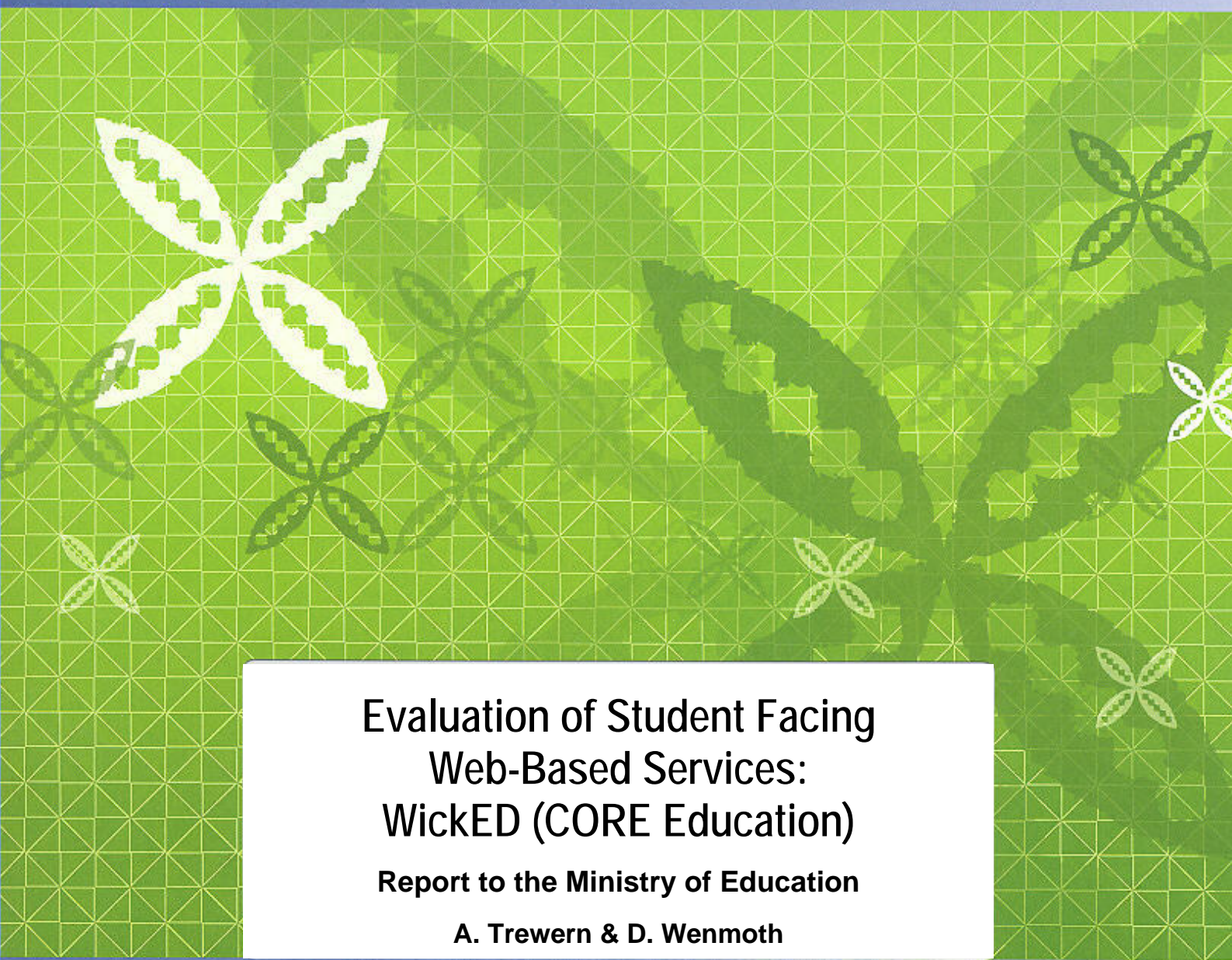




MINISTRY OF EDUCATION NEW ZEALAND

Te Tāhuhu o te Mātauranga Aotearoa



**Evaluation of Student Facing
Web-Based Services:
WickED (CORE Education)**

Report to the Ministry of Education

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WickED Final Service Report

Evaluation of Student Facing Web-Based Services: WickED

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technology | innovation
learning | research

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WickED - Final Service Report

An Evaluation of Student Facing Web-Based Services: WickED

Introduction

This document provides a final service report on the WickED pilot as part of a larger evaluation of web-based learning services for children and young people in New Zealand.

This report focuses largely on a qualitative interpretation of data, and is designed to complement the quantitative evaluation being conducted by Nielsen Net Ratings.

The evaluation of the WickED website is being conducted with a view to achieving two main objectives:

- Understanding more fully the impact of each service on users, teachers, schools, and the service providers themselves.
- Determining how web-based services (in general) are currently aligning and integrating with children and young peoples' overall learning experiences and outcomes.

WickED Website Background

WickED is an educational resource website aimed at students between the ages of 7-12 years. It is a non-commercial site funded by the Ministry of Education¹ and was developed in 2001 as part of the government led Digital Opportunities initiative. Originally the aim was to provide online materials to motivate and extend student learning and to support the use of ICT by after-school 'Study Support Centres.' Study Support Centres were required to have a teacher in attendance and to be connected to the web. Four Study Support Centres were located in four South Island venues, and operated during the first round of Digital Opportunities initiatives from 2001-2003. The purpose was to provide educational resources (particularly online) for students who may not have access to ICT at home, or whose personal circumstances require that they need a quiet, after-school-space to help them with their studies. The Study Support Centres are no longer operational.

While the original focus of *WickED* was to provide after-school activities for Study Centre students, the *WickED* site access statistics, have in recent years, indicated that the greatest use of the *WickED* site has occurred during school operating hours. This has led to the site moving towards catering for more school-based usage in addition to independent student use in study centres or from home.

The original goals of *WickED* included the following,

- Offering a free, multicultural (including resources in English, te reo Maori, and Pasifika) student-facing, quality assured, online space for late primary/intermediate-aged students where they could find engaging learning activities linked to the curriculum and the likely activities of their classroom.

¹ http://www.tki.org.nz/r/wick_ed/teachers/index.php

- Supporting an inquiry-based learning approach for students, providing springboards for group, and independent, study around topical themes.
- Providing an environment where students could share their work with their peers, families, whanau, and the community in response to a range of topics and explorations set by virtual hosts called Wiki² and Ed.
- Creating an environment in which students could post questions for ‘Ed Celebs’ featuring role models and leaders of interest to students.
- An environment in which parents and caregivers could participate in online learning activities in their home.
- An area where teachers could share strategies and perspectives, and to ask the *WickED* development team to reflect particular themes and topics to support their teaching programmes.

The content of the WickED environment at the time of data gathering incorporated the following areas,

Interactives include a variety of mini games, quizzes, crosswords and language activities. These activities, which cover a range of curriculum areas, were designed to be used by students independently.

Forums

- *Homework Talk* is the name of the *WickED* language, Maths and Study topics forums. This is where students can ask a question or talk to a teacher or other students about their homework. This area aims to help students studying from level 1 – 4 of the New Zealand curriculum. Messages are moderated by teachers before going live.
- *Homework Help* provides links to games and activities for reading writing and spelling.

The Student Gallery provides an opportunity for students to contribute work for display.

Themes. These are integrated units with activities from several curriculum areas involving students in a range of thinking and learning skills. Students are led to quality assured websites to complete activities or gather information. They can present their work using a variety of media text and visually based applications. These activities are designed to be completed independently by students.

WickEDtv provides an area for students to share their own video clips. Information is included to help students with the video-making and editing process.

The information Station provides a safe way for students to use and search the web. It includes directing students to the use of child safe search engines, online dictionary and thesaurus, maps, atlases, online newspapers,



² ‘The virtual hosts’. *WickED* is hosted by three virtual hosts. They are designed to be enigmatic, intriguing and featureless to students who are invited to consider who they were and their heritage. The name *WickED* combines the two original virtual hosts of the site Ed and Wiki. Ed is a pakeha character, Wiki is Maori, and a more recent arrival is Tipani who is Pasifika. Students can email these characters in either English or Maori and receive responds in their language of choice. Recently, these characters have had a lower profile as the site has developed. The faceless character depicted below is Wiki.

encyclopaedias, As well there are links to New Zealand libraries, search hints, web-hunts, and instructions on how to use the software 'Frontpage' to create a webpage.

