
- Downes, S. (2005). *E-learning 2.0*. National Research Council of Canada. Retrieved January 15, 2009, from <http://www.elearnmag.org/subpage.cfm?section=articles&article=29-1>
- University of Melbourne. (2009). *Educating the net generation. A handbook for practice and policy*. Retrieved June 21, 2009, from <http://www.netgen.unimelb.edu.au/downloads/handbook/NetGenHandbookAll.pdf>
- Elbaum, B., Vaughn, S., Tejero Hughes, M., Watson Moody, S., (2000). How effective are one-to-one tutoring programs in reading for elementary students at risk for reading failure? *Journal of Educational Psychology*, 92(4), 605-619. Retrieved June 14, 2009, from <http://psycnet.apa.org/index.cfm?fa=buy.optionToBuy&id=2000-16403-001>
- Finkelstein, J. (2006). *Learning in real time*. San Francisco, CA: Jossey-Bass
- Friedman, T. (2007). The world is flat: A brief history of the twenty-first century. *Language Learning & Technology*, 8(1), 66-82. Retrieved Feb 15, 2009, from <http://llt.msu.edu/vol8num1/hampel>
- Gordon, E. E., Morgan, R. R., O'Malley, C. J., & Ponticell, J. (2007). *The tutoring revolution:*

Applying research for best practices, policy implications, and student achievement.
Lanham, MD: Rowman and Littlefield.

- Hastie, M., Chen, N.S., & Kuo, Y.H. (2007). Instructional design for best practice in the synchronous cyber classroom. *Educational Technology & Society*, 10(4), 281-294. Retrieved June 20, 2009, from http://www.ifets.info/journals/10_4/24.pdf
- Hewett, B., & Ehmann, C. (in press). *Orienting writing instructors for online contexts: Principles and processes*. National Council of Teachers of English. (Incomplete reference)
- Hughes, K. (1999). *Gender and self employment in Canada, assessing trends and policy implications*. Retrieved March 31, 2006, from www.cprn.org
- Johnson, G.M., & Bratt, S.E. (2009). Technology education students: E-tutors for school children. *British Journal of Educational Technology* 40(1), 32-41. Retrieved June 16, 2009, from <http://0-search.ebscohost.com.aupac.lib.athabasca.ca/login.aspx?direct=true&AuthType=url,ip,uid&db=tfh&AN=35854182&site=ehost-live>
- Jones, P. (2007). *The new buzzword: E-tutoring*. Retrieved February 2, 2009, from http://www.amazines.com/article_detail.cfm/297489?articleid=297489
- Karabulut, A., & Correia, A.P., (2008). *Skype, Elluminate, Adobe Connect, and iVisit: A comparison of web-based video conferencing systems for learning and teaching*. Proceedings of Society for Information Technology and Teacher Education International Conference p. 481-484. Chesapeake, VA: AACE. Retrieved July 20, 2009, from <http://www.editlib.org/p/27212>.
- Kern, R., & Warschauer, M. (2000). Theory and practice of network-based language teaching. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practice*. New York: Cambridge University. Retrieved Feb 1, 2009, from <http://www.gse.uci.edu/person/markw/nblt-intro.html>.
- Kolabora, (2007). *Web conferencing tools and technology: A mini-guide*. Retrieved June 15, 2009, from http://www.kolabora.com/news/2007/06/22/web_conferencing_tools_and_technology.htm
- Kruft, C.M. (2006). *Sylvan Learning Center tutoring research*. Retrieved October 2, 2008, from <http://www.sylvan-tutoring.com/pdfs/Sylvan-Tutoring-Research.pdf>
- Kulik, C.L., Kulik, J., & Cohen, P. (1982). Educational outcomes of tutoring: A meta-analysis of findings. *American Educational Research Journal*, 19(2), 237-248. Retrieved June 12, 2009, from <http://www.jstor.org/stable/1162567>

