Traversing the digital divide
Issues surrounding usability of the teachers' website
Te Kete Ipurangi

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Abstract

Despite the wide availability of computers to teachers throughout New Zealand, and despite the strong philosophy supporting Internet use for teacher development, the actual use of Internet websites aiming to enhance teacher professional development is not high. The New Zealand website Te Kete Ipurangi (TKI) was developed with the aim of connecting teachers to a wide range of materials and information. Professional development of this kind is well supported by many theorists as being able to break down teacher isolation and build a supportive teaching and learning community. Websites for teachers, such as this one, are beginning to develop on the Internet, and their availability to all teachers is of no dispute. The extent to which they are able to be easily employed by teachers as the resources they were intended is, however, a matter only a few have investigated. This research studies some of the navigation aspects of TKI and the usability issues which influence the overall use of this website. Usability tests and a questionnaire were utilised to examine the degree to which this website was usable for teachers and the extent to which there were navigation issues for its intended users. It found that use of TKI was constrained by teachers’ own lack of confidence and feelings of inability, as well as several navigation issues. These issues centered on the language used in the website – particularly in the headings; the search facility; the layout of the site; and the speed of use.
1. **Introduction and research questions**

The Internet has become a growth industry around the world, with New Zealand as no exception. “To be unconnected will quickly become as limiting as being without a telephone or a car”, wrote Brett (1994) ten years ago. And although access to the Internet is now very high (education statistics show that almost every school in New Zealand now has access), the use of it is only just beginning to be questioned.

The education sector within New Zealand has been supportive of the Internet as a way in which to communicate information to professionals within schools. It is seen by many as an ideal way to network teachers, to empower them with skills and knowledge (i.e. for professional development purposes), and decrease the isolation many feel in the teaching sector. The website Te Kete Ipurangi (TKI) was set up with these ideals in mind. It is a site that was developed as the result of a policy infrastructure initiative in the Interactive Education: An ICT Strategy for Schools (Ministry of Education, 1998). TKI aims to be a portal, or umbrella site, operating as a central connecting point for New Zealand teachers to educational materials. It is therefore an information and resource network providing integrated access to a variety of educational resources that are predominantly New Zealand based. The resources of TKI are mainly archived in many different databases and servers. The emphasis is on locally developed lesson materials and models of successful practice in many of the curriculum areas. They include links to websites such as English Online, @science, and NewZealandMaths. Other resources provide local administrative materials,
policy information on enhancing teaching and learning, and on raising student academic levels, as well as materials to support professional development for school management and teaching staff.

However, from the few studies that have been conducted on the use of education websites in New Zealand, figures show a surprisingly low percentage of teachers actually using the websites developed specifically for them. An extensive study by Ham and Wenmoth (2002) looked specifically at TKI, and found that by the end of its second year in operation, only 47 percent of teachers had accessed the site.

Davey’s (2001) study of the website English Online found similar usage with only 50 percent of respondents to her survey having accessed the site. Reasons why the use of websites is not reaching its potential can be categorised under two main headings.

Firstly, there is a body of research that claims obstacles to do with navigation within website architecture are hindering the website’s use. Researchers, specifically looking at websites, claim the main obstacles to successful Internet use are the language used within a website, its layout, the search facility, and speed (to use the computer and find information within it).

Secondly, there is evidence that suggests a user who lacks the skill to successfully access and navigate the Internet and the websites within it. Many overseas researchers have cited lack of training as the most common reason for teachers not using the Internet. Similar themes have emerged
from New Zealand studies, which show many teachers feel they lack the skill, and the confidence, to successfully navigate the Internet.

One of Ham and Wenmoth’s (2002) conclusions from their TKI study was that the greatest difficulties users have with the site relate to navigation and structure. It is from this report, and this particular conclusion, that the present study has evolved. Following on from Ham and Wenmoth’s (2002) report, this study used videos from usability tests, as well as data from a questionnaire (Appendix 1) conducted to analyse Internet use, and in particular TKI use, by teachers in New Zealand. The aim was to look more closely at the usability of the site, in particular the navigation issues its users had. The research questions for this study were:

How usable was the TKI site for teachers?

To what extent were there navigation issues?

What features of the site did they find more or less friendly?

In what ways did teachers make their way through the site?
2. Literature review

2.1. Introduction

The following literature review examines the aspects pertinent to this study. It begins by discussing the literature supporting the use of the Internet as a tool for professional development. The discussion then leads to figures showing actual usage of the Internet by teachers. From these figures emerges a review of the literature discussing the obstacles to Internet usage. The issue of user control and user friendliness arises from this. The literature surrounding the importance of user confidence and clarity of navigation is discussed, with reference to website usability. These concepts greatly affect how the user perceives a website and whether or not they will return to it. A discussion of navigation issues ensues, including speed, search facility, language, and layout.

2.2. Theory supporting Internet use by teachers

Almost every school in New Zealand claims to have access to the Internet (Education Review Office (ERO) 2001; Fink-Jensen, McLennan & Dickinson 2001). This means there is now the potential to bring a vast range of resources, of information, of unlimited communication to each and every teacher. It was the hope of the Government’s Information Communication and Technologies (ICT) Strategy (Ministry of Education 1998) that by 2002, the use of the Internet by teachers (specifically the Resource Centre TKI) would, among other things, provide all schools with multimedia resources, including curriculum and administration resources. This Ministry of
Education (MOE) strategy envisaged ICT as enabling teachers’ access to up-to-date and appropriate resources, as well as enabling interaction, or networking, with peers in local, national, and international networks. Many would agree with the importance of this notion as far as professional development of teachers is concerned. Lai (1996) views networking, and the availability of online resources, as being particularly important to professional development. Lai recommends it in particular because it helps break down teacher isolation and builds a supportive learning community. The isolation of teachers is a worldwide issue as well as a New Zealand one. Figures for 2001 show that in New Zealand, 20 percent of primary teachers worked in schools of seven or less teachers (MOE 2001). Some researchers, however, put this figure as high as 52 percent (MOE 1998, cited in Lai 1999). Today’s emphasis on self-managing schools also means that teachers have greater responsibility, as well as greater flexibility in managing their own technologies. Lai (1996) believes the growth of the Internet has great potential to network and empower teachers with the skills and knowledge they need in their teaching profession. The electronic medium is widely recognised as being well suited to teachers, especially those working in rural and isolated areas, enabling them opportunities to link with colleagues and other educational professionals and to increase their professional development. Many share this same philosophy, emphasising that the Internet enables the formation of a network of people committed to the idea of shared resources and information, allowing teachers to reach outside their classrooms and explore teacher development opportunities that are not available to them any other way (Campbell 1996). A recent strategy for schools for 2002–2004 stresses the goal for teachers to become confident and capable users of ICT to support their professional growth; this should
include online professional development activities (MOE 2003). Many people, including the Ministry of Education, have high expectations of the development as well as the success of such electronically networked communities.

Professionally oriented websites designed specifically for use by teachers are beginning to be set up in increasing numbers on the Internet. Teachers are able to make use of communications technologies to access teaching resources, source new ideas, share ideas or innovative teaching practices, and reflect on aspects of classroom practice.

Expectations of the extent to which the Internet will infiltrate life are not limited to just the teaching profession. Brett (1994) wrote of the growing division between two camps: the information rich, who are ‘online’, and the information poor, who are not. “To be unconnected will quickly become as limiting as being without a telephone or a car”, she claims (p.98). Brett (1994) also predicted that in five to ten years our entire lives will be conducted in cyberspace: we will acquire education and information, shop, conduct business, do our banking, download CD’s, videos and books, play... and the list goes on. These predictions are confirmed by Gates (1995) who was confident that:

The highway is going to give us all access to seemingly unlimited information, anytime and anyplace we care to use it. It’s an exhilarating prospect, because putting this technology to use to improve education will lead to downstream benefits in every area of education (p.184).
With similar ideals to those of New Zealand's own education website, TKI, Gates (1995) goes on to predict:

The highway will bring together the best work of countless teachers and authors for everyone to share. Teachers will be able to draw on this material... feedback from interested instructors will be easy to get and will help refine the lesson. In a short time the improved material could be in thousands of classrooms all over the world. (p.185)

From our standpoint now, in 2003, these prophecies may not be far off the mark, but the extent to which the resources on the World Wide Web are being put to use is yet to be analysed to any great degree. It is not so much the availability of the resources but rather the extent of the use and the ease with which users are obtaining information that comes into question. The predictions of Lai, Brett and Gates may well be correct in theory, but to test the usefulness of such websites as TKI, it becomes necessary to test their use in practice.