The Teachers Lounge provides background information about content on *WickED* and includes, how to have materials published; how to contribute ideas for new content; how to use *WickED*; and how to help teachers via telephone, email or workshop tutorials.³

Areas of the site that existed during data collection in 2005 included the following areas,

Korero Mai

Literacy Stuff

Maths Stuff

Science stuff

Technology stuff

Cool stuff

Later additions to the WickED site that have not been included in the data gathering include,

Cool Kiwis were New Zealanders that students have identified as being of interest to them are featured. These include actors, writers, musicians, and presenters. A new cool kiwi is profiled on the home page each month. The profile consists of a photograph and interview transcript. Past profiles are still available on the site and are updated as necessary or archived if information changes substantially.

The Kokona Maori area contains links to Maori content on *WickED* as well as other educational information and interactives in te reo Maori.

³ The *WickED* website has been reorganised between the data-gathering (October to December 2005) and final report writing stages (August 2007) of this research. This background section has been included by request of CWA and the Ministry of Education and does not describe some areas of the site that have since been relegated to searchable data bases but are referred to in the analysis and the discussion sections of this report.

Research Approach

Unlike the other two websites that are a part of this overall research project, the forum interactions on the *WickED* site were unsuitable to be used for any sort of analysis. This is largely due to the fact that the primary focus of the site is on the provision of quality learning activities, and forums available for students to use on the site were supplementary to this. Student use of these forums was infrequent and limited to general postings that were purely salutary and social.

For this reason no qualitative analysis was made of website participation, with this research relying instead on the following, three key elements:

1. Interview with website development team

A face-to-face, group interview was held with members of the *WickED* website development team, including the project manager, in March 2006. The purpose of this interview was to establish the intention behind the development of the website, to gain an understanding of how the site is currently managed, and to discover what the team considers to be working well or in need of further development on the site. This visit also allowed the team to demonstrate to the researchers the various features of the site.

2. Survey analysis

The website development team provided the researchers with copies of surveys that had been completed by 49 students at the end of a series of training workshops they had held in schools towards the end of 2005. The research team collated this feedback, which is summarised in some of the graphs that appear in this report to support or contrast with the feedback from interviews.

3. 'In-School' Interviews

Securing interviews proved difficult despite continued and determined efforts to contact schools.

At the beginning of October 2005, a list of schools with whom the *WickED* development team had worked with was received. This included schools they had approached for training and schools who had requested it themselves. In the first instance names of nine schools were given. A further three were shared after a researcher became available to work in Wellington.

Initial contact was made through an email to all schools identified in Auckland (four), Wellington (three) and Christchurch (five), introducing the project and the aims of the evaluation, and requesting that it be forwarded to the appropriate person on the staff. It was hoped that an advance email would give time for the teachers and classes who had been involved in *WickED* to be identified and ultimately save time in locating active users. The email explained that a researcher would be calling the school in the next few days to speak to that contact, and was accompanied by the appropriate ethical consent forms etc. This email was sent out on the week beginning 16 October 2005. Follow-up calls began at the end of that week.

In the event, most phone calls, proved to be difficult and time-consuming, as the email had invariably been passed off as spam, or referred to someone who was not there or not available. One school refused outright to even discuss

the possibility of researchers coming into the school. It took several calls in most cases to firstly identify a person to speak to, and then to make contact with that person. In one case, the researcher had to call the school five times before contact was made with the principal.

On reflection, a number of schools appeared to be ‘wary’ of the word ‘research’ when the team were seeking to establish an opportunity to visit and interview staff. In one case, after securing a phone call with a principal of a centre which had received training, the researcher managed to capture her support and a promise to bring the matter to the staff meeting that week to identify some teachers for interviewing. The research assistant passed on the information to the interviewer. When the interviewer made contact to arrange a time to visit the school, the principal explained that the teachers did not feel confident enough to be interviewed as they did not have enough knowledge of the site. Giving emphasis to the notion of evaluation, and using phrases such as ‘discuss’ and ‘provide feedback’ appeared to make a difference, and combined with the reassurance that the teacher or student did not need to be an expert, the conversations were slightly easier to conduct.

However, it was still difficult to establish specific times to meet. In one case, after many attempts at contacting the principal of a Kura Kaupapa school and explaining our wish to receive feedback on what the site was like for Maori and speakers of Maori, the interview still did not receive permission to go ahead. A similar experience occurred in a Wellington school where, after several interactions, the researcher was informed that the teacher who had been involved in the previous year had just left the school and that they didn’t see any merit in the researcher visiting the school.

Because of the issues described above, a smaller sample than desired was used. Interviews were conducted in just one Auckland school, one Wellington School and three Christchurch schools. Interview participants comprised 7 students ranging from year 5 to 8, an ESOL teacher aide, an ICT specialist aide and four classroom teachers.

4. Other research data supporting this report. Additional research data mentioned in this report includes TKI server statistics⁴ and researchers observational notes, made during the data collection phase.

Special note: Quotes used as evidence in this report are presented in shaded panels referred to as Tables. These have been left unedited, except where portions have been deleted or identifying detail (eg names) substituted. Where this has occurred the substitution is contained within square brackets, or the deletion noted with the following symbol (...).

⁴ Stats for TKI <<http://www.tki.org.nz/cgi-bin/awstats/awstats.pl?config=www.tki.org.nz.WickED>>

Summary of findings (analysis)

The summaries of findings in this section are collated from evidence from the interviews with staff, students and *WickED* management and from student workshop surveys. Due to the difficulty in locating both teachers and students to interview and the small number of teacher and student users ultimately involved in contributing their opinion, the data provided and the conclusions reached are indicative only.

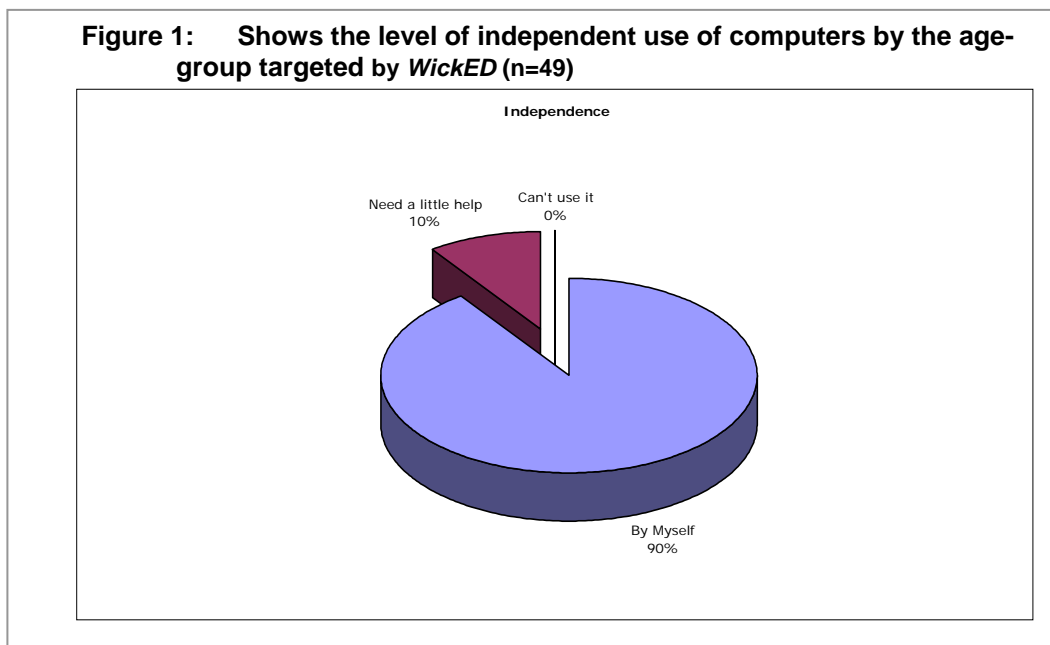
The report comprises the following sections.