- Kumon Institute of Education Company Ltd.. (2004). *Company History*. Retrieved October 27, 2008, from <http://www.fundinguniverse.com/company-histories/Kumon-Institute-of-Education-Co-Ltd-Company-History.html>
- Kvavis, R.B., & Caruso J.B. (2005). *ECAR study of students and information technology. Convenience, connection, control and learning*. Boulder, CO: Educause. Retrieved May 1, 2009, from <http://www.educause.edu/ir/library/pdf/ers0506/rs/ERSO506w.pdf>
- Lotze, C. (2002). *Online mathematics and statistics tutoring: Effectiveness and implementation*. (Doctoral dissertation, American University, 2002).
- Mann, J. (2007). *Gartner magic quadrant for web conferencing*. Retrieved May 1, 2009, from <http://whitepapers.silicon.com/0,39024759,60320986p,00.htm>
- McGreal, R. (2004). *Online education using learning objects*. Taylor and Francis Group. Routledge.
- Oblinger, D. (2003). Boomers, gen-xers, and millennials: Understanding the new students, ' *Educause Review*, 38(4), 37–47. Retrieved June 12, 2009, from <http://www.educause.edu/apps/er/erm03/erm034.asp>
- Pellettieri, J. (2000). *Negotiation in cyberspace: The role of chatting in the development of grammatical competence*. Retrieved May 1, 2009, from http://www.iatefl.org.pl/call/j_article34.htm
- Perey, C. (2005). Interwise leads field of 11 vendors in global test of voice/video over IP services. *Network World*. Retrieved June 15, 2009, from <http://www.networkworld.com/reviews/2005/050205-test-web-conferencing.html>
- Peterson, H. (2007). *Screen sharing performance of web conferencing services*. Retrieved on July 15, 2009 from http://www.adobe.com/products/acrobatconnectpro/productinfo/features/turbo_screensharing/turbo_screensharing_wp.pdf
- Reushle, S., & Loch, B., (2008). Conducting a trial of web conferencing software. *Turkish Online Journal of Distance Education*, 9(3), 2. Retrieved on May 20, 2009 from http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/3e/8c/1f.pdf
- Rogoff, B. (1990) *Apprenticeship in Thinking-Cognitive Development in Social Context*. New York, Oxford University Press.
- Rosenberg, M. (2000). *E-learning: Strategies for delivering knowledge in the digital age*. New York, NY. McGraw-Hill.

- Schullo, S. (2006). *A tale of two systems: Elluminate Live vs. Macromedia Breeze*. Retrieved June 15, 2009, from http://www.uwex.edu/disted/conference/Resource_library/proceedings/06_4385.pdf
- Schullo, S., & Hibelink, A. (2007). *Selecting a virtual classroom system: Elluminate Live vs. Macromedia Breeze (Adobe Acrobat Connect Professional)*. Retrieved June 15, 2009, from <http://jolt.merlot.org/vol3no4/hilbelink.htm>
- Shepherd, C., (2009). *In search of the perfect e-tutor*. Retrieved June 1, 2009, from http://www.fastrak-consulting.co.uk/tactix/features/perfect_etutor.htm
- Smith, B. (2009). *Anywhere, anytime tutoring in real time*. Retrieved June 22, 2009, from <http://www.sloanconsortium.org/node/278>
- Sulcic, V., & Sulcic, A. (2007). Can online tutors improve the quality of e-learning. *Informing Science and Information Technology*, 4, 201-210. Retrieved April 1, 2009, from <http://www.scribd.com/doc/8476547/Can-Online-Tutors-Improve-the-Quality-of-ELearning>
- Sylvan Learning Systems Inc. (2001). *Sylvan Learning Systems Inc. Company History*. Retrieved October 27, 2008, from <http://www.fundinguniverse.com/company-histories/Sylvan-Learning-Systems-Inc-Company-History.html>
- Sylvan Learning Online (2005), *Sylvan Learning Center Launches Live Online Tutoring Program Nationwide, Offering Convenience and Guaranteed Academic Results*. Retrieved February 2, 2009, from http://tutoring.sylvanlearning.com/live_online_tutoring_news_archive.cfm
- Wood, W., & Wood, H. (1996). *Vygotsky, Tutoring and Learning*. Oxford Review of Education, v22 n1 p5-16 Mar 1996 Retrieved January 1, 2009, from <http://www.jstor.org/stable/1050800>