2.3. **Actual Internet use by teachers**

The 1998 Information Technology Advisory Group (ITAG) found that of the teachers who responded to their survey, only 29 percent used the Internet during a typical school week. The more recent report by Fink-Jensen et al. (2001) has found almost two-thirds of primary and secondary schools reported having one-quarter or more of their staff use email or the World Wide Web during a typical school week. It also reported that three-quarters of schools have at least one teaching staff using TKI during a typical school
week. Networking computers together within a school environment also enables schools to make better use of ICT through greater access to information and the ability to share work and resources (ERO 2001). However the 2000-2001 findings show only 50 percent of schools had networked their computers, and from these schools a relatively low percentage were from composite schools (ERO 2001). Most of these schools are situated in remote or rural areas. “These schools have the most to gain from using ICT to overcome barriers caused by their isolation, but it would appear they are the least likely to make effective use of ICT” (ERO 2001, p.10). A more specific study of the TKI website found only half of New Zealand’s teachers had accessed TKI by the end of its second year in operation. Findings also indicated that the vast majority of visitors to TKI visit infrequently. A proportionally smaller number visit often, and stay for quite a while (Ham and Wenmoth 2002). Usage of the more interactive features of the site, which involve collegial communication and active contribution, is restricted to a small minority of users who visit these sections rarely, this same report has found. In a study examining the use of the New Zealand website English Online, Davey (2001) found of the English teachers who responded, only 50 percent had used the website. And of that 50 percent, just less than three-quarters (70 percent) had been on line less than once a month on average. Davey concluded that the website was not a significant medium for meeting the teachers’ professional needs. American statistics (Rowland 2000a) paint an even bleaker picture of Internet use for professional development, although their aspirations are similar to those in New Zealand. According to the National Commission of Teaching and America’s Future (1996), encouragement to develop or participate in professional communities would help to alleviate the problem
of teacher isolation, and lack of professional collegiality. Referring to the American experience, it suggests

Teacher academies provide sites for shared problem solving, exchanges of teaching ideas... Unlike old approaches that see professional development as delivering simple recipes to teachers working in isolation, these new approaches connect teachers to one another. Over and over again, teachers attest to the usefulness of these kinds of opportunities for transforming their teaching – and to their scarcity in most school settings. (p.42)

This report claims, however, that computers are rarely used for creating new communication possibilities and sources of information. In another American report, only six percent of teachers report using the Internet to access model lesson plans, only seven percent use it to access research and best practices for teaching, and 16 percent say they use it to gather information for planning lessons. These figures are taken from a group who indicate they use the Internet “a lot” (Rowland 2000a). Becker’s (1999) figures are similarly low, with only 28 percent of teachers using the Internet “weekly, or more often” in an effort to find information resources for use in their lessons. Another 40 percent claim to use it only “occasionally”.

2.4. **Constraints of Internet usage**

It is apparent that teachers have not yet been wooed in any great numbers toward using the Internet for professional development. From the available literature it can be seen that although the access and the theory supporting its
use is there, the need, the inclination, or perhaps the perceived ability to use the Internet, is not. Ham and Wenmoth (2001) have found the major constraints on teachers’ use of the Internet, and TKI in particular, relate to lack of skill, as well as lack of awareness, perceived irrelevance, the pressure of other priorities and/or lack of time. Barriers to the successful use of ICT have also been documented by an ERO report (2001), which found 36 percent of teachers felt their skills and confidence were hindering use, while 23 percent felt they had insufficient professional development to use ICT successfully. The issue of lack of skill is confirmed by Fink-Jensen et al. (2001) who adapted a research instrument described by Knezek and Christensen (1999, cited in Fink-Jensen et al. 2001) whereby principals were asked to indicate which of six stages of ICT adoption they felt most of their teachers were at. The six stages can be briefly described as:

1. teachers who are aware of ICT but have not used it
2. those who are trying to learn the basics
3. teachers who are beginning to understand the process
4. teachers who are gaining a sense of confidence
5. those who can use the computer in many applications
6. those who can apply what they know about ICT in the classroom and can integrate it into the curriculum.

The results showed most teachers (41 percent of primary and 43 percent of secondary) were at the third or middle stage, where they are gaining a sense of confidence in using the computer for specific tasks and they are starting to feel confident using the computer. Only 20 percent of primary and 22 percent of secondary teachers were at the fifth stage of being able to think about the computer as a tool to help them. And only 10 percent of primary
and 1 percent of secondary teachers were at the sixth stage of being able to apply what they know about ICT in the classroom and integrate it into the curriculum.

Talking to others about technology has been endorsed as a positive way for would be users to become more confident in the use of information technology. Koszalka (2001) reported that teachers who participated in discussions on how to use web resources had significantly higher attitude scores (i.e. were more favourably disposed) toward the use of web resources, and thus were more likely to use them. This was reiterated by Smerdon et al. (2000) who found that teachers who reported feeling better prepared were more likely to use technology than their less prepared colleagues. The need for professional development was also identified as a barrier to Internet use in Sleeman’s (2001) study on the degree of Internet use amongst social studies teachers. His data indicated a range of barriers to use, with lack of training being most prevalent.

Coley et al. (1997, cited in Sleeman 2001), in his findings on the status of technology in American schools, reveals that even when teachers do attempt to use technology, they are often unsuccessful because they lack the necessary training and implementation skills. And indeed another study, by Murfin (1995, cited in Sleeman 2001), of telecommunication use among secondary science teachers in New York City found that nearly all the science teachers surveyed were unfamiliar with basic techniques for Internet use. Murfin (1995) concluded “the use of the Internet has actually been a rare occurrence in many schools” (para.9).
2.5. *User friendliness and user control*

User friendliness and user control are two notions that are very closely linked. The idea of user control is one where the user expresses general feelings of confidence in ability, which depend to a large extent on the degree to which clear navigation systems have been applied to the website, i.e. how user friendly the website is. User friendliness is applied more to the website itself, and user control is applied more to the user of the website. Lai (2001) describes the idea of user control as the feelings the user has when they are confronted with the immediate interface - the entry point with which the user communicates. The level of control a user feels depends on how well they can navigate around the interface. The system should be designed to reduce the time required for the users to learn how to find their way around, as well as to find relevant information and communicate with others. The system should be easy to learn, easy to use, and provide a sense of satisfaction (Nielsen 1993, cited in Lai 2001). That is, it should be user friendly.

The degree of user friendliness of a website and the degree of user control for the intended user need to be analysed in order to judge the website for its usefulness. Some argue that web designers are expecting too much of their intended audiences. With skills and confidence levels only just beginning to grow amongst teachers, it may be that designs need to stress clarity and ease of use, above all else. The level of technology and the amount of it available appears to have grown at a rate of speed out of kilter with the average teacher. So for them there is a lot of catching up to do - “although technology is a wonderful thing, Joe and Josephine Consumer are years
behind the tech types” (Eisenberg 2001 para.8). The argument follows that
the user shouldn’t need a lot of training – “Would anyone buy a Porsche if
shifting gears required weeks of model-specific training...?” (Paul 2003,
para.5). What is needed instead, claim many researchers, is just a bit of
clarity – without which users will not stay long enough to see the content of
the website, regardless of its merits. Nielsen (2000b), for example, prefers to
adhere to a notion that reflects such findings, claiming “Basically, all web
users are novices all the time, since you very rarely use any individual
website long enough to become an expert user. The site needs to target
novices in its design...” (para.14). It seems too many websites are not self
evident or self-explanatory enough. According to Krug (2000) users don’t
want to have to think about such things as what they should click on, how
they search, where they are, where they should begin, what the most
important things on the page are, or what the titles mean. If the navigation
proves to be too difficult, the consequences are often fatal for the website.
A recent study found that a third of online banking customers closed their
accounts within a year. Half said it was because the site was too difficult to
navigate (Graham 1999).

Navigation issues are having serious implications for the success of many
websites. Confusing search engines, and obscure iconic navigation buttons
are amongst many examples of things users don’t understand (Rowland
2000). Users will often describe the website as unfriendly and feel they
themselves lack the control to operate it well. Garrett (2003) observes this
effect, explaining “…something funny happens when people have trouble
using complicated pieces of technology, they blame themselves. They feel
they must have done something wrong... it’s not their fault the site doesn’t
work the way they expect it to” (p.17).

Another facet of user control involves issues of ownership. By allowing users to contribute and share knowledge with others, a greater sense of user control can be achieved. This can be done through notice boards and personal spaces, which, according to Lai (2001), will increase feelings of satisfaction with, and personal identification with, the learning environment. The usage, however, of the more interactive features of the New Zealand website TKI, which involve collegial communication and active contribution, has been restricted to a very small minority of users who visit these sections rarely (Ham and Wenmoth 2001).

2.6. Navigation issues

It is essential to focus on the site itself to examine which elements could be enhanced to promote ease of use and friendliness. Most critiques of the Internet mention interface as a critical factor which defines the success of a site - the interface being the visual layout of the screens, as well as the design and style of the site (Donnelly 2001). From this interface, users must navigate their way around the site.

A lack of clear navigation systems are, it seems, hindering the usability of websites for many users, creating a serious issue in the overall use of the Internet. Trewern (1996) summarizes these feelings of discontent:

Using the World Wide Web requires the development of information
skills similar to those needed for finding what you want in a library. But while the contents of a library are systematically catalogued and staff are available to help you find what you want, you are most usually on your own when searching the World Wide Web. Often it is not very easy to find the particular piece of information you are looking for. Searches can frequently be time-consuming and frustratingly devoid of good results. (p.39)

The main issues of navigation described in recent literature and research can be broadly assembled under four main headings – those of speed, search, language, and layout.

