This paper provides insight into the creation, evolution and future direction of the TalentEd Virtual Enrichment Program (TEdVEP). The rationale and philosophy that underpin the program are discussed. Technological and pedagogical issues associated with setting up this innovative Internet based program of enrichment and extension activities are examined, with an emphasis on the use of technology as a tool for learning rather than the use of technology for technology’s sake.

The TalentEd Virtual Enrichment Program uses computer technology to provide enrichment courses in various subjects and topics to high interest and high ability students of all ages, regardless of geographic location. Course notes are provided on the Internet and communication between the students and their course leader and among the students is by e-mail, moderated e-mail list, chat rooms and forums. Students may undertake a course either as a school initiative or working from home.

Internet provision of enrichment allows participation by students who may not otherwise have the opportunity due to social or geographic isolation or physical disability. On-line provision allows for asynchronous participation to accommodate student-preferred work pace and school, family and student schedules.

Rationale

The advent of an information society (Tiffin & Rajasingham, 1995 p.48) is resulting in personal computers becoming commonplace in Australian schools and homes. Widespread Internet access, particularly the world wide web (WWW) and electronic mail (e-mail), are providing the opportunity to bring world information resources, learning opportunities and expertise into the classroom and home.

Stuckey (1997) advocates the use of learning technology and communication technology to empower student learning by bringing the world of information from primary sources right into the classroom. Roschelle (1995) describes the possibility of education in which computer communication technology is used by educators and learners collaboratively in the construction of shared resolutions to problematic experience. He acknowledges the potential power of collaborative technology as the instrument of mutual knowledge construction.

While there is a computer in almost every classroom in Australia, and all New South Wales public schools have Internet connection, the educational potential of these tools and the opportunities they
present for resource access and communication, are yet to be realised. At best they are being used to complement the traditional instructional curriculum (Moersch, 1995). Gross (1993, p.175) observes that computer use in schools generally lacks intellectual content and is restricted by teachers’ lack of computing skill and knowledge. Kolde (1997) notes that there may be computers in classrooms but they remain ancillary to the pedagogy of the traditional classroom. A disillusioned parent stated, “We may as well have got empty cardboard boxes to sit at the back of the class and gather dust” (Personal communication, 1998).

The reasons for the apparent hesitancy of schools and teachers to make use of the educational opportunities of computers and the Internet are probably numerous. Some of the main reasons appear to be:

- Lack of teacher experience using the Internet and computers in general
- A teacher view that “computers” are just another something that they have to teach
- Limited technology support or direction on how these tools can be used effectively to contribute to a quality learning experience for their students.

Electronic communication has the potential to provide learning opportunities that are not restricted by access to resources or expertise. Kolde (1997) describes this as the “distribution of education to learners anywhere at any time”. Schwartz (1997, p.30) notes that it is important for students to make sense of our information rich, rapidly changing world rather than simply to recall content.

If the purpose of education is to prepare children to be productive members of society then education must move with the changes in society. “If the purpose of education is to prepare children to be productive members of society then education must move with the changes in society.”

Internet in their teaching practice.

Virtual classrooms, schools and enrichment provisions can contribute to overcoming the restraints on the integration of computers in education by providing on-line courses that use the Internet as an information resource and means of communication. They can help overcome the problems of teacher uncertainty as to how they can integrate technology in their teaching by providing ‘ready to access’ enrichment courses.

TalentEd Virtual Enrichment Program

The TalentEd Virtual Enrichment Program (TEdVEP) is an evolving program developing from the University of New England Talent Enrichment Days, requests for increased enrichment opportunities from teachers, parents and students, the connection of schools to the Internet and increasing numbers of children with Internet access at home. The desire to be accessible to students using a variety of computers and browser software has necessitated a conservative attitude in designing and building the TEdVEP web site and course pages.

The TEdVEP site is aimed at and therefore constructed to appeal to an audience of young learners. Fishler (1998, p.20) observes that, because of television, video games and other stimuli, children are living in a visually stimulating culture, the message being that, to appeal to children WWW sites must have suitable content and be visually stimulating. Children’s experience of being exposed to a variety of stimuli means that they respond to rich multimedia experiences and have the experience to sort the variety of signals into meaning. Harel (1996)
describes this ability of children to take and sort multiple signals as multi-tasking. These experiences have prepared children for interaction with the multiple stimuli of the Internet.