- Student perceptions of *WickED*
- Teacher perceptions of *WickED*
- The quality of service provision
- Immediate learning for young people
- Alignment and transfer of learning for young people
- Learning for providers, teachers and schools

Student Perceptions of *WickED*

a) Level of independent general computer-use by the age group of students

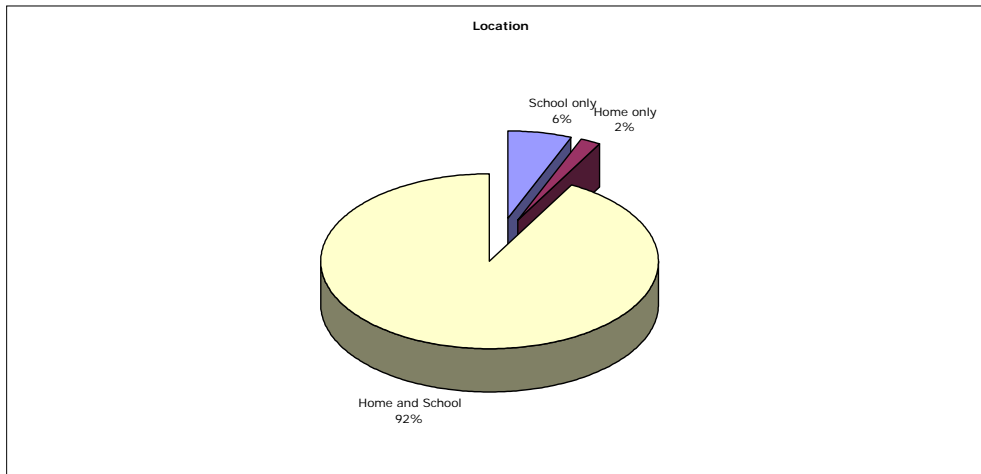
The following information was retrieved from evaluations provided by students attending *WickED* workshops provided by TKI staff. *WickED* was designed and intended to be used as an independent resource by younger, primary students (aged 7 – 12 years). Figure one below shows that the greater majority of students attending the workshops felt they could use a computer independently. Some 10% felt they still need a little help.



b) Locations where students were able to access computers

The great majority of students (92%) who attended these workshops indicated they could access computers both from home and school. Few of these children (approximately three in total) did not have a computer at home and relied on school computers for access. Only one child relied only on a home computer for access. According to the Nielsen NetRatings Report (Dec 2006) this is level of access that is slightly higher than average for the 7 – 12 age group⁵.

Figure 2: Common locations where student had access to computers (n=49).

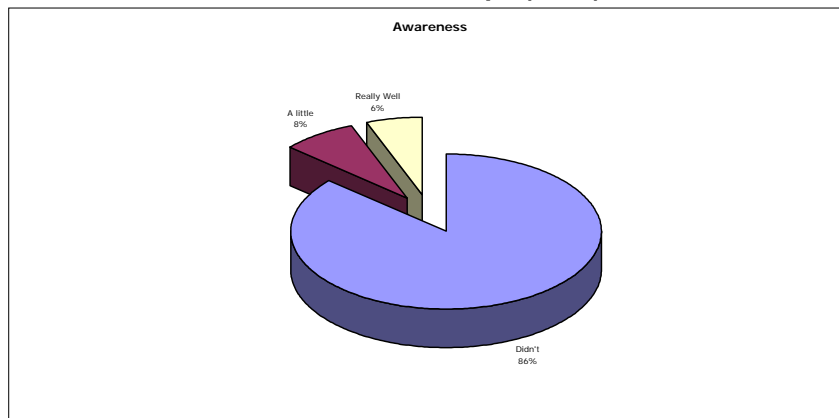


c) Level of students' awareness of WickED

The extent to which students attending the workshops had any previous knowledge of *WickED* is indicated in Figure three below. The majority of students (86%) had not previously been aware of the resource prior to the workshops. A few students (about 4 students in total) indicated they did know a little about *WickED* and some three students indicated they knew *WickED* really well prior to attending the workshops. There is some indication from various data that the *WickED* resource may not be widely known about, and repeat use is limited, by both students (Nielsen NetRatings, 2006, p 30), and teachers (Nielsen NetRatings, 2006, p 57 & 58)

⁵ Nielsen NetRatings Report, Dec 2006 p.23 states that 87% of New Zealand 7 – 12 year olds have access to the internet at home.

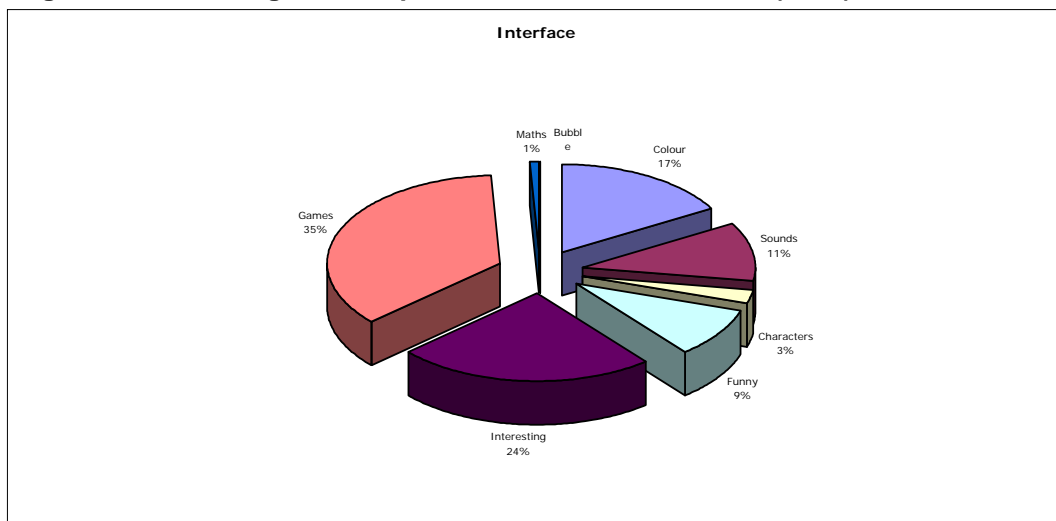
Figure 3: Level of students' awareness of *WickED* prior to their introduction to the resource at the workshops (n=49)



d) Students' general impressions of *WickED*

Students were asked to choose which of the elements (from a list that was provided in the survey) they liked best about *WickED*, and the results are illustrated in Figure 4 below. Thirty-five percent of these students indicated they liked the games⁶ that were featured best, but 24% indicated they also found the site 'interesting', 17% enjoyed the colourful nature of the site, and 11% enjoyed the sounds.

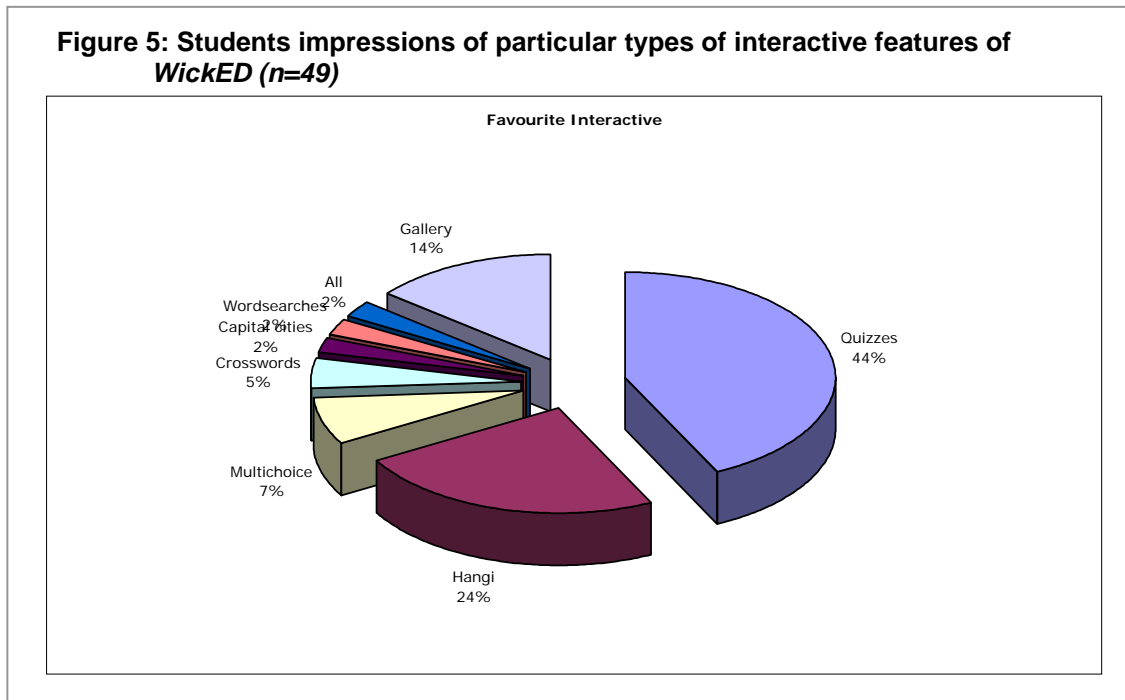
Figure 4: Students' general impressions of the *WickED* site (n=49)



⁶ Throughout the discussions with CWA staff, teachers and students the terms "games", "quizzes" and "interactives" were used interchangeably to describe the interactive online activities that were available.

e) Students' impressions of particular types of interactive features of *WickED*

Students' impressions of particular types of interactive features⁷ are illustrated in Fig. 5. 44% percent of students indicated they liked the games best. 24% percent indicated they enjoyed the Hangi interactive and 14% indicated they liked the gallery.