2.6.1. Speed

The issue of speed appears to be one of overriding importance to many. Today’s Internet users have little patience. They expect immediate results (Kuegler 2000). This author noted in research analysing websites, that over 75 percent of users lasted only three clicks into the site. This stresses how vital it is to capture the users’ attention and direct them immediately to what they’re looking for. Nielsen (2000a) predicted there would be at least 100 million sites on the web by 2002. Why then, he asks, should users waste their time on anything that is confusing, slow, or that doesn’t satisfy their needs? He, too, declares that users are remarkably impatient and insist on instant gratification. In response to this, he feels web pages must be designed with speed in mind. In fact speed must be the overriding design criterion. In order to do this, pages must be kept small, and graphics must be kept to a minimum. “Remove graphic; increase traffic” says Nielsen (2000a, p.46).
This is especially true when approximately 85 percent of people will not read all the text, and around 10 percent of people never scroll down a page (Graham et al. 2000). People do not like to traverse too many pages on the way to where they are going.

Nielsen and Tahir (2001) have found that the majority of regular analog modems require an average of 26 seconds to download most Home Pages. They claim that the recommended response time is 10 seconds, and so most Home Pages are taking almost three times this. A review on the Webmonkey (2003) site has come up with what they call the ‘death-to-download’ ratio. This is where the author has factored in the amount of deaths worldwide that have taken place whilst any one site has downloaded. During the time taken, for example for Amazon.com to download, 39 people have died. While he admits this may be a glib way of looking at one of the most pressing issues of web development, “we continue to throw roadblocks in the way of our users that impede these interactions. ‘But it looks good!’ or ‘but it’s a cool feature’ just aren’t valid excuses for making users wait and wait for a page to load” (Webmonkey 2003, para.7). Neilsen and Their (2001) have found that if the Home Page is slow, users conclude that the rest of the site will be slow and painful to use as well, and they are likely to abandon the site completely. The U.S. Congress of Technology Assessment (1995, cited in Dexter 1999) confirms the importance of reducing time. It found that time was the greatest constraint in teachers’ use of technology: time for experimenting on the computer, as well as time for training, and time for talking to others about the technology.
2.6.2. Search engine

The adequacy of the Search engine is another very common issue for users attempting to navigate a website. Most people visit a site looking for one small piece of information – most have a vision of what they want (Kuegler 2000). Nielsen's (2000a) recommends that most Home Pages need a prominent Search feature because many users are Search dominant, i.e. they seek specific information and use the Search button to find it. Nielsen’s (2000a) usability studies show that slightly more than half of all users are search-dominant, about a fifth are link-dominant (i.e. follow likely links within the site), and the rest exhibit mixed behaviour. The Search button, according to his research, should be available on every single page on the site. Nielsen and Tahir (2001) have found that in 81 percent of sites, the Search function was represented as a box in which users could type their query. Because this is a design they have found to work best in their user testing, they strongly recommend using a Search box. Only 20 percent of the sites had a less usable search design where users had to click on a link that took them to a separate search page.

2.6.3. Language

The adequacy of the language used is another important issue relating to the navigation of a website. Garrett (2003) looked closely at user experience, pointing out that if users have a bad experience, they won’t return. He recommended writers of websites be specific at all times leaving as little open to interpretation as possible, by being light on metaphor and emphasizing function. By doing this all ambiguity and misinterpretation is removed. Users won’t find their way around the site architecture if they
can’t understand the nomenclature: the descriptions, labels, and other
terminology used in the site. It becomes necessary for the writers of the
website to help users make better guesses at what features the metaphors are
intended to represent. This theory is supported by Donnelly (2001), who
notes that users scan an interface by noticing familiar terms; being attracted
to interesting headings and perceiving that the subject is relevant or
important. Hence, terminology is very important. When there are differences
in vocabulary among the targeted audience of the site, good synonym
support needs to be provided, Donnelly (2001) warns. The more diverse the
range of content and functionality a site offers, the less reliable the guesses
at the metaphors used to describe the features become, according to Garrett
(2003). Some part of the audience is always going to guess incorrectly, so it
would be better to eliminate the need for users’ to have to make any guesses
at all. Avoiding metaphors, Garrett (2003) feels, is really just about reducing
the mental effort required for users to get round and use the functionality of
the site.

A usability test, undertaken as part of an evaluation of a university website,
illustrates both the value of usability testing, as well as the usability issues
found within their website. As a result of the tests Corry et al. (1997) found
that there were no answers to frequently asked questions given anywhere on
the website, that the graphics had an inverse impact on the speed of the site
and therefore on its usability, and that re-wording was needed for some of
the headings where they were deemed to be ambiguous. The title Answers to
Computing Questions, for example, was found to be better than Knowledge
Base, as users did not know what the term Knowledge Base referred to and
therefore skipped over this valuable resource.
2.6.4. Layout

The layout of a website is the fourth in the list of important navigation issues of any particular website. Garrett (2003) found that when people comment on a design being “busy” or “cluttered” they’re really reacting to the fact that the design doesn’t lead them smoothly around the page. Instead, their eyes bounce back and forth around a variety of elements all clamoring for their attention. Of the users who stay online at the TKI website for a long time, or who visit very regularly, most stray little from their narrow, well worn paths (Ham and Wenmoth 2002). TKI users are not alone in their lack of dilatability –

We want to debrief people on their way out of a section, reinforce that architecture, and let them know where they are. We sometimes have a tendency to be a very weak, nervous species, and we often require reinforcement and benchmarks. (Sather, cited in Siegel 1997, p.19)

A site map or index, providing a concise one-page snapshot of the overall site architecture, can serve to encourage people to delve further into the site, without fear of getting lost. Graham et al. (2000) agree, claiming, “Good navigation is as intuitive as possible. At any page in your site, your students should know where they are in relation to the rest of the site, they should know where to go and how to get there” (p.63).

Scrolling also comes up for criticism as a layout issue. Nielsen (2000a) claims those who have small screens (55 percent of users) should not be
required to scroll horizontally to view the Home Page - vertical scrolling is bad enough he feels. Most sites he researched used a frozen layout that did not reduce or expand when viewed in either big or small windows. This format means with small windows, pages were cut off. For this reason he recommends a liquid layout where pages will rewrap to fit a smaller screen.

2.7. Summary

The ability to successfully navigate a website is paramount to its success. Although usability studies of the Internet have occurred only in the last five years or so, the few studies that have been undertaken have shown some factors that make for a useful interface and enhance usability.

While there is no doubt there are other areas associated with navigation which contribute to a good website experience, speed, search, language and layout are the features recent researchers identify as the most important. User control is dependent on the successful implementation of these concepts.

Unfortunately there is no one definitive list of all the factors that make for a successful website, although many of the same aspects are mentioned by everyone. They can be very broadly described as: be clear, be bold, be fast, be obvious, be simple, and be consistent. It is universally accepted that without good design, the site will fail as users feel they lack the control to navigate successfully and the website is consequently described as unfriendly. In such cases users are unlikely to want to revisit the site. Veen (1997) neatly encapsulates the idea of navigation in any one website,
In Web design the secret is to rigorously anticipate a user’s process of discovery while eloquently and succinctly placing clues to your content in buttons, blurbs, and images across your site. Remember, your audience is not coming to your website to see the interface. Visitors want to see the content. Show them what you’ve got and how to get there. Then get out of their way. (p.88)
3. **Methodology**

The research reported here is a study of usability issues of one of the most visited web sites by New Zealand teachers, Te Kete Ipurangi. Specifically, this study looked to answer the following questions:

- How usable was the TKI site for teachers?
- To what extent were there navigation issues?
- What features of the site did they find more or less friendly?
- In what ways did teachers make their way through the site?

Two methods of studying the research questions were utilized. Usability tests were undertaken, and a questionnaire was sent to teachers throughout New Zealand. The questionnaire was an extensive one originating from a desire by the Ministry of Education to know how much teachers make use of the Internet, and in particular, TKI. It was able to give a picture of what many people thought, or reported doing on the website. In the same way, the usability tests provided anecdotal evidence, and in doing so illustrated the more general findings, complementing the questionnaire. By using both methods together, findings could be triangulated in order to present multiple perceptions, which clarify meaning and verify the repeatability of an observation or interpretation (Stake 1994).

3.1. **Usability tests**

3.1.1. **Background**

Usability testing shows how well the site allows the users to meet their goals. It provides feedback for site development, and it provides an
educational opportunity for designers and engineers, allowing them to see first hand the decision-making process of an average site visitor (Jupiter 1999, cited by Goto 2001). Most researchers and commentators of the Internet agree that usability tests are the best way to test for site effectiveness. It is a commonly held belief that getting the site right can only be done effectively by testing with real users. Only users can really demonstrate whether the site meets their requirements (Wakeman 2001). If designers want to make sure the website provides a good experience for users, then systematic usability testing is the only way to figure it out (Graham 1999).

In order to gain relevant categories of people for this testing, a type of quota and purposive sampling was used (Neuman 2000). Purposive sampling required judgment by the researcher to select the participants to study. Five users are all that are needed to find 85 percent of the usability problems (Nielsen 2000c). In this case six participants were selected because they made a good cross sectional sample from the teaching sector. A selection of the sample group showing balance and variety is important (Stake 1994). These six people were asked to use the TKI website for half an hour and be filmed while they did so. They were all separate sessions, independent of each other.