The WWW’s capabilities of presenting information in multimedia format, combining text, graphics, sound and video files, allows the site author to present information that caters to and complements a variety of children’s learning styles. However, Fishler (1998, p. 21) makes the important observation that children do not have the attention span to wait for long down-loads of web pages. They tend to live in a “now environment” so files must be kept small for faster loading.

In aiming to appeal to an audience of young learners, the TEdVEP site has been created to be visually stimulating with judicious use of colour, graphics and some animation. This creativity has been restrained by the need for small file sizes. Sound and quick time video have not been included yet due to the range of capabilities of school and home computers. Another limiting factor is the need for all material going into many schools to pass through the Ozemail Gateway Server that appears to be slowing load times and access opportunities.

Asynchronous participation, that is the course leader and students not needing to be on-line at the same time, is one of the great advantages of on-line provision at this time. The inclusion of real time interactive section or courses would remove this attractive feature of student participation at times that fit their schedule, commitments and time zone.

**TEdVEP web presence**

The TEdVEP site has been created with the novice user in mind so that it is easy to navigate. Ease of navigation also has the effect of limiting the extraneous cognitive load from which beginning users of the Internet often suffer. As the Internet format of the courses would involve the students in not only a new learning experience but also a new learning environment, it was necessary to provide a guide to Internet use with an acceptable use policy that is also a statement of our expectations of on-line conduct. We have also provided basic instruction about navigation and information location on the Internet as well as guidance for attaching documents to e-mail messages. The site can be expanded and courses added and removed without upsetting the site structure. The Site now consists of the TalentEd Virtual Enrichment Program Home Page, with links to the following pages or sections:

- **The Course Schedule 1999 page** contains the schedule of courses and links to information pages on the individual courses.
- **Student Common Room and Course Entry, is the page that provides links to all course notes.** The course notes are password protected to protect the privacy of the students and their work and also to protect the intellectual rights of the course leaders.
- **Acceptable Use Policy (AUP):** Young Internet users can potentially interact with thousands of networks and computer users. For that interaction to be educationally productive and to protect the rights of all users and service providers then computers must be used in a responsible, efficient, legal and ethical manner. As this is the first time that many of the participating students have had considerable Internet access and e-mail use, the provision and requirement of compliance with the AUP is as much a part of preparing the students to be responsible Net users as it is a requirement of on-line behaviour. The TEdVEP Acceptable Use Policy (AUP), was written to set the rules and standards that are expected of students participating in the program. The priority is to state the expectations in concise, clear terms, suitable for our school age students, and to provide guidance on meeting those expectations. It is stated in the course notes that students must read the AUP and by enrolling in the courses they are agreeing to abide by the policy.

While it is Department of Education and Training policy that all schools should have their own AUP the reality appears to be that most do not. In the schools where there is a policy it appears to be not readily available or enforced. The TEdVEP Acceptable Use Policy was developed using guidance and ideas from a number of Internet sites and consultation of Department of Education and Training documents.

- **Our Conditions of Entry, are** conditions of student ability to be eligible for participation in a course. They are conditions that relate to level of participation in accordance with a student’s ability along with conditions of parent and teacher responsibility to ensure adequate computer and Internet access for the student to be able to participate fully in course activities.

- **Search Engines links** are provided to give students ready access to a variety of search engines to facilitate resource location.

- **Links to Resources for Research and Discovery** for students, parents and teachers is a page of links to Internet resources catalogued approximately according to KLA areas. It is not intended to be a definitive list of Internet resources but a starting point for student research.

- **The Introductory Internet Instruction page** is provided as many of our students and their supervising teachers and parents are first time or relatively inexperienced Internet users. This basic instruction page was prepared to assist both students and supervisors in working in a new environment, as was the page describing how to Attach a Document to Your E-mail.