The hangi interactive is one of a number of similar interactives about general aspects of Maori culture. Because so many of these students had not previously visited *WickED* it is assumed that the hangi interactive was specifically included in the students' listings because it had been featured in the workshops while other interactives had not.

In Table 1 on the following page, some selected comments from student focus group interviews are provided that illustrate those elements of *WickED* that were popular with students. Focus group students comprised year 5 – year 8 students; that is students at the higher end of the targeted age group – those aged approximately 10 – 13 years.

⁷ 'Interactives' is the overarching name given to a range of digital resources where children can manipulate objects or provide answers to the website and receive immediate feedback as to the correctness of their choices. This includes manipulating game pieces, providing text answers to quizzes, crosswords, and multiple-choice questions and uploading personally created content. In some of the raw data used for this report, interactives have been referred to by such terms as quizzes and games.

Interactivity	<p>It looked exciting (<i>student group interviews</i>)</p> <p>I go there for the games (<i>student group interviews</i>)</p> <p>Games are the best way to get kids (<i>student group interviews</i>)</p> <p>Interactives have stuff about the things you want to know about like different countries (<i>student group interviews</i>)</p>
Immediacy	<p>It's way better [than Any Questions] because you aren't talking straight to someone and then having to wait –you just use it like you want to and just go to the place you want (<i>student group interviews</i>)</p>
Homework assistance which was fun to use	<p>I liked it because it was a homework site but not just to ask questions and read lots of 'blah blah' stuff – it's much more than just writing (<i>student group interviews</i>)</p>

Students were very positive about the interactives, which are the most popular feature of the site with this group of students; these are what drew them to the site and they believed they learned from these (for example Maori language; times tables; vocabulary). Interaction, particularly in the form of highly visual games, were an important key attractant to the site⁸. As well as enjoying the digital interactions, students felt they learned a lot.

Immediacy is a high priority for users. The children interviewed here are not interested in waiting for any feedback. They prefer immediate interaction, as opposed to the *Any Questions* site, which requires waiting for a librarian to get back to them.

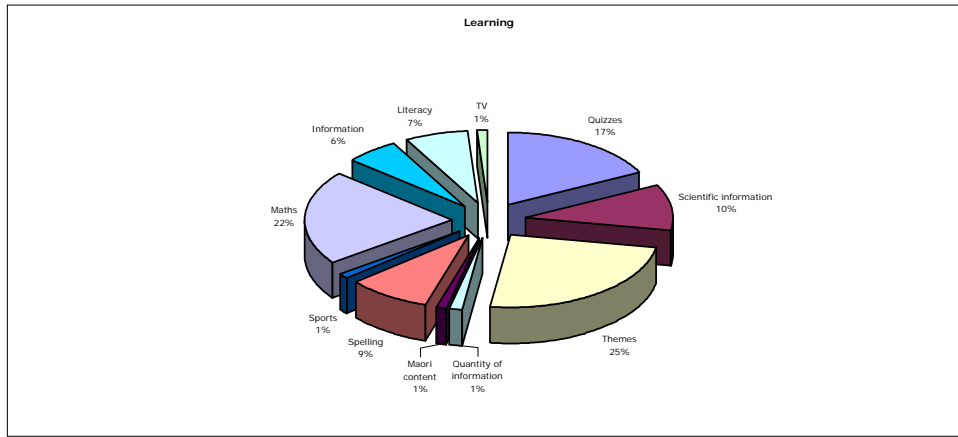
Students appeared to like the fact that the site was not wholly text-based. If they wanted to find information about a topic, they didn't necessarily need to read large amounts of written material – they could choose the more interactive option.

f) Elements of WickED that students' felt helped with their learning

Those elements of *WickED* that were considered by these students to be most helpful with their learning are shown in Figure 6 below. Students appear to have found value in all areas of the site, with a concentration of value being found in the themes, the interactives and mathematics areas.

⁸ Students used the words 'interactives', 'games' and 'quizzes' interchangeably in the interview data and adults tended to use the terms interchangeably in the survey questionnaires.

Figure 6: Students' perceptions of *WickED* content areas they felt helped them with their learning



One quarter of the students considered the ‘Themes’ area to be of most value for learning with over one in five considering that maths was useful and 17% considering that the interactives (or quizzes)⁹ were valuable. Interactives were located within all three of these areas as well as spelling (9%), literacy (7%) and Maori content (1%). It is interesting that 10% of students found the scientific information useful for learning but students who were interviewed indicated that they considered the science area was too static and needed more interactives. (See Table 3 below).

g) Elements of *WickED* that were less popular with students

In Table 2 below, some selected comments from student group interviews are provided that illustrate those elements of *WickED* that were less popular with students.

⁹ The term ‘quizzes’, as bracketed and illustrated in Figure 6, was applied in the original question in the children’s survey about *WickED*.

Faceless hosts were confusing	[When I first saw the faceless hosts] I didn't really get it. Why didn't they have faces? Was it some kind of glitch with my connection? <i>(Student interviews)</i> .
Not enough interaction	There isn't enough moving stuff – like for the science bit – it's boring. <i>(Student interviews)</i> .
Lack of customisation options	I'm used to making it look like its mine – like Bebo. <i>(Student interviews)</i>
Homepage sign in	[The bubble] takes too long to sign in. <i>(Student interviews)</i> . My name never comes up anyway. <i>(Student interviews)</i> . [The bubble] is a waste of time - takes too much time. <i>(Student interviews)</i> .
The search function is not very effective. Students also found some difficulties navigating the site.	Google is better because you can just put in one key word and it comes up with 30,000 hits, then you can do can advanced search. <i>(Student interviews)</i> . It [Google] is better than <i>WickED</i> because its easier to search – you just put in one word – and its got pictures [to search]. <i>(Student interviews)</i> .

Students disliked the 'hosts with no faces' function. This was an element of *WickED* that felt odd to them. One student described her confusion when she first saw them, thinking that there might be something wrong with her computer or internet connection. There was no information on the site about the hosts, making it difficult to find their names and find out something about their personalities and what their purpose was intended to be.

The focus group students indicated they wanted more movement, for example one student suggested the science page was too static. Several suggested that a 'game' would increase engagement and draw them in.

The students interviewed were used to using social software where they could customise and control the look of the interface, for example they could personalise it by changing the theme and colours and other aspects.

The Te Kete Ipurangi (TKI) training session was key to helping students better understand the site and how to use it, but without this they felt it very difficult to navigate and use. The training was also where schools found out about the site. No students had discovered it on their own though some used it once they had been shown it.

As a tool for inquiry, *WickED* was considered by students interviewed to be unsatisfactory, and despite the site being a place to find resources, students did not like using it as such. They expressed preference for internet search engines such as Google where it was easier to find the very specific links they were looking for.

h) Student suggestions for improvement of WickED

In group interviews, students demonstrated a considerable level of sophistication in their knowledge and understanding of the principles of web design, based on their experience as internet users. In Table 3 below, some selected comments from student group interviews are provided that illustrate ways in which students felt *WickED* could be improved.