3.1.2. **Participants**

Each person had a background in education:

- N is a primary trained teacher of 12 years’ experience. At present she is Head of the Junior School at a Christchurch girls’ school and is also working part time for a company providing computer based learning
for children. She has had a little experience with TKI, and a great deal with other Internet sites.

- P is a primary school teacher at a North Canterbury area school. She has used TKI once or twice.

- M is a secondary trained geography teacher who has since completed his Ph.D. and now teaches at university level. He uses websites a lot in his work, but this was his first time using TKI.

- B is the Principal of an Area School in Canterbury. He uses TKI quite often.

- ML is a secondary maths teacher at a large high school in Christchurch. She uses TKI occasionally.

- L is a primary trained teacher who works in a small 3-teacher school in rural Canterbury. She uses English Online a lot and has used TKI a few times.

3.1.3. Procedure

For the purposes of this study, only the screen was filmed so navigation routes could be judged and the site analysed for its ease of use. A semi-structured interview technique was employed. This ensured participants examined all areas crucial to the study (Burns 2000). Each film was watched numerous times to analyse the data. In particular it was noted the users’ responses to the interface of the website - the aesthetic appeal, the ease and efficiency with which they could navigate around the site, thoughts on the headings and graphics used, and the rate of success using the Search facility within the site. These semi-structured interviews could be repeated in a similar format for all 6 interviews/tests, enabling the researcher to understand the informants’ perspectives and experiences as expressed in
their own words (Taylor and Bogden, as cited in Burns 2000). A funnel approach to questioning was utilized (Gardner 1976). At first broad questions were asked, such as “What do you think of this opening page?” This was followed by successively more restricted questions narrowing into precise objectives, for example, “What does this title Communities mean to you?” This approach provided the flexibility of informal interviewing but ensured all relevant areas of usability were discussed.

3.2. Questionnaire

Usability of the TKI site was analysed from the responses to 13 questions contained in a larger questionnaire of 44 questions sent to 1950 teachers in August 2001 (Appendix 1). These 13 questions were those that gave responses regarding navigation of the website. The remainder of the questions covered areas such as general Internet use, background knowledge of TKI, usage of TKI in regard to time spent on the site and within each area. The questions used have been highlighted in red within this appendix. The selection of 1950 teachers was computer generated from a list provided by the Teacher Registration Board from the total population of registered teachers in New Zealand. Because this good sampling frame was available, simple random sampling was used (Davidson & Tolich 2003). Half of the selection was taken from those registered as primary teachers, and half from those registered as secondary teachers. From this population a total of 500 replied, giving a response rate of 26 percent. This rate of reply is typical with mail responses where response rates of 20 – 30 percent are common. A response rate of around 30 percent is required for a high degree of accuracy (Neuman 2000). This sample of 500 gives the findings a margin of error
close to plus or minus four percent. Social researchers often accept a plus or minus five percent margin of error, hence this sample is well within the bounds of acceptability (Davidson and Tolich 2003). A higher proportion of the respondents taught at the primary level (53 percent) with 42 percent in the secondary sector, and five percent claiming both areas.

The delivery of this questionnaire followed most of the recommendations Neuman (2000) made to maximize the response rate of mail questionnaires. The questionnaire was addressed to specific people, rather than, for example, 'the occupant'. A covering letter was included, requesting co-operation, guaranteeing confidentiality, explaining the purpose of the survey and giving the researcher's name and phone number. (Appendix 2). Other recommendations were followed which included attaching a return envelope, providing a neat, attractive layout to the questionnaire; it was professionally printed with clear instructions; was not sent during holidays; and included an inducement (Neuman 2000).

Of the 13 questions examined in this research report, 9 were open ended. This type of questioning is particularly appropriate for measuring levels of satisfaction, in particular what people like best about a product or service, and what they like least (Fink and Kosecoff 1998). Although requiring complex coding by the researcher, the responses give a rich picture of the issue studied. The open-ended questions were able to provide the respondents with unprompted and unlimited response options, and the ability to give responses not thought of by the researchers (Davidson & Tolich 2003). Of the remaining four questions, two were of a binary choice format, one was multi choice, and one was a checklist question.
4. Results and discussion

The results from the usability tests and the questionnaire are discussed separately in this section. Although the two methods of finding the information are quite different, the focus on the usability of the website and navigation issues was the same for both.

Both methods found a user that was often frustrated with their ability to navigate through the TKI website. Some mentioned it was because they hadn't used it enough to know what to do, or where to go; but others felt issues of layout, headings, the search facility, and the speed of use, were detrimental to the usability of the website.

The results of the usability tests have been discussed under headings that arose from the interviewing. The results from the questionnaire are discussed under headings of navigation issues, which became apparent from analysis of the responses to the questions on this topic.

4.1. Usability tests

4.1.1. Layout and visual impact of the site, especially the opening page

N’s initial response was “I always think it’s great if you get to an opening page and you can see the whole thing without having to scroll down.” This was reiterated by the other participants, some of whom realised there was also information to be read if they scrolled to the right as well. Most, however, missed the horizontal scroll, but found it irritating to have to scroll
downwards through so much text. P made her way down through this page
twice; once looking at the material directly in her sight with the white
background, then a second time, looking down the yellow sidebar to the left.
N wondered at the necessity of having these two ways of presenting the
information on the one page: “Sometimes if there’s two different ways, do
you go down the page or do you look at the side menus? Are they taking you
to the same places? In which case, why have the two ways of looking at the
information?”

Linked with the physical scrolling issue was the abundance of information
presented on the Home Page. M found it “very busy...there’s just masses and
masses of stuff on it.” P wondered if it could all be presented in a slightly
simpler way, with a bit more impact to make you stop and read it. M was
keen to see main headings as in the Ministry of Education website, which
just lists the title of the page with a one line description. From there you
click on it for more information. Or, he thought, greater prominence could
be given to the headings down the side in the yellow, with clearer labelling.
P became philosophical about this issue and decided “you’d be a bit more
selective about what you looked at on the Home Page if you used it all the
time.” And indeed, B and ML were more discriminating in this area; ML
didn’t look at the Home Page at all but went straight into her search and
although B did look at it, he did it very quickly with the eyes of someone
who knew exactly what he wanted to read and where it was on the page.
4.1.2. Participants' comments on the headings and graphics used in TKI

M found the headings “rather vague.” To illustrate, he undertook a search for his interest in recent legislation in education. His first port of call was Hot Topics. It wasn’t immediately obvious to him, even after the Hot Topic screen came up, that this was not the right place to be looking. He was confused as to why there wasn’t a list of topics at the top of the screen, but once he realised he needed to scroll down, he was surprised to see topics that could be taught in the classroom. “I would of thought Hot Topics, even for teachers, could be a whole range of things, including policy issues that are in the news”, he lamented.

N went into Communities while she was browsing the website. When asked what she thought was in there, she said she had no idea. On further exploration she responded “what a strange name to give it.” B, a frequent user of TKI, said he would never have thought to look under Communities for some of the stuff that he wanted, but “once I got used to the vocabulary of it, I found it quite straightforward.”

N misinterpreted the Interact heading, guessing it was “interactive stuff you can do on-line.”

The kete got a favourable response from the participants who thought they looked great. Conversely though, M saw The School Daily.Com heading and thought it was probably something out of the States - I didn’t connect it with New Zealand news.”
4.1.3. Participants’ use of the Search facility

B, who uses TKI quite a lot, never uses Search. He knows where the information is and goes straight into Communities, Schools, TKI News, or the Home Page. L, who has used TKI only a bit, went into Communities, and from there clicked on the Health and Physical Education kete to search for her topic (Positive playground games) but there was no way of making the search specific and she was disappointed with her result. P used the search facility to try and locate a Harry Potter language unit and although her search didn’t come up with what she wanted, her search was quick. N also used the Search mechanism to look for her maths unit, as did ML who found it the easiest way to get to the resources. M confessed to being impatient, and decided that although he thought he could go into the Web Guide to find where to look for the legislation he wanted, he preferred to find his own way there. He tends to look at the Home Page first to see if there’s a link to get in directly, and then use the search later on if he can’t find what he’s looking for. After wrongly choosing Hot Topics to find his topic, he then chose Education News. From here he scrolled through to find the MOE website which he then went into.

4.1.4. Comments from the participants about the interface as they pursued their searches

As N looked for a Maths unit, she wasn’t successful at narrowing her search down to the right level. She put level 3 in the search area (#4) but it came up with everything that had the word “level” in it. Despite this, N thought the organisation of the Search page was good and liked being able to choose
several options. P, however, wasn’t so sure about the Search page and was often left wondering if she had done the right thing. She was unclear on what to do in the middle/second part of the screen. After doing a couple of searches in the Language Community, she tried to access a unit from the Health and Physical Education Community, but didn’t realise she was still in the Language Site. She found it a bit frustrating to have to remove the search information from the previous attempts before starting a new one. L found the level search not as accurate as she had hoped. She pressed ‘middle’ but got a Level 5 plan, which was too high. A plan that she was interested in was difficult to read on screen, but she thought she would probably print it out to see it better. While in the Health and Physical Education Community, L wanted to change into the Maths site, but was unable to find a Home button (she didn’t use the Back button).