Appendixes

Adobe Connect Product Features

Feature	<u>Acrobat Connect for Individuals</u>	<u>Acrobat Connect Professional for Enterprise / Departments</u>
Meeting rooms	1	Unlimited
Maximum meeting size	15	1,500
Cross platform		
Personalized meeting room URLs	yes	yes
Screen sharing	yes	yes
Application sharing		
Chat, notes, and whiteboard	yes	yes
Teleconferencing	yes	yes
Multipoint video	yes	yes
Integrated audio		yes
VoIP		yes
Meeting recordings		yes
Customizable layouts and windows		yes
Multiple meeting rooms per user		yes
User management		yes
Administration and reporting		yes
Large events and polling		yes
Central content library		yes
Collaboration Builder SDK		yes
Deployment options	Hosted	Hosted and licensed
Price	Flat fee: US\$39/month, US\$395/year	Flexible licensing model

Elluminate Live Product Features	Elluminate Live!®	Elluminate Live! Lite™	vClass™	vOffice™	vRoom™
Superior technical foundation	✓	✓	✓	✓	✓
Integrated Teleconferencing	✓	✓	✓	✓	
In-session invitations	✓	✓	✓	✓	✓
Crystal-clear, full-duplex voice over the Internet	✓	✓	✓	✓	✓
Shared, interactive whiteboard	✓	✓	✓	✓	✓
Chat	✓	✓	✓	✓	✓
Advanced moderator tools	✓	✓	✓	✓	✓
Closed captioning	✓	✓	✓	✓	✓
Instant polling	✓	✓	✓	✓	✓
Emotion and activity indicators	✓	✓	✓	✓	✓
Timer	✓	✓	✓	✓	✓
Math symbol library	✓	✓	✓	✓	✓
Graphing calculator	✓	✓	✓	✓	✓
Language translations	✓	✓	✓	✓	✓
Accessibility features	✓	✓	✓	✓	✓
Application Sharing	✓		✓	✓	✓

Synchronized notes	✓		✓	✓	✓
Multipoint Video	✓		✓	✓	✓
High-resolution webcam video	✓		✓	✓	✓
Multimedia content delivery	✓		✓	✓	✓
Participant profiles	✓		✓	✓	✓
Breakout Rooms	✓		✓	✓	✓
Interactive quiz and survey manager	✓		✓	✓	✓
File transfer	✓		✓	✓	✓
Synchronized web tour	✓		✓	✓	✓
Full-screen presentation mode	✓		✓	✓	✓
Record and playback	✓		✓	✓	
Other					
Multiplatform support	✓	✓	✓	✓	✓
Unlimited users	✓	✓	25-200 Users	5-20 Users	3 Users
LMS integration	✓	✓	Quick-links	Quick-links	Quick-links
API Toolkit available	✓	✓			
Ability to run pre-defined session plans created with	✓		✓	✓	✓

Illuminate <i>Plan!</i>					
Supports use of Illuminate <i>Publish!</i> for audio,video and standalone recordings	✓		✓		
Purchase includes Illuminate Next> (Illuminate <i>Plan!</i> and Illuminate <i>Publish!</i>)			✓		
Hosted service available	✓	✓	✓	✓	✓
On-premise software available	✓	✓			
Simultaneous rooms	✓	✓	Single room	Single room	Single room
Licensing model	Open access	Open access	Concurrent seats	Concurrent seats	FREE for 3 seats
Session Administration	Illuminate <i>Live!</i>	Illuminate <i>Live! Lite</i>	vClass	vOffice	vRoom
Reporting	✓	✓			
Session creation and scheduling	✓	✓			
Configurable session e-mail invitations	✓	✓			
Ability to add sessions to calendar	✓	✓			
Session configuration options and defaults	✓	✓	Pre-defined	Pre-defined	Pre-defined
Multiple meeting types	✓	✓			

Session content preloads	✓	✓			
User groups and authority	✓	✓			
Configurable user authentication	✓	✓			
Cost centers	✓	✓			