Incorporate other websites	<p>Put in Projects “web search” – ie they give you a topic and you have to search for it’ (<i>Student group interviews</i>).</p> <p>Should put “Maths Week” in there like the [ANZ] bank’ [sic] (<i>Student group interviews</i>).</p>
Make the sign-in optional	<p>You could keep the bubble but make it so you can choose and move on more quickly if you want. (<i>Student group interviews</i>).</p> <p>TKI could insert a search and you could search on the site rather than using links to other sites. (<i>Student group interviews</i>).</p>
More interactivity throughout the site	<p>[On the science page] you could have the person tipping some chemicals in – then it explodes and starts again. There could be a little game on the edge of the page (to draw me in) where I can move stuff around myself. Maybe a chance to mix up different chemicals and see what the reaction is – then that could cut to a GAME!’ (focus group students laughed) (<i>Student interviews</i>).</p> <p>Like Hells Pizza site¹⁰ – pick up the devils and drop them – we want stuff like that’ (<i>Student interviews</i>).</p>
Increase awareness of student contribution	<p>No we didn’t know we could [contribute to the site]’ (<i>Student interviews</i>).</p> <p>I didn’t know [the forums] were there (<i>Student interviews</i>).</p> <p>Lots of sites are banned and we get into trouble so we avoid going there [to chat forums] there (<i>Student interviews</i>).</p>

Students were able to provide comparisons with features on named sites they thought could be incorporated into the *WickED* site, such as the activities on the ‘Maths Week’ website <<http://www.mathsweek.org.nz/>> which provides games and also quizzes with rewards provided in the form of a cumulative activity log which deals with budgeting and money management, allowing the user to build up points. There was also ‘Bebo’ <<http://www.bebo.com/>> where students were able to personalise their web presence. Students said they found many other sites that were often superior to some of the links supplied by *WickED*.

¹⁰ Reference to the Hell Pizza company website (<https://www.hell.co.nz>) that includes some interactive, fun features

It was not clear to students that they could contribute to the site. They either did not know about the forums or they did not want to contribute to them at school because of the warnings they had received from teachers regarding chatroom use. They feared getting into trouble and therefore kept away. Many schools also blocked access so students were unable to contribute.

Teachers' perceptions of *WickED*

a) Examples of teachers use of the *WickED* website

Teachers were interviewed about their perceptions of *WickED* and the ways they were using *WickED* with their students. Table 4 below illustrates some of the ways teachers were using *WickED* with their students.

For students who finish early	I got 'taught' how to use it by the teacher and given some of the quizzes and interactives to do [when he finished early] (<i>Student Interviews</i>)
As a reward	Using the interactives as a bit of a 'sweetner' for students. (<i>Teacher Interviews</i>)
Use as a source of links for students to use	The creation of a list of links, several of which are activities in <i>WickED</i> . (<i>Teacher Interviews</i>)
Providing opportunities for home school links where students have access to computers and internet at home.	The games and activities are what matter to me because I can link to the classroom, for example the crosswords when I'm doing literacy. The spell binder links to the essential word list which is set for the kids homework so it's implemented easily for those kids who have access at home. For kids who don't have access at home, we can give them time on the computers as part of their literacy session. (<i>Teacher Interviews</i>) Yes we use [<i>WickED</i>] on the computers a lot – we have a chat about what we are going to do. I give spelling activities for homework to the kids I know have computers at home – they can do simple activities alone at home. (<i>Teacher Interviews</i>)
As a teacher led resource. <i>Note several teachers see <i>WickED</i> as a place that THEY use to find resources and activities to then pass onto their students.</i>	I use it often to locate activities that may be used as part of themes I use with my class. (<i>Teacher Interviews</i>) As a whole class activity- eg studying the Wharenui as part of an early Canterbury unit. (<i>Teacher Interviews</i>) As part of structured activities. (<i>Teacher Interviews</i>)

Examples of embedded uses of *WickED* by teachers in curricular activities and classroom themes were quite limited. Reasons for this may include limited access to enough computers in the classroom for students or teachers simply being unable to use the resources for whole class activities because they do not have the means to show the activities to the whole class via a data projector or interactive whiteboard.

Although several teachers indicated they were using WickED with their classes (see examples in Table 4), other teachers viewed *WickED* as an educational resource that they left their students to use quite independently of what was happening in the classroom. Several examples were offered where *WickED* was used for independent homework practice activities where students were known to have access to a computer and internet at home.

b) Elements of WickED that were popular with teachers

Table 5 provides a list of those elements of the site that were more popular with teachers.

Table 5: Some popular elements of WickED with teachers	
Level of language used	<p>This site is more useful than some because children can relate to it and understand the language – its not too hard. <i>(Teacher Interviews)</i></p> <p>It has easier vocab and is more friendly [than other sites] <i>(Teacher Interviews)</i></p>
Interactive nature	<p>My daughter uses <i>WickED</i> – she loves the interactives – I have used this with her. The kids want instant interaction - they want to know if they are right or wrong straight away. <i>(Teacher Interviews)</i></p> <p>I really like how the initial page allows the children to enter their names. This makes them aware that other kids are connecting with them too – so its an online community. <i>(Teacher Interviews)</i></p>
Bright and colourful appearance and sense of fun.	<p>It's attractive. <i>(Teacher Interviews)</i></p> <p>Really neat site for kids – good resource for teachers too because only so much you can give them in class- and it gives them a game format and spelling- the little dings and noises – they love it and they love to type things in – far more exciting than in a notebook – and its free and colourful and exciting. We don't get that in the classroom all the time. <i>(Teacher Interviews)</i></p> <p>The graphics are a strength. <i>(Teacher Interviews)</i></p>
Teacher involvement in TKI workshops on <i>WickED</i> was well received	<p>Have been grateful that we have been given the chance to go and have a look. <i>(Teacher Interviews)</i></p>
Trusted site for school students	<p>I like the interactive and games with educational value – the fact that they have been found and categorised on a trusted site. <i>(Teacher Interviews)</i></p> <p>I like the fact that someone else has found all the cool stuff – I can trust it. <i>(Teacher Interviews)</i></p>

The level of interactivity, the fun and brightness of the site, the level of language used and the fact that resources recommended on the site could be trusted were all positives for the teachers who were using the resources.

c) Barriers to teachers use of WickED

Table 6 provides some examples of comments teachers offered about the barriers to use of the *WickED* site they had experienced.

Table 6: Some barriers to use of WickED for teachers

Download speed	<p>When I am modelling to the whole class the site is so slow I can't continue. Not sure if it's a school problem or about the site. Is there anything they could cut to make it a bit faster? <i>(Teacher Interviews)</i></p> <p>It's too slow to use with projector in classroom because class get restless on the mat. Mode on whiteboard first with whole class and then take out six kids at a time with help of aide and then use it on school computers - so when I was modelling this it was too slow. Had to ditch it. Too slow – too long to wait. <i>(Teacher Interviews)</i></p>
Limited access to computers at school	<p>Amount of hardware we have (6 computers in the whole school) and what they have at home – we can show them pathways here, and every now and then let them play a game and implement into their programme, but it's not for the teacher to tell them where to go – its access and opportunity. <i>(Teacher Interviews)</i></p> <p>There is a time limit of 1 hour at the homework centre because so many want to use the computers. <i>(Teacher Interviews)</i></p> <p>It's difficult for the students to access the web from the classroom computers – most use is made from within the lab where classes can schedule time in blocks. <i>(Teacher Interviews)</i></p>
Limitations of training	<p>I found it a bit obscure to understand – not really sure how it could be used with students as a result of the training. <i>(Teacher Interviews)</i></p>
Log in problems	<p>The people running the training day didn't realise there'd be so many issues for the kids to log on in our school. <i>(Teacher Interviews)</i></p>
Inadequate search function	<p>Most students don't actually want to use it at all now – they've found other ways to search for the things that they want. <i>(Teacher Interviews)</i></p> <p>When it is used it is too slow to follow all the links – it's easier to Google search for topics. <i>(Teacher Interviews)</i></p>
Navigation issues	<p>It can be hard to find your way around the site. <i>(Teacher Interviews)</i></p> <p>Seems a very long winded way to get to where the students wanted to go. <i>(Teacher Interviews)</i></p>
Some links from the site require good language and reading skills.	<p>Possibly better for mature English speakers / readers for example I looked at a 'favourite' site on Bill Clinton – it was all text! <i>(Teacher Interviews)</i></p> <p>You need a good level of reading to know how to get to where you want to go – most of our students don't have that.</p>
Engagement	<p>Many kids were walked through the <i>WickED</i> site on the training day, but few if any have logged on since. <i>(Teacher Interviews)</i></p> <p>Kids who don't have homework to complete just want to play games – <i>WickED</i> doesn't engage them. <i>(Teacher Interviews)</i></p>

Many of the barriers experienced by teachers were of a technical nature and it is not known whether the causes were the result of technical issues within their own schools or whether the reasons lay within the *WickED* site itself. Interestingly members of the research team did come across broken links and interactives that only partially worked when they explored the site.

There were differences expressed between teachers on their opinions of the quality and usefulness of the training in use of *WickED*. Some teachers were very positive but several felt that it did not assist them to find ways of using the site with students in their particular context.

There is also some evidence of a lack of familiarity with the internet coming through in some of these teachers comments as they appeared to be unaware that some links from *WickED* took them beyond the *WickED* site.