N felt the Communities sites weren’t as well organised as they could be. She felt it was very frustrating to have to scroll down through lots of articles before she could see everything. This time factor would stop her from returning there in the future. She said she could see another way of displaying the information that she would find more user friendly, “it would be great if they could key word stuff at the top. It’s not good to bury the information so far down. That’s the thing with teachers, they haven’t got time to sit there and browse.”

B uses the Schools site quite a bit, and finds it quick and easy to access the information he requires. Rather than type in school names, he found it easier to log into the Canterbury section and then go into the Banks Peninsula district and from there he scrolled down through the lists. N also accessed
this site and really liked the layout of it with the graphical links. She wondered if it would work even better with an alphabet at the top to aid searching, or a search button, as she had to scroll a long way through to get to her chosen school. M found better use could be made of links from one site to another, at various points. While in the School Daily.Com site he found an education news page that he felt would have helped him in his search whilst in the Education News site. He also found that a link to the NZ Government website, and the NZ Education Review Office website from within the National Education News site would have been useful.

4.1.5. Search speed

M was sidetracked a lot during his search by other things that took his interest along the way. Near the end of the usability test with M, he went back to the Home Page and spotted the Search button. He said he would still be reluctant to use Search as he likes to look around the website first. L took almost four minutes to get a result from her first search, and claimed, “It’s not quick is it?” She felt it was slow, “but maybe it’s because I’m not a particularly highly qualified computer user. I use English Online frequently, and I find that really helpful, it’s really easy to use. It’s more confusing using TKI, it’s slower to get to where you want to go.”

On L’s second search for an algebra unit, it took her between five and six minutes to find a specific unit. Her search, however, was made through the Communities site, which has searches that are not as specific as the Search function. While looking through the Maths Community site she was sidetracked as she scrolled down through the articles, and this increased the time she spent on the search.
p was slightly quicker in finding what she was after. She made use of the Search button, and after a tentative attempt, her search was completed in about three minutes. Her further searches took only about a minute each. ML and B were both very quick in their searching, and although B did not use the Search at all, he had little trouble finding what he wanted. ML took only a few seconds to find 41 results under her search, but after spending a few minutes looking at the 8th entry she didn’t go back to look through the rest of the 33 entries either because she forgot, or because she felt she had seen enough.

M spent a lot of time searching for his topic, but mostly this was a result of his insistence on finding his own way there without the aid of the Search button. His first 10 minutes were spent looking through the Home Page, Hot Topics, and the TKI Newsletter before he found his way into the MOE website via Education News. He felt this would lead him in the right direction for recent education legislation. A considerable amount of time was spent ‘playing around’ in this site, looking at the Budget and the Times Educational Supplement website. His search consisted of about half an hour of dipping into different sites, and following different leads.

4.1.6. Summary

The usability tests raised several issues pertaining to the TKI website interface and navigation within it. These issues go some way to answer the research questions regarding to what extent the TKI site has navigation issues, and which features of the site participants found more or less friendly.
Firstly, participants were unhappy with the initial layout, which meant a great deal of scrolling was required through the information on the screen, particularly on the Home Page. The amount of information presented was felt to be a hindrance to its ease of use, and none of the participants stopped to read it all. They tended to skim down through the Home Page waiting for something to catch their eye. The users agreed that a simpler way of presenting the information could be provided - maybe with just headings that could be clicked on for further details.

The second navigational issue within the TKI website was that of speed. Users suggested that one-line headings, as on a contents page, would reduce the need for a lot of scrolling and would reduce the visual bombardment of information on the Home Page. Participants also recommended eliminating the information on the sidebars. This would make the Home Page more succinct and clearer to read at first glance.

The titles used as major headings within the site proved to be another stumbling block for the participants. Titles such as Hot Topics, Interact, and Communities misled participants when they searched for information. The subsequent confusion resulted in some negative feelings about the website. Immediate understanding of the site and its form would be enhanced by the use of simplified, less ambiguous or metaphoric headings.

In attempting to discover how the participants made their way through the site, it was found the Search facility was not used well. Participants were split in their use – some preferred to surf and follow promising leads, others knew their way in by using specific links, and others used the Communities’
Search facility. If this group of participants is typical, then all modes of searching need to be accommodated. Search through Communities was only partially successful by participants. The format was a little confusing for some of them. Searching, using the main Search facility, was not common with this group. This facility would be better served by being placed more prominently on each page. The Web Guide was also not favoured by users for finding their way around. Impatience meant going into a Web Guide was like admitting defeat, and the implication was that this method would stall searching even further. One participant felt greater use could be made of links from the obvious places within the TKI website. For this particular participant, his searching time would have been greatly reduced had there been more obvious links available.

The usability tests have gone some way to discover how usable participants found the website TKI. The website was shown to have some shortcomings regarding the flow of navigation. These, on the whole, pertained to its layout, the speed of use, the language used, and the Search facility. Because of these limitations, users were at times frustrated, confused, disappointed, thwarted in their searches, sidetracked, and become impatient.
4.2. Questionnaire

While the usability tests allowed research into the specific movements and
thoughts of the user while using the website, the questionnaire gave
respondents time to reflect on the usability of the website in their
professional lives.

This part of the report will look at the responses to the 13 particular
questions in the questionnaire that relate to user experience of the website, in
particular navigation issues. From the group of respondents, variables such
as gender, school type, and levels taught were generally similar to the
population of teachers in New Zealand.

Answers to the questionnaire highlighted a number of similar themes to
those highlighted by the usability tests. Navigation was a particular problem,
but people in the questionnaire blamed themselves for their lack of expertise,
to a greater extent than did the participants of the Usability Tests.
Only 15 percent of respondents found they were frequently able to access
information they wanted from TKI. Forty-eight percent found they could
‘usually’ access the information they wanted, while 21 percent were only
‘occasionally’ able to access information.

The low number of respondents who could frequently access information
from this particular website raises serious concerns as to its usability.
Of the respondents, almost a quarter felt their expectations of the website
were ‘not well met’. Just over half felt their expectations were ‘fairly well
met’. And another quarter felt their expectations were ‘very well met’.

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Of those who were impressed (Figure 1) navigation was not one of the elements that impressed them. Eighty-four percent (from a total of 120 answers) of those who were impressed attributed this to the content of the website; only 10 percent listed navigation as an area they were impressed with.
Time was listed as by far the greatest constraint to using the TKI website (Figure 2). The questionnaire does not define the sort of time constraints teachers had, but responses could include time to use the Internet, time to experiment, or time to learn more skills.

The content of TKI was not listed as a constraint (from a total of 356 answers), but again issues of navigation were. Not knowing what was in the TKI website, and not knowing how to navigate around within the website were equally constraining to users.

Of those who were disappointed with the website, navigation was highest on their list. Generally, the lack of user-friendliness of the site was blamed for most of the navigation problems. Such comments as “It’s frustrating, too laborious to access information, does not promote the content well” and
“finding resources is not immediately obvious” and “it’s difficult to find my way around,” were typical.

Many of the statements were not specific to any one facet of usability but they highlight the level of discontent users feel: “I have gone round and round and never found anything I wanted - or only once - it was an exercise in frustration.” Another said they were disappointed at the “efficiency of finding things quickly, that horrible feeling of going round in circles.” Another respondent explained, “It was not intuitive (for me) to find and search.” “If only finding ones way were simplified.” These comments are described more fully below under the heading of User Control – as they explain the general, but ultimately important, feelings users have when using this website.

Some of the respondents were able to expand and isolate the elements within the TKI interface that raised usability issues for them. From these responses several, more specific, aspects emerged which related to the interface itself: the search facility, speed, layout, and the language used. These are described in greater detail below.

Those commenting on navigation issues were not drawn from any one category of respondent. They were not more common from either gender, teacher level, or length of experience.
4.2.1. User control

The user fundamentally controls his/her navigation through the pages of the website. Without good site navigation tools, the user very soon becomes despondent and feels they lack the necessary control. The type of comment “seem to always get it wrong before finding what I want,” is evidence of this. The user often blames him/herself for getting it wrong - that they lack the skills to comprehend the site architecture. Amongst the suggestions given by TKI users and would-be users, the idea of professional development featured prominently. As one typical response stated, “The information is so vast, (I) guess I lack the skill to find what I want.” Many felt schools should be made aware of what is on the site, almost as something they should do compulsorily. Suggestions ranged from a one-hour staff meeting on TKI to “all teachers should be released to have a two day web tour for this site to maximize its potential.” At the very least, people wanted a hard copy outline of what the site includes. It came through almost as an expectation that teachers be given the information, personally, regarding the website - “I have been unaware of what TKI has to offer and would have appreciated knowing more about it.” People felt their expectations and use of the site would increase if they knew more. Making more of the TKI newsletter (via email) would be useful and wider use of web guide tutorials would enhance usage.

