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 1995:48) 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. Roschele (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 (1993:175) observes that computer use in schools generally lacks intellectual content and is restricted by the 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 (1997:30) 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. Starr
(1996) states that "As the entire world of
communication and knowledge is
transformed, it becomes inconceivable to
leave education out". The Internet is too
valuable an information and communica-
tion resource for students to miss out on
and a source of teaching aids and opportu-
nities that teachers should not ignore.
However, many teachers and schools seem
unwilling to include computers and the
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 one provision that
contributes to overcoming some of the
difficulties of integrating technology in
education by providing on-line enrich-
ment courses that use the Internet as an
information resource and a means of
communication. Teachers and parents who
enrol students in these courses have both
a reason and an opportunity to learn with
their students through using the Internet
in education. The courses have contributed
to assisting teachers to cater for individual
student needs by providing challenging
enrichment courses for the high
interest/ability students in the group
allowing the teacher more time to provide
other students with personal or small
group assistance if needed. Parents who
feel that their children are not being
adequately challenged at school or
students who are curious and self-
motivated learners are using this
provision.

The TalentEd Virtual Enrichment
Program is a computer mediated collabora-
tive learning environment providing
enrichment courses in various subjects
and topics. It operates in the virtual
environment of networked computers
providing enrichment courses, instruction,
links to resources and electronic
communication among students, and
between students and course leaders.

**TEdVEP evolution**

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
(1998:20) 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 (1998:21)
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 capabili-
ties 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 Enrolment, are NOT 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 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 learning 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 north eastern New South Wales and southern Queensland. The products included a Web page, poetry, news articles, reports, plans and budgets depending on the course and the individual student’s perspective on the content. In most situations the courses concluded with the students’ publication or presentation of work to their respective classes and schools.

**Lessons from the trial**

The TEdVEP trial of this form of on-line provision was sufficiently successful for the concept to be continued in 1999. The trial period was exciting, as the theoretical ideas for on-line provision became reality. During the trial period we identified and worked to overcome a
number of difficulties of on-line provision.

Activating student participation in the first courses meant a number of visits and phone calls to the schools involved in the trial to get the students started on the courses, even though the necessary information was available in letters and e-mails sent previously. It appears that schools are used to functioning on oral communication and as yet are not very confident with e-mail communication. During course work students often looked for verbal affirmation of activity requirements. As a result we decided to make small modifications to course notes and provide explicit instructions on what had to be done and when. This was done to try to counter the problems of students who had read the instructions and could tell me what had to be done still showing some hesitancy in starting the activities. Activities were changed to encourage student communication with their course leader with a number of small e-mail responses rather than one report at the end of each section.

Another problem that quickly became apparent was that most school computers linked to the Internet are closely guarded against almost any use by students unless under the supervision of at least one teacher. In the main, school Internet computers were found to be located either in the library or in a locked 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 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 "not 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.
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 on-line 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.

**REFERENCES**


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