The usefulness of *WickED* for new pedagogical approaches in classrooms was also questioned. Teachers apparently considered it was not always suitable for inquiry-based learning and felt that other sites offered better services where specific resources or information could be more easily targeted. Web resources that were commonly used included, 'How Stuff Works', 'Ask Jeeves for Kids', 'Deep in Spaces (Games)', 'Creative chemistry,' 'CountOn' (for maths games) and more.

Some teacher suspicion about role of and value of games for a more serious educational purpose is evident and is highlighted in the final comment in Table 5. This issue is raised and considered in more detail in the final section of this report.

Several teachers raised the issue of exactly how well many children actually related to *WickED* activities. There is some evidence of this when the numbers of students who make return visits the site are considered. There are a large number of students who do not choose to return after their initial visits to the site. If students convey an, 'I've been there and already done that' attitude towards the site, teachers are unlikely to recommend their students revisit site.

d) Teacher's suggestions for improvement

Table 7 below provides a list of comments from teachers about aspects of *WickED* that would improve the usefulness of the site.

Searching for specific materials is difficult	Trying to find stuff is difficult. (<i>Teacher Interviews</i>)
Clarification of level of content	Can't determine what level or ability it is aimed at. (<i>Teacher Interviews</i>)
Extending the breadth of content	I would like to see a bigger database of related topics – not so useful now that we [the whole school] are doing inquiry stuff. (<i>Teacher Interviews</i>)
Closer alignment with school curriculum and essential learning areas.	Would love to be able to connect with the people in Wellington (TKI) to tell them what topics we've got planned so the appropriate resource can be found and put up on the site. (<i>Teacher Interviews</i>) It needs to be tied to curriculum levels and essential learning areas. (<i>Teacher Interviews</i>)
Improve navigation and search tools to allow for more targeted searches.	There's a need to format the interface somehow so you can reach your target more quickly – with Google it takes you there straight away. (<i>Teacher Interviews</i>)
A gap exists for non English speakers that may be better filled by <i>WickED</i>	It would be good to see it developed more to cater for needs of non-native speakers of English. (<i>Teacher Interviews</i>)

Both teachers and students recommended better search tools for *WickED* because finding materials was proving difficult. Both groups also suggested expanding the resources available or links to them on the site. Where students wanted more interactivity teachers were keener on having resources better linked to curriculum and ability levels and being informed about new resources in advance to aid incorporation of the site into planning.

One teacher indicated the need to better target niche groups for whom English is a second language.

4. Quality of Service Provision

Partnership arrangements and project management

WickED was conceptualised and developed as a free online resource designed specifically to support the ‘Digitally Boosted Study Support Centre’ initiative which was a Ministry of Education funded Digital Opportunities project from 2001 to 2003. The Study Support Centres were located in lower decile areas and marae in both Christchurch and Invercargill and were designed to provide general study and homework support for students at the upper primary and intermediate level where gaps in educational achievement were thought to be prevalent (Winter, 2005). The design and development of the *WickED* website was undertaken by CWA New Media.

The original partnering of CWA and the first Digital Opportunities initiative lapsed with the completion of the three-year funding period in 2003 but the *WickED* site has continued. The goals and purposes of the site have changed from the initial intention of providing safe ‘Themes’ support for Study Support Centre teachers and a place for Study Support Centre students to have fun with educational activities and to publish their work to the gallery spaces. As a result *WickED* has morphed into a product that is now intended to appeal to a much larger and broader audience that goes beyond the needs of the initial Digitally boosted Study Support centres and includes teachers and students from mainstream schools across the country.

The *WickED* site continues to be developed and maintained by CWA and currently receives funding support from the Ministry of Education. No other partners are involved at this point in time.

Operational characteristics

WickED operates as an asynchronous educational site for students and teachers who have access to the internet. *WickED* encourages a generally younger audience to independently explore and enjoy a wide range of educational resources some of which are information based and others of which are interactive and include text based quizzes and manipulative games. A younger audience is noted in the literature as “appreciating animation, sound effects, mine-sweeping¹¹, geographic navigation metaphors such as rooms and 3D maps, clear instructions and interactivity. They liked content that was entertaining, funny, colourful and uses a good deal of multimedia effects.”(in Coogan, 2006, p.35) *WickED* also makes topical, fun and quality assessed classroom resources available to teachers.

The site is available twenty-four hours a day. According to the TKI server stats, most use of the site appears to be from Monday to Thursday with slower usage for Friday through to Sunday. There appears to be higher usage during term time. There is also higher usage from 8am through until about 11 pm with a higher usage bubble occurring between 9am and 2 pm. Students would appear from the server-stats to be making use of the site during school term times and during the school day so use would appear to be for school related activities. While some considerable home use also appears to be evident most use of the *WickED* site appeared from observations by the CORE research team to be made during school time, a finding also evident in the Nielsen NetRatings report (2006) p. 31.

¹¹ *Minesweeping* <http://www.motive.co.nz/glossary/mine-sweeping.php> “is a euphemism for a user’s response to an interface where there is insufficient differentiation between active, ‘clickable’ elements (such as navigation), and content. Without appropriate visual cues, the user must ‘scrub’ the screen to ‘unearth’ active elements.”

WickED is representative of a different genre of educational website than *AnyQuestions* and *StudyIt*. The latter are both help sites staffed by experts who are available to field students' direct questions and supported by resources such as databases and archival information specifically designed to assist students with meeting their immediate learning needs. *WickED* can be categorised as a digital learning object repository. Learning resources are gathered together and arranged by experts for students to explore and enjoy. Because students are encouraged to explore the site rather than directly target specific information they may need it can be harder to meet students immediate learning needs and they can be discouraged from returning. While some areas of the site offer help for students these appear to be minimally moderated and not widely used by students who were often unaware they could post to the site.

Knowledge is generated, built and developed by students in conjunction with experts *AnyQuestions* and *StudyIt*. This occurs through structured online interactions with others (experts and/ or peers) that are archived in subject forums and searchable databases. In *WickED* knowledge is generated by experts in the field of educational software development for use by students. The pedagogical model on which *WickED* is based and consequent student ownership of learning is quite different in *WickED* compared to either *Studyit* or *AnyQuestions*.

An overall observation by members of the research team was, "*that there was a whole lot of material, some of it intriguing, some very cool, but also provided somewhat serendipitously and without an evident development strategy*".(Research team - site observation notes.)

How students found working in the online environment

As outlined in the introduction to this report finding students who were regularly using the *WickED* environment on an ongoing basis became a major challenge for the CORE research team. Evidence from both the CORE and the Nielsen NetRatings teams indicates that the greater majority of students surveyed were new or relatively new to the site. Few of the students who were interviewed had visited the site previously and knew it well enough to be able to comment with a great deal of depth on the various features and resources available.

This information is somewhat at variance with the server statistics, which indicate the site generates a reasonable level of traffic although a considerable proportion of this is generated from US servers with New Zealand users being the second largest group to target the site. A closer look at the server stats also indicates a very small percentage of users spending more than 15 minutes on the site and a majority spending less than 30 seconds on the site.¹²

Most students interviewed indicated they enjoyed the interactives and these had been the reason they had visited the site. Students in the surveys indicated they enjoyed the colours and sounds of the site and a good number of students found the site interesting, exciting and fun. The immediacy of the site was also appealing for several interviewed students who commented they could go there and find what they wanted without having to wait for an operator as with *AnyQuestions*. Others commented on the fact that there was more there than text that you needed to read and this was a positive aspect of the site.

Some aspects of the *WickED* site appeared to annoy a number of students. The homepage sign in, a bubble featuring student's names, was not a popular feature. The faceless hosts of Wiki and Ed also caused some

¹² Stats for TKI <<http://www.tki.org.nz/cgi-bin/awstats/awstats.pl?config=www.tki.org.nz.WickED>>

confusion, and a number of students felt the site needed to allow students more opportunity to personalise or customise the way they could view pages like Bebo¹³ What is also interesting is that a number of students actually felt that locating what they needed on the site was difficult. Many students preferred a powerful search tool to target what they wanted rather than browsing content and felt that it was simply easier to use Google to directly target what was wanted rather than use *WickED*.

The numbers of students who do not return or develop a level of loyalty towards the site is of concern.