It also became clear in reading responses to the survey that the more people used TKI, the more they used it. That is, as they became more familiar with the site, the more confident they felt. They were “more aware of content, (its) wide range, it’s easier to use, (as I’m) more familiar with layout”. The
increase in confidence wasn’t necessarily just with TKI. As stated by one user, their use of TKI had increased because they “had become more au fait with (the) computer.” Muddling through for most though is not an option, especially when the result is not successful.

Teachers, as do other users, appreciate clear, easy to understand instructions, especially as that is how they themselves are trained to write. Users want to feel in control when using the site - this will bring them back for other visits. Many users felt they didn’t want to learn about TKI simply by using it.

As navigation was not immediately apparent to many users, this then is an issue for the developers of the site. Courses and hard copy information on site navigation would obviously be of great benefit to many users and would-be users. But if the site needs these directions to be useful then the developers need to address why users are finding it difficult to navigate. A number of navigation issues arose from the responses to the survey. They all greatly affect user control, to the extent that they are turning users away from the site. The four main aspects of navigation, as they affect user control, are Language Used, Search Facility, Layout, and Speed. Each of these is discussed below.

4.2.2. Language used

When users were asked about their specific difficulties, responses again surrounded navigation and user friendliness. The page headings were often mentioned, for example “difficulty navigating, sometimes found things under illogical headings”, and “headings are obscure, don’t always find what
you expect” and “not always sure what to click on, not sure what headings mean.”

One-word headings, although fitting better into the tab space, do not enhance usability. They tend, instead, to encourage the use of synonyms, which in the case of TKI are more metaphorical in meaning, than literal. To avoid misinterpretation and enhance user control, writers on the Internet should be very literal and describe each interface element for what it is, rather than trying to be overly clever or politically correct. Teachers, for example, do not speak of Communities in their day-to-day work - they talk of curriculum areas. News could be more clearly labeled Recent Publications, Interact to teachers means communicating together, but in TKI it means Post a Message. Schools could be clarified as School Details in Brief. Users need to know where things are to be found - clearly and easily. If it is not immediately obvious, then the tab heading, as a chapter heading in a book, should shed the light. The experience then may be coherent, intuitive and may even be pleasurable.

The inability of users to understand the meanings of some of the titles within the TKI website was also borne out when users were asked what they would find under certain headings. Most knew or made a good guess at what would be found on the Schools page. But based on this title, there were a number who made wrong assumptions, for example, “governance/ management issues”, “curriculum/assessment/resources”, “different initiatives”, “schools wanting e-pals”, “shared good ideas” and “vacancies” were some that were mentioned more than once and were incorrect. The content of information under the heading Communities was
incorrectly described by 20 percent of those who answered. Guesses ranged from “information on local school communities”, “information groups”, “others who have a shared interest in education and shared concerns”, “what communities are doing e.g. Pacific Islanders” to those who just couldn’t begin to guess – “don’t exactly know, can’t work it out.” Again, the title About led quite a few users astray. Fifty-five percent gave either the wrong description or admitted to having no idea. Of those who attempted a guess, but guessed incorrectly, answers ranged from “what’s happening about/around education”, “how to make resources”, “model exam questions and answers and gradings”, and “site navigation/ Home Page/ links”. Only 11 percent could correctly describe the Interact page as being a place where people could post messages. One can also e-mail TKI and subscribe to the TKI newsletter here. There are links provided to chat/ discussion groups around the world, but this page is not the place to “chat” with others as 26 percent of people concluded, based on its name. Others thought it must be “a Christian organization page”, or a place where one could find “interactive activities for students”. Ideas and expectations of the Shopping page were far in excess of what it offered. At the time of writing the questionnaire, only two items were posted on here, one a video, and the other a language media resource. Most expected to find books, curriculum and educational resources, teacher designed products, and promotional products, e.g. Learning Media.

In another test of the usability and clarity of headings within TKI, users were asked to say in which areas they would find specific things. Only 12 percent were able to give the correct tab heading, under which they could find the Times Education Supplement (TKI News). Twenty-eight percent said they
had no idea, eight percent guessed Communities, four percent said Interact, and 16 percent thought Search (which doesn’t take you there, but will bring up some articles from the Times Education Supplement). Sixty-eight percent of respondents either got it wrong or didn’t know where they would find Upcoming Science Events. One quarter of the respondents were unable to say where in the TKI website they would be able to find an e-mail address for a school. Seventy percent either didn’t know or guessed Schools, or Search, to find The New Zealand Education Gazette, which is found under News. Again Search doesn’t take you to The New Zealand Education Gazette specifically, but will bring up some articles.

4.2.3. Search

Most people (68 percent) who go into TKI are searching for something specific, with another 20 percent just browsing. When searching, 63 percent use the Search facility, with 32 percent searching by surfing, using promising links. The remainder tries both options. The Search facility, however, takes a bit of criticism from users of TKI.

On the whole, it was searching within the Communities area that created most of the negative responses, as people found it “difficult to use and long winded.” Another admitted: “sometimes I get lost when in curriculum area, list strand, list level, and then no result.” People felt there “needs to be a more straight forward way to search.” It became obvious from reading the responses to this survey that the successful usability of Search tends to be the make-or-break part of the website for many. Comments such as “I have only briefly used it and tried using search but couldn’t locate any
information”, “Only used it once - could not find what I was looking for,” exemplify this.

As users are mostly Search dominant, Search must be easily available from every single page on the site. Some users may click on the Search button immediately on the Home Page, but others may move around until they get lost, then frustration sets in as they search for the Search facility.

Confusion has also occurred because of the two different types of Search that exist within TKI. The main Search facility is limited in its scope, that is, it did not find the New Zealand Education Gazette, or the Times Education Supplement. To find those, the user is forced to go looking through the website unaided. The Communities Search, although trying to narrow down the specific search area, actually increases frustration by asking the user to input too much.

The Search within TKI would do better to be broader, and bring up all related topics to the search. In this way, the user has the control to flick through and decide for themselves between information that is useful and that which is not.

4.2.4. Layout

One of the greatest concerns mentioned by respondents, with regard to layout, was the sense that the site is too busy, “I find it very crowded, limit the icons/ pictures/ words – simplify” was a common response. Some found there to be too many words: “there’s a lot of reading for understanding in the
beginning”, “It needs to stop being all and reduce reading on pages.” Because of this perceived overload of information one respondent felt “it becomes a surfing spot rather than a particular support mechanism.”

Many users felt there was a need for an index of some description on the Home Page that would help present the information better. People claimed, “I don’t know the whole site,” and mentioned having a Site Map or overview would help them navigate better. One suggested “it needs to be broken down into more specific areas and with a key to links from the front page to each area, to the specific content.”

Another even felt that TKI should “separate the functions into single purpose sites”; such is the perceived amount of information overload within this one site. Within this theme it was also suggested there were too many screens to pass through “you have to click through too many pages to get to where you want to be.”

Another layout issue highlighted was the use of colour, “tone down the orange – it’s unpleasant”, “layout was initially confusing and overly orange”, and “the colour theme is not very uplifting.” One respondent asked TKI to “drop the pretty stuff and keep it simple.”

The small onscreen print was also mentioned as a disappointment. It needs to be “less cluttered with larger print so I can read it,” according to a respondent.

Overall comments reflect a typical user who is not prepared to browse
through a lot of screens or text on the way to finding what they want. The sheer amount of information in TKI is formidable and confusing to many, and a clear and consist layout is needed. Users have found it hard to get the big picture, and for this reason many mentioned needing a site map or directory.

Although most users are search dominant, design must still be grounded in a strong sense of structure and with strong navigation. All pages must make it clear where they fit in the larger scheme of the site. There needs to be support for users who don’t like Search or who belong to the mixed behaviour group. Those who do use Search still need to understand the relationship of the page they have retrieved to the rest of the site.

4.2.5. Speed

The issue of speed, more than most of the issues described in this report, evoked a great number of emotive responses. Many users of the Internet expect instant answers and are often left frustrated; teachers are certainly no different. Users don’t expect to have to spend a lot of time obtaining information from the Internet, as the Internet itself is synonymous with quick and easy accessibility.

It has become clear from the questionnaire responses that users were not prepared to be involved in something time consuming, especially when they have to work through superfluous interface, such as too much text to scroll through on the Home Page. The Internet it seems should be, by its very nature, time saving, rather than time wasting. But comments such as “It’s
slow - designed to look good and not allow rapid access, stop the political correctness and organise it better” abound.

Speed of using the website, whether it is loading, moving around within it, or downloading, are all mentioned by respondents as factors hindering its usability.

Comments such as “it takes a long time to get where you want” and “driven me mad with its slowness” express the importance of speed to many of the users of TKI. Some tended to dismiss the site after loosing patience with it: “only time I used it, it was painfully slow”, “took too long to download, gave up and used other sites.”

Another spoke for the rural teachers: “Here in the Far North real download speeds are 3Kb/sec. t best and 15 inch video monitors are common. So please try using the site with these facilities.”