- **TalentEd Longest Lipogram Competition.**

- **Examples of Students’ Work.**

**TEdVEP curriculum**

TEdVEP aims to provide open ended enrichment opportunities that challenge the student to move beyond...
opportunities

traditional school learning and to explore their natural inclination for learning and discovery. Catering to the needs of young learners, at a distance, has necessitated the development of a pedagogy, where virtual teachers are providers of opportunity rather than the traditional classroom teacher’s role of provider of knowledge. The students are encouraged to share experiences, ideas, problems and solutions to create a collaborative community of learners.

The structure of TEdVEP courses gives the student empowerment over the pace and depth of enquiry that they are engaged in. Students are encouraged to become risk takers with their learning through creative thinking and hypothesising, and testing ideas and solutions to relevant real world problems and situations.

During TEdVEP courses the children become the creators of their knowledge through first hand investigation of the topic. The process skills of researching, validating and interpreting information are developed as the children gather information from a variety of sources and apply it to their situation or topic. Rather than being required to exhibit knowledge through tests the students are encouraged to investigate and hypothesise solutions to their problem or situation. As with all good research or creative effort the students are encouraged to publish their findings or product at class, school, community or global level. The leaning environment is transformed through the use of the Internet for course provision, information gathering and communication with information sources, course leaders and other students.

**TEdVEP trial**

During the 1998 trial period the TalentEd Virtual Enrichment Program provided three courses: "Mysteries of the Mind", "Science: Depletion of the Ozone Layer" and "Maths: The Thunderbolts 98 World Tour". These courses have been created to provide enrichment activities with an emphasis on the location and processing of information.

These first courses conducted during terms 3 and 4 of 1998 involved 84 students working from 23 different locations in northern New South Wales and southern Queensland. The computer room. This appears to be as a result of apprehension, almost hysteria, about the possibility of students accessing inappropriate material, compounded by a limited degree of Internet literacy and awareness among many supervisory staff. Overcoming this hesitancy of use and difficulty of access will be a process of professional development in how to locate Internet resources efficiently and effectively as a prerequisite for the provision of quality on-line educational opportunities.

In schools where there was sufficient Internet access the courses were very effective and the students produced excellent results. Two small (two-teacher) schools that were involved in the trial courses, and in subsequent courses, have the Internet computers set up in or adjacent to the classroom. This ready access to the computers facilitated the students being able to use the computers when there was time available. The teaching principals at these two schools are committed to the integration of computers in their teaching and appear to be very satisfied with the increased opportunities.
“An essential component of on-line enrichment or enrichment in general is student ownership of the activity that they are engaging in.”

have a more flexible attitude to student access than was the case in some of the larger schools.

The problem of student access to computers in schools, while not as severe during the running of the second round of trial courses (Term 4, 1998), is exemplified by the experiences of one student who changed from a school e-mail address to a home address part-way through the course. When I sought clarification of the situation the mother volunteered the explanation that, “The special ed. teacher at the school is very keen, but the IT teacher maintains a tight hold of all things Internet at the school …… so she (the student) is having to do it from our offices” (Personal communication, 1998). To her credit this student persevered and successfully completed the course.

A number of students worked from home on the courses and this arrangement seemed to result in more reliable and ongoing computer access and positive reinforcement for the students from interested and enthusiastic parents. Responses from parents to our survey questions indicated that parents were prepared to provide Internet access “as much as necessary” or “as much as is needed” for their children when they are involved in productive educational endeavour on-line. Many parents have also indicated that they are enjoying the experience of working and learning with their children as they guide them through courses in this new learning environment.

An essential component of on-line enrichment or enrichment in general is student ownership of the activity that they are engaging in. This requires that the student be the decision-maker concerning being involved in the program and in the choice of course undertaken. Course participation should not be seen as a reward bestowed for good behaviour or classroom diligence but as a provision of enrichment opportunities that could be included in the curriculum for all interested and motivated children.

It became apparent during the trial period that there is a big difference between perceptions of what constitute Internet skills and students’ actual ability to navigate the Internet confidently and competently and to use e-mail. At enrolment one supervisor wrote, “All children are computer literate” but the students’ responses to the question of computer use were ‘hot much” and “hardly any”. There also appeared to be a significant difference between students’ experience of random ‘surfing’ of the Internet and their confidence and skill when asked to employ purposeful searching, ie specific information location and evaluation. This indicated the need and value of providing instruction in Internet navigation, resource location, information retrieval and evaluation.

Some points that came out of course leaders’ and coordinators’ discussion at the conclusion of the trial period were:

• The need for specific Internet skill development through instruction and guidance in expectations of on-line communication, information recovery and course involvement.

• The need to specify teacher/parent responsibilities to ensure sufficient and appropriate computer access.

• The importance of the student being the decision-maker as to course choice and participation.

• The need to modify course structure and tasks to encourage more frequent communication from the children to the course leader and to other children in the course. This is being achieved through adding a number of small tasks that require responses to course leaders and the use of bulletin boards, chat rooms and forums for course messages, comments and student problems and solutions.

• The provision of the TEdVEP-s moderated e-mail list to contribute to the development of a community of learners through providing opportunity for students enrolled in TEdVEP courses to communicate with like-minded peers.

• Open the courses to home enrolments where students currently appear to have more reliable and regular computer access due to less competition for computer time.

Research opportunities

The use and integration of computers in education is in its infancy. The TEdVEP trial courses and survey data indicate that the information and communication resources of the Internet are largely under-used by schools. The use of the Internet for course presentation and communication is just beginning. The challenge for education researchers is to investigate and understand the requirements for successful Internet provision, the variables of students, educators and provision presentation that affect course success.

The ability to navigate Web sites and the Internet appears to be related to configurational knowledge and is important for the successful finding of and return to information sites. Successful student strategies of information retrieval, evaluation and validation must be understood and articulated to assist students, teachers and researchers in effective Internet use. Successful electronic communication skills need to be analysed and guidance provided for students to develop these essential skills for participa-
tion in a developing electronic communication reliant society.

Student teacher selection of "educationally relevant" Internet sites varies between commercial sites, information sites and personal home pages. Research into site selection, validation and educational value could assist teachers and parents to evaluate Internet sites.

Quality research and publication of findings will assist teachers to recognise the many facets of the educational potential of computers and the Internet rather than considering technology as "just something else we have to teach". The affiliation of TEdVEP with the School of Curriculum Studies at UNE is providing opportunity for teacher educators to explore the concept and pedagogy of online provision. Benefits so far include Garry Clark's and Ted Redden's use of the Logo programming language to develop algebraic thinking (Clark & Redden, 1999), Sandra Frid's development of students' metacognitive skills when thinking mathematically and the action research of developing a pedagogy suitable for on-line provision to younger students.

**TEDVEP future development**

The trials conducted during 1998 were sufficiently successful and recognised for the program to be developed further in 1999, with the support of TalentEd and the School of Curriculum Studies at UNE. The 1999 TalentEd Virtual Enrichment Program is operating on a cost recovery basis, with payment for course writers and leaders, and an expanded offering of courses. The program will continue to provide enrichment opportunities for students, especially those in rural areas, who may not otherwise have the opportunity to participate in enrichment courses, develop special interests and communicate with like-minded peers.

The expanded offering of courses during 1999 includes:
- Thinking Mathematically in a Graphics Environment
- Mysteries of the Mind
- Creative Writing
- Pirate Treasure
- Researching and Designing Special Interest Tours
- Exploring the Rainforest Through Poetry
- Cartooning and Creative Thinking
- A Number Extravaganza
- Water, Water, Everywhere
- The Thunderbolts World Tour
- Where, Who and Why in the World
- Problem Solving Mathematically.

Course topics and content are varied to provide courses suitable for lower primary to upper secondary students and to appeal to a range of interests and talent areas.

It is intended that courses such as those provided by TEdVEP will assist students to enter into and make sense of the information rich Internet environment. These courses can help to alleviate teacher and parent uncertainty as to the educational value of computers and the Internet and to prepare students for effective use of computer technology in an 'information society'. As public education funding continues to diminish in real terms and we move towards a user pays society, there may be a need for many more Internet and Intranet programs such as TEdVEP to assist in providing depth and breadth in education opportunities for many students.

"The challenge for education researchers is to investigate and understand..."

**References**


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