¹³ Bebo <<http://www.bebo.com/>>

5. Immediate learning for young people

Determining exactly what immediate learning young people are deriving from *WickED* has been an almost impossible task for the research team. Finding student users of the site and determining how students are using the site to support schoolwork and homework activities has been difficult. When interviewed, students said they were learning particularly from the interactives but examples of the extent and ways the resources were being used to support their learning were not provided. Because the site does not attract text interaction, no archived transcript material exists and so it is impossible to extract explicit examples of the kinds of learning occurring.

There is some evidence from student interviews that the site provides some alignment with their schoolwork. Students indicated they were spurred to use *WickED* in conjunction with schoolwork and had found it helpful although no specific information, indicating in what ways the site was helpful to them, was provided. Evidence that these younger students were looking for help with maths in particular and also in science can be seen in the interest in content areas in Figure 6, and also the number of hits in the server statistics on the ‘Maths Stuff’ area and associated interactives. (Research team – observation notes).

Students appeared to most enjoy using the interactive activities especially the games and quizzes and indicated they learned from these activities to both the CORE research team and in the Nielsen NetRatings survey. The site, especially the ‘Cool Stuff’ and ‘interactive’ areas, does appear to be engaging for students. If it can be assumed that engagement in an activity leads to learning then it can perhaps be assumed that at least some incidental and informal learning is occurring. The ‘Maths stuff’ area which was well stocked with interactives had much higher levels of visitation and interest than the science stuff which students were motivated to visit because of alignment with schoolwork but where students considered the content was lacking in interactives and was therefore less interesting or ‘boring.’

On closer questioning there were many areas of the site that students who were interviewed had never visited. Students did not appear to know about some areas of the site including ‘Korero Mai’, ‘literacy stuff’, ‘technology stuff’ or any of the forums. Some had made a couple of visits to ‘maths stuff’, ‘science stuff’ and the ‘information station’ but there was little interest expressed about going back. *WickED* TV had been too blurry to use. Some schools had blocked student ability to access chats and forums generally so that students did not bother with this type of interaction from school.

A closer look at several of the activities themselves would indicate there is an element of ‘busy work’ in some of the activities that are intended to be completed independently. (Research team – observation notes). Prensky (2005) makes an interesting distinction between ‘mini games’ and ‘complex games’. It is clear that many of the interactives on *WickED* can be classified as ‘mini games’ Prensky defines ‘mini-games’ as having,

little complexity – they typically provide one single type of challenge (along with minor variations)...and ...include practically all of the small “learning games” found on a great variety of web sites, including the BBC, and National Geographic... They treat only one subject, puzzle or gameplay type in a small way. They are (almost) always trivial. (p.5).

Prensky goes on to say,

In education, mini-games are good for providing motivation to practice particular focused skills. But individual mini-games don't educate. They lack the breadth and depth necessary to do so. (p.6).

Complex games on the other hand can be distinguished from 'mini games' by requiring multiple players, and the need for players to be creative, collaborative, except challenge, and be competitive.

A complex game requires a player to learn a wide variety of often new and difficult skills and strategies, and to master these skills and strategies by advancing through dozens of ever-harder "levels." Doing this often requires both outside research and collaboration with others while playing. (p.7).

If the instructional design of the resources themselves does not allow for various ways in which the students themselves can dig deeper with their learning, then there is a need for facilitators to assist the process. *WickED* is also intended to be available for use by teachers with their classes. The teachers' role in using *WickED* resources increases in importance where there is a lack of interaction with online facilitators, who can assist with interpretation and management of the learning process. Many of the interactive activities provided may be more conducive to deeper learning when combined with the scaffolded support of teachers especially where they are incorporated as skills practice activities within broadly based units of work or integrated curriculum topics, or inquiry based approaches. Where the teacher can better scaffold *WickED* activities and better relate them to classroom activities the more likely that incidental and informal learning will be better contextualised and translate to deeper learning for the student.

6. Alignment and transfer of learning for young people

The bigger picture

Within the context of the New Zealand Ministry of Education's e-learning action plan, (MoE 2006), WickED contributes to the provision of a wide range of relevant, high-quality educational content in the form of digital learning resources and curriculum materials for younger students and their teachers.

The effective use of well-designed digital content across a broad range of learning activities is known to have a positive effect on student engagement and student learning outcomes. (MoE, 2006). In order for *WickED* to align with the current Ministry strategy outcomes for ICT-use for school age learners there is a need to offer,

- High-quality digital content for age-targeted-learners and teachers. The targeted learners are emergent as both independent learners and as independent users of the internet and online learning.
- Easily accessible digital content for age-targeted-learners and teachers.
- Relevant and engaging educational contexts for all New Zealand students within the target age group including resources for te reo Maori, and Pasika languages.
- Knowledge-of and knowledge-about high-quality software and digital resources that support and enhance learning for both teachers and students.

As a resource portal, WickED was developed at a time when it was appropriate for resources to be compiled together in an easy-to-access, one-stop website. Reasons for this included:

- concerns about quality assurance, age appropriateness and educational value
- concerns about student safety online
- issues of connection speed
- limitations regarding search capabilities

While the first two points remain valid concerns for educators, developments in the technology have reduced the barriers of access speed and search capabilities to the extent that students and teachers are able to access a plethora of resources using a basic search engine such as Google. The challenge for sites such as WickED will be to continue to engage learners through the provision of high quality resources and learning support in ways that reflect their expectations and the behaviours they have developed through being online.

Support for wider educational goals / landscape

High-quality digital content for age-targeted learners and teachers.

The primary aged student group targeted by *WickED* are emergent as both independent learners and as independent users of the internet and online learning. The role of *WickED* is to cater for the needs of this group within a personally secure environment. A vital role is to allow for exploration of what is achievable with online tools for the age group and this includes interactives and tools for social interaction.

WickED provides both quality assured resources and links to QA resources and this feature of the site is appreciated by learners and teachers. However resources also appear to vary in quality and in educational value. This variability was commented on in a number of ways by teachers and was also an observation made by the research team. Many resources are excellent, others are more difficult for young independent learners or their teachers to use.

Easily accessible digital content for age-targeted learners and teachers.

For those teachers and students who have easy access to computers and the internet in the classroom and at home then most site content on *WickED* is readily accessible. However technical issues such as an inability to logon and slow download speeds are still an issue for many and can make embedded use in the classroom very difficult. It was interesting that adults commented in the Nielsen Netratings report (p.66) that one of the greatest barriers to use of the site is limited student access to computers and the internet from both school and home.

Confusions for students and teachers about what some of the digital content could do and how it could be used for were apparent. Some were only aware of the interactives and were not aware of some of the other site functionalities available such as the forums.

Many of the students and teachers interviewed found locating relevant information was not easy – one said, ‘*it seems a long winded way of getting to where the students wanted to go*’ and most were simply using Google to search for topics because it was easier to bypass *WickED*.

Relevant and engaging educational contexts for all New Zealand students within the target age group including resources for te reo Maori, and Pasifika languages.

The Nielsen NetRatings report indicates that *WickED* has a good level of appeal to many students in lower decile schools. The original intention for *WickED* to provide resources for children in lower decile primary and intermediate schools appears to be a continuing feature of the site even although the purpose and intentions of *WickED* have broadened and there has been a desire to become more inclusive of a wider audience. Children in higher decile schools tended to be more frequent users but also to indicate a slightly lower level of happiness with the site (Nielsen NetRatings 2006, p 11 & 21).

Boys were also more frequent users of the site but also tended to indicate a lower level of happiness with the site (Nielsen NetRatings 2006, p 11) that may reflect differing approaches to the ways girls and boys prefer to learn. Where *WickED* encourages more browsing and exploration to find resources, *AnyQuestions* for example utilises a much more targeted approach for information location.

The site is also appealing to the original age group although there are a higher number of users in the upper end of the age group than expected. (Nielsen NetRatings 2006, p 18)

WickED has an important contribution to make to be inclusive of various cultures within New Zealand. Students can enter the site using English or te reo Maori or can email in a variety of Pasifika languages and will be responded to in their language of choice. Although the site is mostly used by English speakers, the Nielsen NetRatings report indicates that there were also a good number of Maori and Pasifika students who enjoy using the site.

Increase student and teachers' knowledge-of and knowledge-about high-quality software and digital resources that support and enhance learning.

Raising student awareness of site features has been an important task of the *WickED* workshops. One teacher commented the workshops had been important for getting some students started in using the site. Many young students are less inclined to explore online features than may be expected. Some interviewed students were unaware of the communication features available on the *WickED* site. This included the forums. Several other areas of the site had rarely, or never, been visited by students.

For many especially younger students it is not always easy for them to work out how individual features operate on a site or how a site 'works' when they are operating online independently. What is not understood immediately maybe skipped over quickly by many. Consideration of a range of ways of increasing student knowledge of various features and elements of the site is important.

Some of the teachers interviewed had experienced workshop-training sessions based on what was available on *WickED* and how it could be used in the classroom. The training had resulted varying outcomes for teachers. For some teachers the training session was clearly helpful and had got them started in using *WickED* for some aspects of their classroom programmes but others were still not sure how *WickED* could be used in the classroom even after attending the training session. The reasons for these varying outcomes, (that is whether this was the result of the quality of the training or the philosophical and pedagogical inclinations of the teachers themselves, or other reasons), were not clear from the data collected.

One of the issues for teachers in using the site was that connections between *WickED* resources and relevance to curriculum were often tenuous. *WickED* relies heavily of teachers to establish curriculum connections and to contextualise much of the 'mini game' content and wrap 'a-bigger-picture' context around the resources. Although there is a teachers' lounge forum facility available for help and support, there is in fact little help given to teachers on the site as to how the resources could be used, where they could fit existing curriculum or what learning objectives can be assigned to the resources. Such help was given in the workshops, which some teachers had found particularly helpful, but others had not. Some teachers were still uncertain as to how the site could be used in classroom contexts.

7. Learning for providers, teachers and schools

Impact on schools and teacher practices

The aim of *WickED* is to provide resource support for students and teachers that is fun and engaging. The impact of *WickED* on schools and teachers is uncertain. Most use, appears from server stats, to occur during school hours, but the extent of embedded use of *WickED* in schools was difficult to judge and does not seem to be as widespread as the server stat usage appears to show.

Finding teachers to interview who were using the site proved to be as difficult a quest as finding students. Teachers who finally agreed to be interviewed were impressed by the potential of *WickED*. They considered there was a lot of material available, it appeared to be worthwhile and trustworthy and they could see that students enjoyed the colours, noises and interactives available on the site.

Several teachers indicated they had tried or were trying to fit *WickED* resources into their existing practice and were finding it difficult. Fitting the themes in particular, into teachers planning provided them with challenges. Teachers indicated it would be useful if a programme of themes for the year could be published in advance so that teachers were aware, ahead of time, what was coming up and plan for better inclusion.

Some teachers had found the workshops run by TKI staff memorable but others had generally not used the site since being introduced to it. Many teachers were still not sure, even after the training sessions, how it could be used with students. Those teachers who were aware of the site tended to recommend access to the site for rewards for students or as busy work for early finishers and to see the site more as an 'educational resource site for kids'. Very little evidence indeed came to light about ways teachers themselves were using the site in their classroom themes or inquiries.

Positioning as a learning environment by teachers and schools

As with most resource sites, examples could be found where teachers used the *WickED* resources effectively and also where they were used in a more superficial manner. More superficial uses of *WickED* were in evidence where teachers tended to use the resources as rewards or for time fillers for early finishers. Where they did use *WickED* resources within more effective teaching and learning situations these tended to be activities that were incorporated into other themes or inquiries, for example one teacher used the Whare nui interactive activity as part of a unit of work on early Canterbury.(See Table 5) or for directed in school or homework activities. One teacher said s/he use *WickED* language interactives as an independent group activity in the language programme.

WickED as a resource appears to have potential and this was recognised by many teachers who were aware that their students enjoyed the fun and engaging aspects of the site. That site resources had been found by someone else and were quality assured, meant the site could be trusted and this was important to teachers. (See Table 5). The timesaving element of resource location was also important to teachers who suggested the need for more of this. Teachers indicated they would like to see bigger databases of related links for topics provided.

Teachers also expressed a desire to have the site align more closely with school directions in planning curriculum activities with classes. Just why certain themes were selected was not always apparent to either researchers or some

of the teachers who were interviewed. To become more useful for teachers, consideration needs to be given to a strategy whereby teachers are much more involved in the development of the site particularly in terms of resource selection, curriculum connections and forward planning.

For schools undertaking inquiry the site seemed to have limited value. The site does not seem to fit well with the changing pedagogical approaches that teachers of the targeted age group are gradually developing nationally. Teachers developing inquiry approaches in particular were finding location of particular materials to meet specific learning needs, somewhat difficult on *WickED* and indicated a range of other preferred services. While some teachers had embedded resources into their work (see Table 4 for several examples) these examples were few and far between and in many cases teachers interviewed tended to see *WickED* as primarily a place THEY used to find resources and activities to support the current theme or topic being taught and then passed these onto their students.

Learning for front line service providers and the partnering organisations

WickED may best be categorised as a web based digital learning object repository (although more recent developments of the site have introduced some levels of collaborative activity referred to as ‘community’ features by the developers). The primary focus is on providing younger students of primary and intermediate school age with online educational activities that are engaging and fun. It is hard to identify exactly what is unique about *WickED* in its current form when it is compared to overseas sites that are similar in nature, for example ‘PopCap Games’ at <http://www.popcap.com/>. In fact many students and teachers felt that it was often quicker to use Google and hence more exactly target the collections of spelling and maths practice games and other specific interactives they may be looking for.

As stated earlier, the student age group targeted by *WickED* are largely emergent as both independent learners and as independent users of the internet and online learning yet from the literature it is evident many in this group already have clear ideas about what they wish to find and what they want to do. High levels of interaction, bright colours and noises all act as key attractants. Students also come to the *WickED* site with expectations gleaned from non-educational sites about what they should be able to do, and how to personalise their place in cyberspace. Interviewed students were able to list sites such as ‘Bebo’ that raised or altered their expectations of online experiences.

Much more could also be made of the known benefits of the internet for learning with *WickED* – the targeted development of a learning community where students are encouraged to interact with each other, provide feedback or comment on work they have uploaded to the site, and some sort of personalisation of the site for students also needs to be considered.

Better positioning the games and interactives available on the site, in the educational process, may be quite an important strategy for future development. It may also be necessary to attempt to overcome teacher suspicion of the value of entertainment types games in the serious educative process. Prensky’s (2005) view that teachers, being largely of the generation who view games as trivial pursuits, may need some help to see that there is indeed educative value in socially-based games that are of a more complex nature than the student-to-computer interactives currently available on *WickED* and are so hard for teachers to find a purposeful place for in the classroom. *WickED*, could be an ideal place to introduce more involved and complex multiple user and class to class online games that have a strongly educative underpinning for a New Zealand audience.

It is clear from the evidence gathered by both the CORE and Nielsen NetRatings research teams, that *WickED* has a certain appeal for students particularly at the upper age group end of the targeted 7 – 12 year old age group. In fact Nielsen NetRatings (2006, p.7) found that the main interest group included 10 – 13 year olds but extended out to include some 9 year olds as well as a few 14 and 15 year olds. Active targeting of the 10 – 14 year age group may be an option worth consideration for future development of the *WickED* site. The middle school age band is being increasingly seen as a reasonably cohesive group with similar learning needs.

The interactives and fun nature of the site provides a major attractant for the age group but the greater percentage of students in both research reports were identified as being first time users or itinerant users of the site. The site needs to offer more social connections for students to encourage a core group of them to return and to establish a supportive community. Some ways in which this could be achieved could be considered.

Although *WickED* has over time, morphed into a broader and more inclusive learning environment for the age group than was original conceived. The Nielson Netratings report (Dec 2006) found that the *WickED* site still had an appeal for students in lower decile schools and for Maori and Pasifika students. Students in lower-decile economic groups and students from Maori and Pasifika cultures are important groups that need to be kept within any framework for future development.

Also important is the need to raise awareness of students' and teachers' knowledge-of and knowledge-about *WickED* digital resources that support and enhance learning for both the classroom and for home use. Workshops and training sessions have produced varying outcomes with some teachers grateful for the opportunity to see how resources can be utilised and others who remain confused or uncertain about how such resources can be used. It is unclear from the evidence gathered whether these variable outcomes are due to the quality of the training or whether they are due to a variety of other pedagogical or technical reasons.

Workshops and training sessions for students have successfully kick-started some to make more use of the site but others have not returned. The development of 'hooks' that will successfully involve students more deeply in the environment should be considered.

Providing for both teachers and students increases the complexity of the environment and complicates delivery. Singularity of purpose may be an important success factor for online environments. Continuing to provide services and online resources for teachers especially when they have other resources such as TKI available would be worth a review.

8. References

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