Looking particularly at the Research Questions posed for this investigation, the questionnaire has raised particular concerns regarding the usability of the website TKI. The majority of users were not able to access the information they wanted ‘frequently’. Navigation issues topped the list of disappointments. Not knowing where to find things was a definite navigation problem, as were the features of the site, such as headings used, the search facility, as well as layout.
5. Conclusion

The prediction that the Internet will permeate our lives is already a reality for many people. The expectation that teachers will find it useful have been high, especially when the very isolating nature of classroom teaching, and especially that of rural teachers, is taken into consideration. But it is questionable whether use in practice is as high as many expected. The ideals of TKI are fairly universal. TKI operates as a central connecting point giving New Zealand teachers access to educational materials. The emphasis is on locally developed lesson materials and models of successful practice in many of the curriculum areas. The use of this medium in this way has the support of many in theory (Lai, 1996) as it provides the ability for teachers to network and empower themselves with the skills and knowledge they need in their teaching profession. And indeed there are many, including Gates (1995) himself, who predicted the benefits to the education sector, and prophesised the value of sharing of teaching material worldwide.

This research report has highlighted the need for clear and easy to follow navigation routes within websites. The TKI questionnaire revealed only 15 percent of users being able to ‘frequently’ access information from its site. Navigation did not rate highly as part of the website that impresses users. It was highest on the list of disappointments, and lowest on the list of what impressed users. As a constraint to use, navigation again rated highly.

As a factor influencing user control, good navigation is a priority. Interestingly, from the usability tests, and the survey responses, respondents
often blamed themselves and their lack of skill for being unsuccessful in finding the information they were looking for. The results from this study found many users requesting outside help to navigate successfully around the site and, as a consequence, many suggested Professional Development for the school's whole staff as well as hard copy directions. These results are similar to those outlined in a recent ERO (2001) report which found that more than one third of teachers felt their skills and confidence were a barrier to their successful use of ICT. Ham and Wenmoth (2001) found that most visitors to TKI are infrequent users; only a small number visit often and stay for a while. Research into other Internet usage (Davey 2001, Learning Centre Trust 2001, Rowland 2000a, Becker 1999) show a similarly low use of the Internet for professional development purposes.


User control is the linchpin; it is the pivotal element in the usability of a website. All other features affect it. This study found widespread comments reflecting a lack of user control. Many respondents to the questionnaire wanted more information about the website, from hardcopy directions on its usage, to tutorials, to whole day professional development days on how to use the website. This, in itself, reflects rather badly on the site architecture. To be useful as a website, the user should not need a great deal of
instruction, the site should speak for itself. The low levels of confidence, and or skill, of the users needs to be taken into consideration by those preparing and managing the website, and clarity of use needs to be at the forefront of its design.

Specific elements of the TKI website interface have been shown to stall successful navigation. The usability tests and the questionnaire results pinpointed the Search facility, the language used in title headings, the speed of locating specific information, and the layout, as affecting the user-friendliness of this particular website. All these factors influence user control and therefore impact on the users’ feelings of wanting to repeat their experience within this website. For many the experience was a negative one, which has prompted further analysis into the specific parts of these elements that need to be improved to enhance user control of the site.

Although 63 percent of TKI users use the Search option, there are still almost one third of users surfing, by using promising links within TKI. These findings are consistent with Nielsen’s (2000a) findings, where slightly more than half of users are Search dominant. The usability tests revealed a similar picture; some users preferred to go straight into one area, avoiding everything else, and others preferred to browse around to get a feel for the site and some sense of accomplishment at having found what they wanted under their own sense of navigation and control.

The Search facility, though, was not well thought of by either group. People wanted the facility to be simpler to use, as well as easier to find on the screen. Researchers such as Nielsen (2000a) who have studied this area
found that a Search Box is best, and that it needs to be readily accessible on every screen.

Metaphorical language was a constraint on navigation both within the usability tests, and for the survey respondents. The inability of users to understand the meanings of some of the titles meant they could not predict what information could be located within that particular area, or conversely, in which area they would look for particular information.

Many researchers have reported similar findings. Users simply won’t find their way around the architecture if they can’t understand the descriptive labels and other terminology. As Garrett (2003) found, the more diverse the range of content and functionality a site offers, the less reliable the guesses at the metaphors (used to describe the functions) become. To avoid the guesswork, TKI needs to avoid metaphorical language altogether. In the case of the university site testing (Corry et al. 1997) users skipped over valuable resources because they didn’t know what the titles meant. These studies show the TKI website to be not dissimilar to others in its problems.

L’s comment that “it’s not fast is it?” in the usability test, was reiterated many times within the survey results. The impatience expressed by our selection of teachers is not unique to this sector of the population. As Nielsen (2000) also found, users are remarkably impatient and insist on instant gratification. Speed is a huge issue in site navigation, and has been found to be strongly related to how much is on each page. People are not happy to scroll through screeds of information and are put off coming back to the website if they can’t quickly get to where they want to go (Graham et
al. 2001). This was confirmed by our own study of TKI users. In the usability tests, in particular, many respondents spoke of their dislike of too much information on one page. Whether the page required sideways or downward scrolling, it was not well received. As documented in the usability tests, scrolling through lots of information delayed search success for more than one user. Scrolling wasn’t pin pointed so much as a specific issue within the questionnaire responses; comments were more related to the proliferation of information on any one page as being a constraint.

Many users requested an index to TKI, as they felt it might help them better navigate through the information. A site map is not a new concept and for large websites (such as TKI), Garrett (2003) recommends their use.

Not all users are Search dominant. For those that like to surf, or find their way through the site using useful links, the site map would become something to which they could refer. Those who do use Search and who are transported to a place within the site that has no surrounding landmarks would also find it useful. That is, the user has no idea where they have arrived at and where it sits within the site as a whole.

None of the navigation issues found within the TKI usability tests or questionnaire results are new or unique to this particular website. This should be reassuring for those producing TKI, as the problems are identifiable and solvable. That they are, however, recognised as problems hindering successful navigation is fundamental to the usability of this website.
In a world driven by the flow of information, the interfaces – and the underlying code – that make information visible are becoming enormously powerful social forces. Understanding their strengths and limitations, and even participating in the creation of better tools, should be an important part of being an involved citizen. These tools affect our lives as much as laws do, and we should subject them to a similar democratic scrutiny. Shapiro et al. (1998) (p.27)

"While anyone can legitimately question the opinion of professionals, it takes real nerve to suggest that the intended users of the site don't know what they need". Wakeman (2001) (para. 10)
6. References


http://www.gotomedia.com/iceland/usability


NATIONAL SURVEY OF TEACHERS’ USE
OF THE INTERNET FOR PROFESSIONAL PURPOSES

PART 1: DEMOGRAPHIC DATA

1. Gender
   o Male
   o Female

2. Years of teaching experience:
   o 0-5
   o 6-10
   o 11-15
   o 16+
   o Not currently teaching
   o N/A

3. Level(s) of school you teach/work at
   o Primary
   o Secondary
   o Intermediate
   o Other ______________

4. School type
   o Intermediate
   o Contributing primary
   o Full primary
   o Secondary
   o Composite/area school

5. What is the language of instruction in your school?
   o Maori
   o English
   o Bilingual (Maori/English)
   o Other (describe) ______________

6. Which of the following best describes your role? Tick one only.
   o ICT facilitator in one of the 23 ICTPD cluster schools
   o Teacher in one of the 23 ICTPD cluster schools
   o ICT facilitator in one of the 28 ICTPD cluster schools
   o Teacher in one of the 28 ICTPD cluster schools
   o School principal/teaching principal
   o Teacher
   o Other ______________
PART 2: GENERAL INTERNET USAGE

7. For what purpose do you use the internet?
   - Don’t use it at all
   - Private use
   - Professional use

8. From where do you mostly access the internet for professional purposes? Tick one
   - Home
   - School
   - Classroom
   - School library
   - Teacher Resource Room
   - Other

9. How do you rate the ease of access to the internet from the following places?

<table>
<thead>
<tr>
<th>Place</th>
<th>No access</th>
<th>Not good access</th>
<th>Good access</th>
<th>Excellent access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>School</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Classroom</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>School library</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Teacher Resource Room</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you don’t use the internet, go on to Qu. 12 (Resources)

10. In the past year how often would you have used the internet for professional use?
    - Daily
    - A few times a week
    - Once a week
    - Once a fortnight
    - Once a month
    - Less than once a month
11. What sites have you found most useful professionally? Please list up to 4 sites:
1. 
2. 
3. 
4. 

12. Where do you get most of your teaching resources from?

<table>
<thead>
<tr>
<th>Resource</th>
<th>Not at all</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>School resource room</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own books</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library books</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College of Education, or similar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syndicate planning &amp; brainstorming</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Various sites on the internet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Te Kete Ipurangi Website</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other, please state</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. How often do you keep in touch with educational news and events using the following?

<table>
<thead>
<tr>
<th>Source</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ Education Gazette</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TKI Website</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other web sites, please state</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education Review</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education Today</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Media</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NZCER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Ministry Publications, please state</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PART 3: TKI BACKGROUND

14. Did you know, before now, about the website Te Kete Ipurangi?
   ○ Yes ○ No

15. Have you ever accessed Te Kete Ipurangi?
   ○ Yes ○ No

If you answered YES to Qu.14 but NO to Qu.15, give your reasons for not having accessed this website:

__________________________________________________________________________

If you answered NO to Qu.15, you have now completed this questionnaire. Thank you for your invaluable help. Please post this back to us in the envelope provided as soon as possible. (Don't forget the competition form!)

If you answered YES to Qu.15, please continue on.

16. How did you come to know of TKI's existence?
   ○ Publications from the Ministry of Education
   ○ A conference
   ○ Subject Teacher Associations
   ○ Advisors
   ○ Other teachers
   ○ Other sources, please state

17. What do you know about TKI?

__________________________________________________________________________

18. Have you or your school taken part in a webguide tutorial with TKI?
   ○ Yes ○ No

Comment:

__________________________________________________________________________
PART 4: TKI USAGE

For this section we are comparing statistics collated from the Year 2000 survey of usage, to the usage over the past year.
Your answers should, unless otherwise stated, give an indication of your usage for the past year only.

19. When you visit the site, which language do you usually choose to read it in?
   ○ Maori
   ○ English

20. If you have used TKI for the two years it has been running, state any differences in usage over the two years, (e.g. has your usage increased or decreased?) and give possible reasons:

21. What improvements have you found from the first years site to the second years site?

22. How often have you visited the following sections within TKI?

<table>
<thead>
<tr>
<th>Section</th>
<th>Not at all</th>
<th>Less than once a week</th>
<th>1-2 times a week</th>
<th>3-6 times a week</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Search</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(b) School</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(c) Interact</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(d) Shopping</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(e) News</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(f) About</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(g) Newsletter</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(h) Message Board</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(i) Glimpse of the Future</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(j) What's On The Box</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(k) Hot Topics</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(l) Web Guides</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(m) Communities</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(n) Private Areas/Commsuites</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
</tbody>
</table>
23. Within the Communities section, how often have you looked at the following?

<table>
<thead>
<tr>
<th>(a) Governing and Managing Schools</th>
<th>Not at all</th>
<th>Less than once a week</th>
<th>1-2 times a week</th>
<th>3-6 times a week</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) Health and Physical Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Language and Languages</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>(d) Mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(f) Social Studies</td>
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<td></td>
</tr>
<tr>
<td>(g) Technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(h) The Arts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Maori Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(j) Gifted and Talented</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(k) NESB</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>(l) NCEA</td>
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<td></td>
<td></td>
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<tr>
<td>(m) Digital Opportunities</td>
<td></td>
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<tr>
<td>(n) Assessment</td>
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<tr>
<td>(o) ICT</td>
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<tr>
<td>(p) Literacy and Numeracy</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(q) School Innovation</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(r) Curriculum Stocktake</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(s) Curriculum Integration</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

24. How useful have you found the following sections of the TKI site?

<table>
<thead>
<tr>
<th>(a) Search</th>
<th>Not at all useful</th>
<th>Sometimes useful</th>
<th>Useful</th>
<th>Very useful</th>
<th>Extremely useful</th>
<th>Never accessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) School</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Interact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) Shopping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) News</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(f) About</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(g) Newsletter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(h) Message Board</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Glimpse of the Future</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

24. How useful have you found the following sections of the TKI site? (continued)

<table>
<thead>
<tr>
<th>(j) What’s On The Box</th>
<th>Not at all useful</th>
<th>Sometimes useful</th>
<th>Useful</th>
<th>Very useful</th>
<th>Extremely useful</th>
<th>Never accessed</th>
</tr>
</thead>
</table>

Page 6 of 6
25. Within the Communities page, how useful have you found the following?

<table>
<thead>
<tr>
<th></th>
<th>Not at all useful</th>
<th>Sometimes useful</th>
<th>Useful</th>
<th>Very useful</th>
<th>Extremely useful</th>
<th>Never accessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Governing &amp; Managing Schools</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>(b) Health &amp; Physical Ed.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>(c) Language &amp; Languages</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>(d) Mathematics</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>(e) Science</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>(f) Social Studies</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>(g) Technology</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>(h) The Arts</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>(i) Maori Education</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>(j) Gifted and Talented</td>
<td>O</td>
<td>O</td>
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<tr>
<td>(k) NESB</td>
<td>O</td>
<td>O</td>
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<tr>
<td>(l) NCEA</td>
<td>O</td>
<td>O</td>
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<tr>
<td>(m) Digital Opportunities</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>(n) Assessment</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>(o) ICT</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>(p) Literacy &amp; Numeracy</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>(q) School Innovation</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>(r) Curriculum Stocktake</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<td>O</td>
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<tr>
<td>(s) Curriculum Integration</td>
<td>O</td>
<td>O</td>
<td>O</td>
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</tr>
</tbody>
</table>
26. How often have you used TKI for each of the following purposes?  

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) A source of teaching materials and resources</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(b) A source of online projects for students</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(c) A way of keeping abreast of ICT developments in NZ</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(d) A way of keeping abreast of educational issues and developments in NZ</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(e) For professional development purposes</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(f) A forum for the exchange of ideas with other educators</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>(g) Other, please state</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
</tbody>
</table>

27. How long would you estimate you spend online whenever you access Te Kete Ipurangi? (Please provide an estimate of a minimum and a maximum time you have been online at the site on any one occasion, and a rough estimate of an overall average - in minutes)

Minimum number of minutes in a session:  
Maximum number of minutes in a session:  
Overall average number of minutes per session:  

28. What things (if any) constrain your use of TKI?  

- o Time  
- o Lack of access to internet  
- o Haven’t known what is in this website  
- o Haven’t known where to find specific things within the website  
- o It doesn’t have anything I want on it  
- o Other, please state:  

29. Have you ever posted a message on TKI? (not including Commsuite)  

- o Yes  
- o No  

30. If you have posted a message, which subject did it concern?  

31. Have you ever contacted anyone who has posted a message on TKI?  

- o Yes  
- o No  

32. How well have your expectations of TKI been met?
33. List which parts of the site you have been most impressed with:

34. List any parts of the site you have been disappointed with:

35. List 2-3 resources you have sourced from TKI that have been useful in enhancing the learning outcomes in your classroom:

36. In what ways has learning been enhanced as a result of resources obtained from TKI?
   - Improved enthusiasm
   - Better test scores
   - Greater keenness of students to participate
   - Improved attitude from students
   - Other. please state:______________________________

PART 5: TKI NAVIGATION

37. When you visit the TKI website, are you usually looking for something specific, or are you browsing?
   - Specific search
   - Browsing

38. How do you usually search?
   - By using the search option
   - By surfing, using promising links

39. How easy has it been to access the information you want?
   - Frequently able to access information
   - Usually able to access information
   - Occasionally able to access information
   - Never able to access information

40. What sorts of information would you expect to find in each of the following sections?
    Schools:______________________________
    Communities:__________________________
    Interact:______________________________
    News:______________________________
    About:______________________________
Shopping: 
Search: 

41. In which section of the TKI site would you find the following?
The Times Educational Supplement: 
Up coming Science events: 
An e-mail address for a school: 
The NZ Education Gazette: 

42. If you have had any difficulties finding what you wanted, describe what they were: 

43. What suggestions can you make for improvement or further development, which would make this site more useful?

44. Other Comments: 

Thank you for taking the time to complete this questionnaire. You responses will be extremely valuable to the ongoing development of this website.

Please forward your questionnaire and competition form to us, using the envelope provided, by August 31

Any questions regarding this survey, send to:
Dr. Vince Ham
Christchurch College of Education
P O Box 31 065
Christchurch
e-mail: vince.ham@cce.ac.nz
TEACHERS’ USE OF THE INTERNET
NATIONAL SURVEY

You have been randomly selected
to take part in a survey of teachers about their use of the Internet, and especially
Te Kete Ipurangi (TKI), the Ministry of Education’s main website for teachers.

Whether you do or do not use the internet for professional purposes your
response is still very valuable to us

Background to the Survey
This survey originates from a desire by the Ministry of Education to know how much teachers
make use of the Internet, and in particular the Ministry’s Website Te Kete Ipurangi. Te Kete
Ipurangi has been up and running for 2 years, and the Ministry would like to receive feedback
from you, the intended users. We want to know if you use the Internet and TKI, why you use
it and what you think of it as a professional resource.

It should take 10-15 minutes to fill in. Thank you for your contribution.

This is an anonymous questionnaire. If you wish to enter our competition, complete the form
below and send it back with the completed questionnaire by the due date (prepaid envelope
enclosed). A person not involved in this research will divide the questionnaires and
competition forms and no attempt will be made to identify the responses.

The data collected will be aggregated for statistical purposes. Any published quotations from
the responses will be used for exemplary purposes only and will be unattributable. Responses
will be kept securely at the Christchurch College of Education and destroyed at the end of the study.

The selection of teachers and distribution of the questionnaire is being conducted by the
Teacher Registration Board on behalf of the research team in order to assure your anonymity
and privacy.

WIN!
I WISH TO GO IN THE DRAW TO WIN ONE OF 4 CD VOUCHERS
(CUT OFF THIS FORM AND SEND BACK WITH THE COMPLETED QUESTIONNAIRE )

BY SEPTEMBER 10

Name:

Contact Phone No: