Assessment Tools for Teaching and Learning Technical Report # 47

Use of asTTle in Secondary Schools: Evaluation of

the Pilot Release of asTTle V3

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Submitted by the Assessment Tools for Teaching and Learning team,

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Use of asTTle in Secondary Schools: Evaluation of the Pilot Release of

asTTle V3

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asTTle Version 3 was delivered to the Ministry of Education in December 2003. It contained new features and new materials for the assessment of mathematics and pangarau up to Level 6 and norms for students in these subjects for Years 4 to 12. As this was the first major use of asTTle in secondary schools, it was decided that an evaluative study should be conducted among secondary school users. To that end, a request for participants in the study was issued in late 2003 in *The Education Gazette* (Appendix A). A total of 55 schools from across the country agreed to use asTTle (i.e., at a minimum, create one test, administer, score, and inspect the various generated reports) and provide feedback to the asTTle development team such that feedback could be incorporated into the design of asTTle V4 and any other future versions of asTTle.

Of specific interest to the Ministry and the asTTle team was feedback as to obstacles, benefits, and potential uses in the secondary school context. Further, insight into educational needs not being currently met by asTTle V3 was possible. Additionally, the team wanted to experiment with a variety of methods of communicating support and professional development within the contexts of secondary school, leading to recommendations about

future delivery mechanisms. This report describes methods used to obtain evaluative

feedback and reports findings thematically across all methods. It concludes with

recommendations for asTTle V4, future versions of asTTle, and professional development

and support methods and priorities.

Method

asTTle V3 disks were distributed to schools during the second half of March, 2004 and all

data were collected from that time through to the end of June. The total opportunity schools

had to install, disseminate, use, and consider asTTle V3 before data were collected was

restricted to no more than 12 working school weeks. Further, schools may not have made as

extensive use of asTTle as they might have done in the second half of the school year when

end-of-year assessment and reporting and when entry-to-school activities are more likely to

be conducted. Feedback was received about factors outside the control of asTTle that have

impacted on the uptake of asTTle by teachers in the pilot secondary schools. Such factors

included staff turnover, photocopying costs, conflicting examination timetables, and late

arrival of the asTTle . These were identified by a total of 11 different institutions as hindering

their participation in the evaluation.

Feedback data about asTTle V3 were obtained through five methods: an electronic

discussion forum; a questionnaire; telephone interviews; focus groups, and field visits.

Multiple methods were required to enable rich feedback and multiple opportunities for

participants to provide their feedback. The relative success of each method may also

provide guidance to asTTle professional development providers as to effective support

mechanisms.

Electronic Discussion Forum. Given the electronic nature of asTTle, it was decided

to provide a cyber mechanism for eliciting feedback and to encourage user peer support or

interaction. An online discussion forum (a Yahoo Group) was created and moderated by

asTTle team members. Invitations to join and complete instructions were sent to all

nominated contact people at each school by both post and electronic mail. This attracted a

total of 51 postings and 18 members from about a dozen schools. Nevertheless, partly

through effective conversation starters, some interesting inter-member dialogue and debate

took place.

Questionnaire. Given that asTTle was being introduced into the secondary school

sector, where teachers have responsibility for the monitoring, reporting, and recording of

student learning vis a vis the National Qualifications Framework, it was decided to elicit

feedback as to the suitability of asTTle V3 features and functions relative to those

responsibilities. To that end, participants were asked in the questionnaire the degree to which

current asTTle V3 features were helpful to their work related to National Qualifications

assessment, reporting, and monitoring. Further, they were asked the relative importance,

using the Must, Should, Could, and Would (MoSCoW) priority rating schema, of a range of

new features not currently in asTTle . A total of 200 questionnaires (see Appendix B for

frequency results of V3 Evaluation questionnaire) were sent out in Term 2 to the 55 schools.

After sending out a reminder to each school about 75 responses were returned from 32

identified schools. This represents a response rate of about 60% of schools; however, it

should be noted that a much higher proportion of schools provided data when all methods of

data collection are combined. Data were received from 36 Heads or Assistant Heads of

Department, 26 teachers, and 12 others. Only eight had taught less than two years in New

Zealand, 11 up to five years, 13 between six and 10 years, and 41 had taught more than 10

years. Respondents were nearly evenly balanced between female ($n = 42$) and male ($n = 31$).

The majority were New Zealand European or Pakeha ($n = 55$), with two Maori, five Pasifika,

two Asian, and nine other ethnicities identified. These demographic characteristics appear to

be reasonably representative of the ethnic, gender, and experience mix of the New Zealand

secondary school teaching population (Statistics New Zealand, 2003). The role responsibility of participants indicates that the opinions expressed are somewhat skewed to the views of middle managers.

In the questionnaire, teachers were asked to identify how helpful various current features of asTTle V3 were relative to their responsibilities related to the National Qualifications Framework. Teachers were offered six choices ranging from *not at all helpful* to *extensively helpful*. Given the tendency for respondents to see any feature as some sort of help, it was considered that summing the two highest categories ('*a lot helpful*' and '*extensively helpful*') would produce the clearest insight into secondary teachers' evaluation of asTTle V3 features.

In the questionnaire, teachers were asked to prioritise various possible new developments of asTTle in terms of their relative priority to teachers' work around the National Qualifications Framework. Teachers were asked to rate using the MoSCoW principle used throughout the asTTle ICT development processes. This required teachers to use a scale where *MUST* meant that a feature was extremely important and that the participant wished that it already existed, and that it should be implemented first of all. *SHOULD* meant that the feature was important and needed soon, but only after the MUSTS were done. *COULD* meant that the feature was somewhat important, but it could wait until the MUSTS and SHOULDS were done. *WOULD* meant that the feature would be useful and nice to have, but that the participants would be happy with asTTle even if it never got implemented. A *NO* meant that the participant did not want this feature no matter how much time or money were available. Participants were reminded that it was NOT possible for all statements to be MUST, and requested to identify their true priorities. Because mean scores for each possible requirement fell in a narrow range (2.5 to 3.5) it is more meaningful to look at the modal score.

Telephone Interviews & Emails. To ensure as wide a coverage as possible, the asTTle team attempted to speak with the nominated contact person of every school by initiating phone calls. Through multiple call backs to all the schools, 45 of the 55 school contact people were located and interviewed, and extensive comments were made by over 35 of the schools. In addition, a number of issues in this report were recorded as they were phoned in by schools.

Focus Groups. Thus, the asTTle team initiated three focus groups within the Auckland region which resulted in 19 teachers from 12 schools participating. These groups were presented with semi-structured environments which allowed them to express their current concerns and also react to draft mock-ups of potential new features that related to how asTTle might be able to assist teachers with National Qualifications Framework responsibilities (Appendix C). The mock-ups include (1) a potential revised layout of items to reflect the NCEA ordering of items in terms of achievement standard and grades, (2) a potential asTTle report selection option to select NCEA equivalences, (3) a potential revised Console Report indexed against NCEA Achievement Standards and grades, (4) a potential NCEA grades report based on the current Curriculum Levels report, (5) a potential aggregate NCEA grades report based on the Group Learning Pathways report, and (6) a potential Individual Learning Pathways Report for NCEA grades and Achievement Standards. Additionally, a card sort priority setting activity was conducted using statements taken from the questionnaire. This required participants to sort among the possible enhancements to determine an order of priority or preference in future versions of asTTle.

Field Visits. Feedback throughout the period indicated that two large secondary schools were having considerable issues in the implementation of asTTle V3. This triggered field visits to these two Auckland schools in order to investigate and remediate where possible. In both cases, issues revolved around the ICT dimensions of asTTle and school

management systems. More importantly, it can be reported that the asTTle team were successful in identifying the problems and correcting those that could be resolved on the spot. The issues will be detailed below. Feedback to school management system providers was provided and it is expected that these issue will be addressed.

Given the largely qualitative feedback generated by these multiple mechanisms, content analysis of the substance of each participant's comments was conducted. Content was summarised across the various data collection methods and counted to assist in interpretation. It is worth noting that through these various data collection routines, many of the same issues have been identified. This gives confidence that the issues identified represent a reasonably comprehensive consensus about asTTle development issues. These issues have been referred to the asTTle development priority setting processes.

Findings

Results were identified around the following topics: current uses and benefits, information and communications technology, asTTle test creation and reporting functionality, professional development and support, and National Qualifications Framework.

Positives and Current Uses

Test Creation. Teachers have reported that the asTTle test creation functions gave them much benefit and control. Specifically, the ability to preview the test before administration ($n = 48$), to create tests by choosing curriculum level(s) difficulty ($n = 43$), to identify teaching priorities based on students' strengths or weaknesses ($n = 42$), to create tests by choosing the curriculum strand(s) ($n = 40$), and to preview the answers ($n = 32$) were highly rated by questionnaire respondents. A Year 1-8 school reported that the "*length of tests seem to be right for children's attention span*". Further, teachers in the questionnaire indicated that the fit of the asTTle test created to their students' opportunity to learn the

material contained in the test was good (i.e., **1** *Very Poorly;* **1** *Poorly;* **26** *Adequate;* **20** *Well;* **4** *Very Well*). No comment or explanation for the low ratings was provided.

Teachers have commented positively about the amount of time saved in creating tests for classroom use. One common process of assembling a test involves photocopying previously printed test questions, cutting them up, and pasting them into a new photocopy master. Alternatively, teachers write up by hand new items that have to be typed onto a photocopy master. The asTTle test creation process produces a photocopy ready master document in less than 10 minutes; a significant benefit to any teacher.

Some positive use of the asTTle curriculum maps was reported (*n* = 11) on the questionnaire. This information, which is in the manuals and technical reports, provides details about the sequence and organisation of curriculum objectives underlying the teacher controlled selections of content and difficulty. It may be useful to provide easier access to this information as asTTle V4 extends four new subjects (i.e., reading, writing, panui, and tuhituhi) into curriculum levels 5 and 6.

asTTle Reporting. Teachers were positive about the asTTle reports. Participants indicated that the amount of detail on reports was good and that the reports were very relevant to their needs. The ability to report performance to parents, colleagues, or students was considered of significant benefit (e.g., 24 teachers in the questionnaire indicated this was high). As was intended from the asTTle design, teachers reported in the questionnaire, significant help from the formative and diagnostic reporting functions at both aggregated and disaggregated levels of reporting; that is, analyse the pattern of strengths and gaps of students using the *Group Learning Pathways Report* (*n* = 36) and the *Individual Learning Pathways Report* (*n* = 35) at the curriculum achievement objective level using the *Individual Learning Pathways* and *Group Learning Pathways* reports (*n* = 27) were considered beneficial. In addition, participants found benefit from the supposed-summative interpretations of

aggregated data by seeing students' curriculum level performance using the *Tabular Report* ($n = 31$) and the *Curriculum Levels Report* ($n = 31$), and comparing students with NZ norms using the *Console Report* ($n = 27$). At this stage of use, teachers reported relatively low use from the ability to select sub-groups for comparison using the *NZ Comparisons* option ($n = 17$).

Teachers have reacted positively to the reporting changes on the Console Report introduced in asTTle V3. The use of the box-and-whisker plots was seen as a good step forward in displaying not just the centre but also the distribution of scores within a group. That asTTle V3 reported students against norms for years 4 through 12, without having to convert the student year to the range 5 to 7, was seen as a big improvement. The display of the norm score as a coloured field within the gauges instead of as a number below the gauge was also seen as an enhancement. The extension of asTTle content, both within the assessment materials and the What Next web site, to Levels 5 and 6 of the Mathematics curriculum was also welcomed.

What Next. Teachers in the questionnaire and focus groups found the ability to access teaching resources for curriculum levels using the *What Next* web site ($n = 24$) of benefit. Increase in use of the What Next site will no doubt increase as new materials are incorporated for literacy in asTTle V4 and as teachers further extend their usage of asTTle or identify curriculum content at the appropriate difficulty levels for which they do not currently have adequate resourcing. In two of the focus groups, teachers requested the continuation and extension of teaching as well as classroom resources within the What Next web site.

Uses of asTTle V3. Teachers reported an interesting range of current uses of asTTle V3. Most secondary schools involved in the focus groups reported using asTTle for entry testing of Year 8 students coming into Year 9. They indicated that the most useful of the various asTTle scores was the overall subject score rather than the various content or

cognitive or attitude scores. At this point of a student's schooling, the school was not overly

interested in a detailed report that highlights an individual student's complete strengths and

weaknesses. Such full analysis would, in any event, require about three separate 40-minute

asTTle tests within any one subject, and that is not feasible on entry. Thus, the Console

Reports were used for big picture analysis.

Another school reported use of asTTle data in RTLB case conferences when working

with individual students to analyse and develop IEP profiles. Another school that has been

using asTTle since V1, indicated that the reporting functions for individuals and classes were

very useful for teachers particularly when conferencing with children and parents because

they highlight strengths and gaps. This school also reported using the ILP Reports for

individual goal setting. The same school reported using the reports to identify objectives that

merited for further teaching, and then using asTTle to determine whether progress had been

made in a post-test. Further, the school reported using the attitude survey results as an

indicator of children who may be at risk of failing. This school also used the asTTle levels

reports within the context of end-of-year written reports to parents.

Two clusters of secondary schools reported extensive sharing of asTTle data within

the schools to monitor area wide trends and the effectiveness of initiatives within the cluster.

The use of different and common tests has been reported and the advantage of a common

reporting scale has been highlighted when schools produce varying tests within a subject.

While these clusters are operating horizontal data sharing, there is evidence of other clusters

operating vertical data sharing by which data is tracked from contributing primary and

intermediate schools into the higher level school. This ability to share relatively objective

data is considered a highlight.

Improvements to Information Communications Technologies

Very strong and largely negative opinions were expressed about a wide range of information communications technology (ICT) issues. The issues included (sorted in descending order of frequency) (Table 1): (a) data communication between asTTle and school management systems, (b) data entry methods for asTTle scores, (c) photocopying of asTTle tests, (d) sharing asTTle data across networked environments, (e) corruption of asTTle V2 data, (f) installation of asTTle in school environments, (g) compatibility of asTTle with MacIntosh operating systems, (h) inadequacy of school ICT infrastructure, security settings and user privileges within the school ICT infrastructure, (i), (j) (k) time required to generate asTTle Console Reports with large data sets, (l) difficulties in sharing asTTle data between schools within clusters. Details about these topics follow.

Table 1
Frequency and Direction of Comments Related to ICT Issues

Content	Positive	Neutral	Negative
(a) School Management Systems		5	14
(b) Data entry in asTTle			10
(c) Photocopying asTTle tests			8
(d) Network-based asTTle Data Sharing		3	7
(e) V2 Data Corruption			6
(f) Installation of asTTle		3	5
(g) MacIntosh OS			4
(h) School Network problems & policies		2	6
(i) Adobe Acrobat Reader			2
(j) Time to Generate Console Report			2

Note. Respondents may be in multiple cells.

(a) School Management Systems: asTTle has the ability to exchange data with school management systems through import and export files. This functionality requires some technical skill to implement, understand, and operate. Documentation on how to design export and import files has been released to all student management system providers and is made available through the ICT Help Desk to any enquirers. A significant number of issues

have been reported to the asTTle team about communicating with school management systems.

The asTTle team received a number of queries throughout the pilot study from schools regarding problems with their SMS into asTTle import files. The asTTle team was able to diagnose and identify bugs in the SMS import files for these providers. However, these were very basic errors that, had the SMS programmers examined the asTTle log files or reviewed the asTTle specifications (that have been sent to all providers), they could have easily resolved these issues. A further potential development that would contribute to reduction of this issue is the development of a protocol that would allow asTTle and school management systems to seamlessly synchronise student data.

Both schools to which field visits were actioned had problems with their respective SMS. In one school, the SMS could not export students in multiple classes per pupil. The school had indicated that it was on the verge of canceling asTTle implementation because of this difficulty. Communication between the school, the school's Assess to Learn (AToL.) provider, and the SMS provider has reassured all that asTTle can provide the required functionality. Nevertheless, this problem is indicative that the SMS provider did not appreciate or implement all the functionality that asTTle is capable.

The other school was not using asTTle V3 because they did not know how to transfer their student data from their SMS into asTTle. They had employed someone to type all the students into asTTle V2. However, even after being advised that transfer was possible, the HOD Mathematics could still not import into asTTle V3, apparently because the SMS had not yet updated their application to handle the asTTle V3 import/export specifications.

(b) Data Entry. One of the more common complaints about asTTle V3 has been the methods used to enter test scores. Score entry currently requires two strokes per item; first the appropriate score and then a tab to move to the next cell. In order to change a

test score, users would have to first erase the score before entering the new score and

then deliberately move to the next cell to confirm the change. A total of three strokes

to change one test score. The rationale for this approach was to emphasise security of

test scores. Feedback from users has clearly indicated that users would prefer a method

that permitted speed. This could be accomplished by changing the data entry method

so that as soon as any appropriate value is entered into a cell it overwrites the contents

of the cell and then the focus moves immediately to the next cell.

(c) Photocopying asTTle Tests: Constant comments were received about the amount

and cost of paper involved in reproducing the paper-and-pencil based asTTle tests. One

school commented negatively that the clarity and quality of reproduction of the test items

forced them to "print material at full size" resulting in more paper used. This feature of

asTTle is a deliberate design; research indicates that giving students more 'white space'

reduces test anxiety and improves overall performance. Indeed, feedback collected

throughout the asTTle development has clearly indicated that students enjoy the appearance

of the asTTle tests (Brown & Lavery, 2003). Further, asTTle has indicated to schools in the

manual that provision for this expense needs to be made in the school's assessment policy.

Nevertheless, until users are provided an option for a completely digital presentation of

assessments, there will continue to be complaints about this aspect of asTTle.

(d) Data Sharing: Despite having been told at the start of the study that asTTle V3

was not network compatible, negative comments about the asTTle procedures for sharing,

controlling, and storing data were received. One secondary school that was visited had

installed asTTle V3 on the school's central server and then all teachers (as many as 25-30)

tried to access the same asTTle. This resulted in asTTle not working and caused a few

misgivings in the school about using asTTle. It appears that the school's ICT person knew it

was a standalone application but thought he could do a workaround to turn it in to a

networked application - without success. At the focus groups there was an immediate change of attitude towards asTTle as soon as participants were informed that the Minister of Education had announced that asTTle V4 would have a multi-user, local area network compatible data sharing system.

A number of schools in the asTTle V3 evaluation operate in clusters in which data is shared between schools. This created an interesting problem related to the identification of students. asTTle requires that each student have a unique identification number; it also assumes that students with the same identification number are the same student. It became apparent in one school cluster that schools were issuing students with identical numbers (of course unique within their own institution). This meant that in one case almost 2500 students when merged became a set of only 1500; 1000 students disappeared through identification number duplication. Development of data sharing among schools is something to be encouraged, but procedures and training will be needed to eliminate this problem.

We have also had two queries from secondary schools about how to manage the roll-over of data from one year to the next. Schools wanted advice on keeping both sets of data in such a way that it was useful and would not cause confusion. This includes secondary schools which run multi-streams for students and in which teachers want the ability to analyse the data within and between the streams within any one year. Advice about this is already available in the asTTle manuals but further extension based on case studies appears to be warranted.

(e) Data corruption: Problems were reported in asTTle V2 that corruption of asTTle data could take place should two or more instances of the application be inadvertently launched. In addition to a utility that corrects the corruption, asTTle V3 detects and prevents multiple instance of the application launching. With the gradual implementation of asTTle V3, asTTle encountered a number of schools that had corrupt asTTle V2 databases. One of

the schools visited was trying to run asTTle V2 off a network server, even though the school had been advised not to do this. The database had become unstable and the school was unable to extract any data. The asTTle team managed to export the tabular report information and import it into the school student management system. Unfortunately, the detailed asTTle analysis could not be recovered because of the corruption caused by attempted multi-user behaviour. It should be noted that, at the same time, the English department in this school had been using asTTle V2 on a different computer without any problems. Notwithstanding this asTTle V2 problem, it should be noted that database corruption phenomenon has been greatly removed with schools implementing asTTle V3. Nevertheless, with the adoption of a multi-user asTTle shared database system, will require robust procedures to ensure data integrity.

(f) Installation procedures: asTTle V3 installs on computers from a CD-ROM and installation normally takes about five minutes. Several schools reported slower than expected installation (up to 15 to 20 minutes) which upon investigation was attributed to lower specification machines or the action of anti-virus software monitoring the transfer of files. A further complication in installing asTTle arose from school security systems and policies; one school reported that teachers do not have installation privileges and depend on an administrator being available to install the asTTle software. This school is likely to have asTTle installed only during Term 3 of 2004, despite receiving it in March, 2004. Indeed, in another school, with over 100 laptops on which to install asTTle, this reliance on one person was problematic.

The installation of a new version of asTTle in an environment where it has already been operating has caused some problems. Our experience with supporting schools who were having problems conducting upgrades to asTTle V3 is such that we strongly recommend that before any attempts are made to upgrade, all data asTTle V2 should be

backed up and stored in a safe place . It would also be useful if the procedure for what to do if things go wrong during automatic transfer of asTTle data are included.

(g) MacIntosh OS Support: It was decided in scoping the requirements for asTTle V3 that support would be dropped for Mac Classic operating systems. The Ministry has an agreement whereby schools can upgrade to Mac OS X for free and the limitations of Classic in terms of handling asTTle tests required this shift. Nevertheless, several complaints about dropping OS Classic were received. One school indicated that their Mac hardware would not support OS X despite access to it.

A further, more profound issue, arises from the speed of OS upgrades from the Apple company. In asTTle V2, a change to the Mac OS caused asTTle to cease working, necessitating the development and release of a patch. MacIntosh continues a program of frequent OS point releases and upgrades, some of which users obtain automatically through auto-upgrade functionality. This raises a risk to the asTTle product, as asTTle V3 was tested with OS X 2.8 and 3.0, while Apple keeps releasing auto-upgrades. They are now up to OS X 3.4 with X 4.0 Tiger being promised for 2005. There is a need to maintain support throughout the asTTle product life to ensure compatibility with Mac OS automatically implemented upgrades. A fully web-enabled e-asTTle, would ensure true platform and OS independence

(h) School Networks. Several schools reported severe instability in their own school network systems such that no work was possible on school computers. Although asTTle V3 should not have been dependent on whether a server was present or not, it appears that school infrastructure is organised in such a way that no computer use was possible until the complete school system was rectified. One school reported that they were unable to participate in the online forum discussion because the school's security policy banned access to open-source user groups and web sites.

(i) Adobe Acrobat Reader: All reports and tests from asTTle are generated as Adobe PDF documents and their printing is controlled by the free Adobe Reader software. The size of asTTle tests and reports is such that speed of generating and printing documents has been reported as a difficulty. One school reported difficulties printing tests across a network to a low end laser printer from any pre-Windows 2000 or Windows XP machine. The immediate work around is to connect the Adobe print job to a directly linked laser printer with a large memory capability.

(j) Time to Generate Console Report: In asTTle, calculation of report data is done "on the fly" each time a user requests a report. In asTTle V2 no issues had been raised concerning the time needed to generate Console Reports. However, as part of the asTTle V3 pilot, two schools provided large data sets that had been taking inordinate amounts of time to generate Console Reports. The sets ranged from 330 to over 2000 students, the latter being from a cluster of schools. Testing by the asTTle team verified that processing time to generate the reports ranged from 6 minutes on the quickest PC for the 2000 student data set to as much as nearly 40 minutes on a Macintosh computer. The issue was referred to the asTTle computer programming team who has revised the code such that the processing time to generate this report has reduced some 400 to 500% (note this enhancement will be available in asTTle V4); the 6 minute time is now less than 1 minute! This result is directly attributable to the V3 pilot with secondary schools who tend to have much larger data sets because of entry to Y9 usage and in environments were large-scale data sharing is taking place.

Improvements to asTTle Test Creation and Reporting

Test Creation. Despite the positive evaluation of the tests created by asTTle there was feedback from the focus groups, emails, and interviews indicated that teachers all wanted a greater degree of control over the test creation process. The main objection to the current

asTTle tests was that they got items that had "not been taught". Furthermore, teachers have commented that "*some items seem to crop up a lot esp. in the reading tests*", "*text genres seem to favour non fiction material in reading tests*", and that they had "*no control over selection of surface features (reading) e.g. in one case 32% of marks in a reading test were spelling items*". Resolving both issues would require a significantly larger bank of items and changes to the asTTle programming.

The nature of those programming changes was explored in the questionnaire and in the focus groups. The questionnaire priority sorting exercise revealed that two test creation enhancements were rated as MUST; that is, allowing choice of achievement objectives for a test (*n* = 38) and allowing replacement of up to 5 items in a test (*n* = 27). One other test creation options received modal SHOULD votes; limiting items in a test to those that best fit chosen year levels (*n* = 34). The card sort during the focus groups produced similar results, with the teachers' top priority for the test creation being to allow more choice.

Two other options received 10 or more NO votes and had a modal COULD vote, indicating that they should be treated as very low priority. These options were: allowing asTTle tests to be shorter or longer than the current 40 minutes and limiting the items in a test to those fitting a qualification. Time periods of less than 30 minutes, however, could introduce problems with the standard error of measurement if the resulting tests were too short. Nevertheless, the overwhelming message from users was that asTTle tests achieve what teachers want, while directions for future improvements have been identified.

Test Reporting. asTTle V3 generates a number of reports intended to give teachers feedback based on analysis of student performance compared to norms, criteria, and levels. In addition, asTTle provides links to a bank of indexed teaching resources on a public-access web site called *What Next*. On the whole, respondents in this evaluation were positive about the various reports provided by asTTle (see section above on positives). However, requests

for two new types of reporting were received. Participants in focus groups identified a need for longitudinal reporting (i.e., seeing how individuals or cohorts progress across time) and one literacy facilitator asked for the ability to compare performance of 'like with unlike'; in other words, she wanted to be able to see how schools she was helping were doing against different categories (e.g., higher performing clusters or ethnicities) rather than just against categories identical to the features of the schools she was helping. Furthermore, she requested the ability to compare the performance of school 'x' in her cluster with that of the other schools in the cluster.

The greatest issue with the current asTTle reporting has been the significant number of queries concerning the correct or accurate interpretation of the reports. Report interpretation needs to be fore-grounded in future professional development and asTTle documentation. Issues have been identified around how asTTle scores are calculated, what the scores are and what they mean, how curriculum levels are determined and what they mean, what the SOLO taxonomy is and what the depth of thinking categories mean, how the asTTle norms were derived and communicated, what the 'Schools Like Mine' clusters are and how they were derived, . It is especially noted that teachers found the ipsative referencing of the *Individual* and *Group Learning Pathways Reports* relatively novel and will require extra attention in professional development and in asTTle documentation. It should be noted that most of the information sought by asTTle V3 users is currently available through the static PDF manuals included with the asTTle V3 software. Adoption of a hyperlinked document solution would provide greater flexibility in directing linking users to pages that explain facets of the reports without having to search long documents.

Improvements for Use in Maori Contexts

Only one Maori-medium institution participated in the asTTle V3 evaluation study. Nevertheless, throughout the process of developing new items, the asTTle team has collected

and collated teacher feedback about all subjects (insert references). That feedback has been

included in the preparation of this report. Additional feedback has been obtained from

presentations given by asTTle members to Maori medium hui for facilitators and principals.

Three main recommendations for improvements to the Maori aspects of asTTle have

been made. Most commonly, users of asTTle have asked for customised vocabulary lists,

especially for pangarau as this subject contains many low frequency terms. This would

involve changing the asTTle test creation process so that it generate a list of low frequency

terms in the test that could be provided to students for reference while they complete the test.

International research has identified this feature as a positive benefit to the content

performance of language learners (Abedi, Hofstetter, & Lord, 2004). The second request has

to do with the display of the Maori words in the answer pages of each asTTle test. Users

have asked for these words to be displayed with macrons where required. Research has

indicated that it is possible to utilise a macronised font only for PC type machines, as no

macron compatible font exists for use within MacIntosh environments.

The third request is largely a function of introducing asTTle to secondary schools

where the subject Te Reo Maori (TRM) is taught. Those teachers were excited about the

possibility of using the panui and tuhituhi materials included in asTTle. However, these are

currently indexed, as per Ministry goals to the objectives and levels of the Te Reo Rangatira

(TRR) curriculum used in Maori-medium instruction. The objectives of TRR and TRM are

similar except that the objectives of TRM are expected and attained in much lower

curriculum levels by primary school TRR students. This means that, putting aside the issue

of interest level, the current asTTle Level 2 materials are probably still somewhat difficult for

secondary school TRM students. This means that only the more advanced TRM students will

be able to successfully attempt the asTTle literacy materials. Thus, making the asTTle TRR

materials available for secondary school TRM students would require development of much

easier materials and re-calibration of existing data so that they could be used for both purposes.

Improvements to Professional Development & Training

Issues around professional development, training, and support for secondary school teachers were raised frequently. Feedback is related to two major dimensions: the educational interpretation and use of asTTle V3 and the operation and understanding of information communications technology requirements (Table 2).

Table 2
Frequency and Direction of Comments Related to Professional Development

Content	Positive	Neutral	Negative
Training received	1	3	4
Style or type of training	1	4	2
Manuals		4	2
No training received		4	1
Difficulties interpreting reports		1	9

Note. Respondents may be in multiple cells within each section.

Education Related: Teachers clearly indicated that there is a big need for more professional development, especially at the school level, rather than at the multi-school level. Further, they urged that the PD go beyond the "driving licence" phase, and really get teachers to start using the data to make inferences about their students. As one teacher put it "*I had been to an asTTle workshop here in xxxxx … I don't think they covered standardisation of scores particularly, it was more hands-on user stuff*". An RTLB teacher, commented: "*It was made clear to me that the PD provided left many gaps and most of the people (including those using asTTle) seemed to be stuck at the creating of tests and inputting of data stage and had only a vague knowledge of the reports that asTTle created and didn't know about What Next*". A further comment from the secondary teachers has been the lack of provision of secondary school focused PD service and materials.

Another aspect of this training concerns teachers' apparent lack of appreciation of the benefits and uses of asTTle for informing teaching, even after being to PD courses. Factors contributing to this include the perception that the presentations went too fast, were too complicated, and were followed up with wads of paper on asTTle.

The biggest difficulty reported in focus groups with the demonstrations that AToL provided was that there were not real data for that school available. This meant that the interpretations teachers made in training were not fully informed by a complete knowledge of the students, and the curriculum content being tested. One asTTle V3 user commented that in the analysis of an asTTle reading test "*the reports indicated that the students were achieving well below their peers on **all** comparison graphs and all the teachers could say was they thought the children were doing better than they expected*". One school reported a need to train teachers to understand the curriculum level scores so that they could be explained to parents when used in school reports. It is noted that at least one primary school in the Auckland region has already developed communication resources and processes for helping parents understand the asTTle software and its reports. Thus, further development of contextualised professional development resources and processes needs to be implemented so that teachers can be confident that they understand asTTle reports correctly.

Given the level of questioning about the asTTle reports discussed earlier it appears that the training of secondary teachers to accurately interpret and respond to the asTTle assessment reports is still embryonic. This result is consistent with the data obtained in the evaluation of asTTle V1 (Ward, Hattie, & Brown, 2003). Implementation of the recommendations in that report concerning the training of teachers for educational uses of asTTle appear to be justified for secondary school populations as well:

> The most strongly agreed items related to a preference for practice oriented training sessions, while the methods with which participants somewhat disagreed related to preferences for lectures, or reading manuals. The participants also mostly agreed that several short sessions of training with time

in between to practice was optimal, that professional development is more beneficial if there has been time to try things out before hand ($M = 3.71$), and it is better to have someone outside the school run training sessions ($M = 3.59$). Thus, the preference is for externally run, hands on, short sessions, with some pre-preparation exercise (Ward, Hattie, & Brown, 2003, p. 26).

Thus, it is recommended that asTTle facilitators adopt a strategy of multiple sessions with each group of teachers and that the sessions focus on engaging teachers in a dialogue about assessment, curriculum, and teaching as part of an action-research examination of their own data, students, and teaching.

ICT Related: Feedback by users clearly indicated that the manual and the other supporting Help functions do not fully provide all that they might require. The documents are in a written form and are not supported by moving images or audio. The manuals contain a large volume of relevant information and are structured in a linear fashion, unsupported by navigation tools like indices or hyperlinks. Also, the manuals cannot account for every possible variation of circumstance and thus users are required to apply the concepts and principles to their own situations—which may be a serious obstacle to teacher-users with limited technical capacity. Some users have requested the inclusion of a print booklet beyond the current CD slick to assist in these matters. A range of possible responses are possible to address this issue, including: monograph series publications focused on unlocking asTTle assessment, web-based publication of manuals and frequently asked questions, provision of documents for download or printed purchase. The key aspect of these publication options is that the documents must be well constructed for the end-user with robust navigation aids and systems.

Assistance for ICT issues comes from a range of sources. The MoE runs a free phone ICT Help Desk for Schools who are able to provide a range of support across ICT problems. The MoE ICT Help Desk can help schools with installation, operation, data migration, communication with SMS, and have the ability to restore asTTle tests destroyed by

corruption or accidental deletion. The ICT Help Desk has handled and closed approximately 175 queries about asTTle since the start of 2004 and has shipped over 500 copies of asTTle V3 to requesting schools. The operation of asTTle has been well supported by the operation of the Help Desk.

Nevertheless, the asTTle team has been commissioned to intervene when issues have grown beyond the skill and understanding level of the Help Desk. As with any complex system, not all advice has been accurately communicated from asTTle to the ICT Help Desk for Schools and subsequent users. Fortunately, in the case of the wrongly advised school, the asTTle team were able to identify this communication breakdown and fix this problem on-site. It is recommended that such improvements of communication be posted promptly on a public-access web site for the benefit of all interested parties.

Another source of technical assistance is the AToL PD service. The AToL teams have successfully run a large number of courses around the country, though the asTTle team are not able to include this information as part of this evaluation. The AToL teams have prepared several PD documents which are being downloaded regularly from the asTTle web site. Extension provision and coverage of this type of resource is recommended.

Given the clearly important role of the various teacher facilitator services (e.g., AToL, Literacy and Numeracy, English, Mathematics, ESOL, and Pasifika) involved in helping teachers with effective use of assessment data for the improvement of learning outcomes, it is vital that a robust 'training of trainers' process and materials be developed. This must be done in conjunction with significant work by the asTTle team on the design and delivery of asTTle Help, Training, and Support documentation. Delivery of materials in searchable, highly navigable forms in contexts that permit self-access and training is recommended.

Uses Relative to National Qualifications Framework

The move of asTTle V3 into secondary school contexts has raised the issue of relevance of asTTle to secondary school teachers. Early in the design of asTTle V3 items and tasks, it became apparent that there would be a tension for teachers around the use of asTTle which is indexed to the curriculum framework <u>and</u> the prioritisation of providing preparation for students in Years 9 and 10 for the official qualifications assessment scheme (i.e., National Certificate of Educational Achievement and Unit Standards). To explore further this tension, which does not exist in primary school contexts, asTTle elicited feedback about the fit of asTTle V3 to National Qualifications Framework responsibilities.

In the questionnaire, teachers indicated that it was important or very important (total $n = 30$) to know how the items in an asTTle test related to NQF Achievement or Unit Standards. Nevertheless, in the questionnaire, only seven teachers indicated that they had some aspect of the NQF standards or qualifications in mind when they created an asTTle test; specifically, NCEA Achievement Standards related to Algebra, Probability, and Number were mentioned by four, and one identified a Unit Standard related to solving problems with whole numbers. Only one teacher indicated the fit of the test to the teacher's expectations was '*very poor*', with the rest evenly split between '*adequate*' and '*well*'. The proportion of items within a test that were considered not to fit expectations was relatively low (i.e., two indicating 1-10%, 1 at 11-20%, and 1 at 21-35%). The ability of the resulting asTTle test to diagnose learning needs of students for NCEA or US was judged to be '*adequate*' by four and '*well*' by one teacher with the other two split between '*very poor*' and '*poor*'.

Notwithstanding this support for the fit of asTTle tests to NQF by a small number of teachers who had worked with asTTle in this fashion, asTTle has also received a number of requests from focus groups for more information about test content in order to make a well-fitting NCEA test (see above on improvements to asTTle test creation mechanisms). Two

test creation options related to the NQF received modal SHOULD votes in the questionnaire. Specifically teachers asked for a summary of test content mapped against NQF Unit or Achievement Standards ($n = 30$) and evidence that asTTle items and/or tests meet NZQA requirements for suitable high-quality NQF assessment ($n = 25$). The option to limit the test creation to chosen NCEA grade levels within chosen achievement standard(s) received only a modal COULD vote ($n = 29$). Note, however, that in the focus group card sort, teachers gave third priority to this option. Thus, it would appear that the current asTTle test creation engine is judged for the most part as able to produce a test useful for NCEA or US work, though research and development work would be needed to establish the equivalence of asTTle items to NQF standards.

Consistent with this low current usage for NQF assessment, teachers reported in the focus groups that they had not yet implemented use of asTTle V3 with students outside the range Years 9 and 10. However, when shown the possible reports and tests that asTTle might be able to generate for them as indicators of NCEA performance, teachers were quite enthusiastic (Appendix C). Provided it were possible to calibrate asTTle items against the appropriate NQF standards and levels, teachers seemed to indicate that they would find this enhancement quite useful.

The questionnaire priority setting exercise identified four asTTle reporting developments as being of SHOULD priority. Notwithstanding the rating of those who had used it with NQF priorities in mind when creating a test, teachers clearly wanted greater ability to interpret asTTle performance in terms of NQF. Specifically, they asked for a table of equivalences between asTTle scores and NQF Unit or Achievement Standards ($n = 30$), a table of equivalences between curriculum level scores and NQF Unit or Achievement Standards ($n = 29$), detailed strengths and weaknesses diagnosis of elements within Unit or Achievement Standards ($n = 29$), and an interactive report that links asTTle scores to NQF

Unit or Achievement Standards ($n = 27$). Note that all these options also received 10 to 14 votes for MUST. It is recommended that a research study between asTTle and the NZQA and Ministry of Education be established to determine whether such equivalences can be meaningfully found and reported and whether this may be desirable at a policy level.

In contrast to these high priorities, teachers clearly indicated that options related to providing formal evidence of achievement against Unit Standards ($n = 27$), Achievement Standards ($n = 28$), or elements within US or AS ($n = 29$), prediction of AS grade levels ($n = 24$), or reporting such evidence to NZQA ($n = 26$) were only COULD priority. This hesitance to use asTTle in this fashion could be understood, using Brown's (2002) conceptions of assessment model, as exemplifying a reluctance to use asTTle as an external-reported, student accountability mechanism and supporting a view of it improving the quality of teaching and learning.

Overall, the asTTle team concluded that there is a reasonably strong desire to use the asTTle assessment information (both at the test creation and score reporting points) for improvement purposes within the context of the current qualifications assessment schemes. The development of such features will require significant research and cooperation between asTTle, the Ministry of Education NCEA policy, and the New Zealand Qualifications Authority NCEA and Unit Standards implementation teams. Nevertheless, there is evidence that this would be considered of value by secondary school teachers.

Conclusion

This evaluation leads to a number of potential consequences related to the design and implementation of coming versions of asTTle. These data were collected in the first half of 2004, with asTTle V4 scheduled for release at the end of the same year. The many issues identified in this research were brought to the attention of the various parties involved in designing asTTle V4. However, much of what teachers have requested or indicated as

valuable can not be incorporated into the development cycle of asTTle V4. Consequently, this section reports issues under the headings of those that could potentially be met in asTTle V4, those that would require a future electronic, web-based, digital or e-asTTle, and those related to professional development and support.

An overview of the possible developments is shown in Table 3. The list shows the status of each improvement and the aspect of asTTle's development in which the improvement is associated. A double tick (✔ ✔) indicates that the improvement is definitely scheduled as part of the development, while a single tick (✔) indicates that the improvement is probable. A question mark (**?**) shows that the improvement is possible within the context of the development in question but is subject to confirmation that the direction is desired. Clearly, 12 of the definite developments will be delivered as part of the asTTle V4—Multi-User—School Management System combination contract at the end of 2004. Provided development goes well it is anticipated that a further four improvements will be incorporated in this release. Nevertheless, the current design of a future electronic asTTle would meet a significant proportion of these requirements. Fundamentally, readers of this report can be confident that the asTTle evaluation has elicited a wide range of required improvements and that the current and planned schedule of asTTle developments will meet teacher requirements.

Table 3
Status of Improvements by asTTle ICT Development

Areas for Improvement	asTTle ICT Development			
	asTTle V4	Multi-user asTTle	SMS	e-asTTle
Maori				
Calibrate to Te Reo Maori Curriculum				?
Customised vocab list	✔			
Macrons in answers	✔			
ICT				
Ability to share data		✔		
Automatic data back up		✔		
Automatic synchronisation of data across network users		✔		
Automatic synchronisation of off-line data changes		✔		
Centralised repository and control of asTTle data		✔		
data corruption prevent & restore		✔		
Data entry method for test scores	✔			
Greater control over the test creation process				✔
Installation time				✔
Maintaining support with Mac OS upgrades				✔
Photocopying issues - the amount and cost of paper involved in reproducing asTTle tests				✔
Protection of asTTle data from accidental deletion		✔		
Reduction of paper photocopying costs				✔
School network security policies banning access to chatrooms and forums				?
Seamless data communication between asTTle and school management systems			✔	
Slowness & dependence on appropriate Acrobat Reader technology				✔
Time taken to generate console report		✔		
PD				
Enhanced PD for report interpretation				✔
Interactive, real-time+A70 technical support				✔
More comprehensive PD	?			✔
On-line training of trainers				✔
PD for ICT & SMS Providers & Support	✔			
Provision of on-line certification of asTTle usage skills				✔
Provision of on-line self-access training materials				✔
Publication of monographs and training documents				?
Reconstruction of asTTle Help and Manual to be more user friendly	?			✔
Relating asTTle items to NQF Achievement or Unit Standards				?
Content				
Addition of L5-6 Literacy materials	✔			
Addition of L5-6 What Next Literacy materials	✔			
Automatic refreshing of items and norms				✔
Increased number of items in any subject				✔
Increased number of subjects				✔
Increased range of norms options				✔
Introduction of innovative item types				✔
New reporting features				
Comparisons of Like with Unlike				?
Longitudinal reporting				✔
Multiple Subject reports				✔
NQF type reports				?
Single subject multi-test reports		✔		

asTTle V4

Because there was a scheduled development process leading to asTTle V4, teachers were aware that asTTle V4 would include more items for the assessment of literacies (reading, writing, panui, and tuhituhi). Furthermore, because of the same schedule, it was possible to identify and prepare for major structural changes in asTTle V4, should they have been determined as necessary. On June 9, the Minister of Education announced that asTTle V4 would include a multi-user, shared data base system that operates across schools' local area network to allow access to all the local asTTle tests, students, and reports. This improvement will go a long way to addressing issues identified throughout the evaluation of concerns about data sharing. Another enhancement scheduled for the V4, as part of the introduction of multi-user capability, is the modification of the *Console Report* so that results from multiple tests of a subject can be analysed together. This will allow teachers to get an overview of performance across a subject from a series of tests, thus overcoming the limitations of a single 40-minute test. This ought to assist users in reviewing the status of a cohort's performance across a subject without having to manually sum and average across a range of tests

Additionally, other improvements have been put on the asTTle V4 development agenda. Provided they are high enough priority to fit within the fixed development budget, new procedures for data entry, displaying Maori macrons, provision of customised Maori vocabulary lists, communication with school management systems, and report generation time reduction will be implemented.

Beyond V4 to e-asTTle

However, the priority requirements of secondary teachers for reduced paper cost, reduced data entry requirements, increased flexibility in test creation, and increased options

in asTTle reporting cannot be met within the confines of paper-and-pencil testing system. The design, development, and implementation of an electronic, computer based assessment system would be necessary in order to meet these objectives. A truly online or on-screen assessment environment would remove the need for paper, and reduce the time for human marking, and human data entry. This alone would redress major criticisms of asTTle V3.

An electronic assessment system would also permit a rapid increment in the number of items calibrated to the curriculum objectives and levels and norms, through "on-the-fly" calculation of item parameters as experimental items could be included in every test. Further, the addition of new items, new tasks, new documents, new reports, and so on could be easily handled in a web-based environment wherein users draw down from a central host all such improvements without needing to print and disseminate CD ROM disks. Continual updates and responses to changes in ICT environments would also be greatly enhanced in such a delivery mechanism. In an electronic asTTle, the ability to select out or reorder items could be implemented.

Clearly, CD based installation procedures can be somewhat time-consuming and may be frustrated by security concerns. Adoption of an internet hosted application would bypass such installation difficulties. Further, development of an internet hosted application would require offer opportunities to complete all processing on extremely fast host server machines. Adoption of a hosted internet solution would utilise less-memory intensive technologies for displaying tests and reports and would obviate the need to even print tests. Adoption of an electronic digital testing system would allow users much greater flexibility in designing items along the lines noted here, provided that sufficient items were available in the item bank.

Furthermore, the design and delivery of new educationally valuable reports is possible through such an implementation. For example, longitudinal analysis of student performance in one or more subjects could be produced, as more control over the time of test

administration could be captured. Value added or progress reports showing progress from

past and possibly against expectations could also be designed and delivered within such an

electronic delivery mechanism. . A further refinement would be the ability to toggle

between scale score displays (e.g., show curriculum levels, show scale scores) and further

refinement in selection of comparison categories. The ultimate customisation possible in an

e-asTTle would be the power for the user to create his or her own reports.

Professional Development

This evaluation clearly identified needs for improved professional development and

support for both educational uses and operation within an increasing range of ICT

environments. Accompanying asTTle V4 will need to be a greater range of enhanced

documents and support mechanisms – particularly linked and more easier to access via web

pages. Notwithstanding, the implementation of these improved support services, it is

considered vital that an electronic asTTle be developed to further enhance the delivery of PD

and support.

ICT content: Assistance to users about ICT issues is normally provided by the MoE

ICT Help Desk for Schools or the AToL PD providers. In addition, the information schools

need to install and operate asTTle is available in the asTTle support documentation. Further

there is assistance to users screen by screen within the asTTle application through context

sensitive Help screens. However, with the introduction of new ICT features in multi-user

asTTle V4, it is expected that a new level of support will be needed by school network

administrators in terms of installation on their own network system, installation and operation

of asTTle V4 users across a local area network, integration and communication with the

school management system, and management (e.g., archiving, storage, restoring, year-end

roll-over, etc.) of their own data. Documentation of these key procedures will be part of the

supporting documentation released with asTTle V4. Investigation into the design and

provision of on-line trouble-shooting and training/reference materials for network administrators should be conducted.

Additionally, users will require the continued support of the MoE ICT Help Desk and various facilitator groups such as AToL and the various literacy and numeracy subject teams. Those groups will need to offer professional development to a new client group (i.e., network administrators) in addition to their normal work with teachers and school leaders. The asTTle team has identified three key issues about which ICT support for asTTle will be needed: (a) set up and installation of asTTle, (b) communication with SMS, and (c) data management and sharing. Furthermore, extensive training of the ICT support personnel (AToL and ICT Help Desk) in how to read and troubleshoot .ast files, how to manage student data, and how to analyse asTTle error messages (among many other topics) is required. A separate study on the deployment of asTTle V4 is being conducted by the asTTle team and that report will provide recommendations for training asTTle facilitators.

Nevertheless, a shift to a web-based electronic platform for asTTle™ may provide opportunities for self-access teaching and verification and, just as important, the dissemination of teacher and parent PD resources.

Educational content: Continued and extended support for teachers and school leaders on the correct and appropriate interpretation and use of asTTle reports and asTTle test creation has been requested and is justified. The collation and dissemination of best practice stories from schools as they use asTTle would be a vital component in this agenda. The modification of current PD processes may be needed when they are delivered in secondary school contexts.

A wide variety of methods can be used in providing support to teachers; the ability to access support through a toll-free number or email address, support for trouble-shooting services, and pro-active calling by a skilled support team (e.g., the school's ICT support

service or the asTTle PD facilitators) to prevent issues arising have all been found effective. It is recommended that these feedback mechanisms be part of any future pro-active support and professional development service. Further consideration needs to be given to the development of effective means of exploiting digital communities that can support full use of asTTle assessment and education technologies. Furthermore, an effective multi-prong communication strategy of future developments in asTTle and how to prepare appropriately for them could be put in place.

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Appendix A. asTTle V3 Evaluation Study Advertisement

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asTTLe - Secondary Schools Registration of Interest

Participation in asTTle Numeracy CD ROM Version 3 Trial, term 1, 2004

The Ministry of Education is seeking secondary schools to participate in a trial of the asTTle (Assessment Tools for Teaching and Learning) Version 3 CD ROM. The new tools are being developed for use with students in Y8–10. They provide high quality externally referenced, curriculum-based information designed to assist teachers in identifying students' strengths and learning needs in mathematics at curriculum levels 2-6 inclusive.

If you are prepared to:

- Administer and analyse at least one mathematics test during term 1, and
- Respond to phone or mail surveys about your use of the asTTle tools,

then we invite you to register your interest by 30 November.

Send your registration to: Project asTTle – Pilot V3 Mathematics; fax (09) 308 2355; email asttle@auckland.ac.nz

Please provide the following information:

School name; school address; list of mathematics teachers who will be involved with Y8–10 students; proposed timing for asTTle usage; and contact details (i.e. ph/fax, email).

If more than 50 schools register, selection will be made to ensure national representation. Schools will be advised of selection by 12 December.

Education Gazette New Zealand. 83(15), 3 November 2003
Retrieved: http://www.edgazette.govt.nz/notices/show_notices.cgi?id=59642

Appendix B. asTTle V3 Questionnaire Results

How helpful are the following asTTle V3 features to your work related to National Qualifications assessment, reporting, and monitoring?

asTTle features	How Helpful?							
The ability to …	*Not at all*	*A little*	*Somewhat*	*Moderately*	*A lot*	*Extensively*	***High Help Score***	*No Answer / Not Used*
1. create tests by choosing curriculum level(s) difficulty	1	2	1	11	28	15	*43*	*16*
2. create tests by choosing the curriculum strand(s)	2	2	1	11	24	16	*40*	*18*
3. to preview the answers of the test	1	1	4	17	19	13	*32*	*19*
4. preview the test before administration	1	--	1	9	31	17	*48*	*15*
5. review the curriculum map underlying asTTle by looking at a Technical Report	5	2	6	13	8	3	*11*	*37*
6. identify teaching priorities based on students' strengths or weaknesses	4	--	1	9	30	12	*42*	*18*
7. analyse the pattern of strengths and gaps for a group of students using the *Group Learning Pathways Report*	1	2	3	9	24	12	*36*	*23*
8. analyse individual student strengths and gaps using the *Individual Learning Pathways Report*	1	2	4	9	26	9	*35*	*23*
9. compare my students with NZ students using the *Console Report*	3	1	5	11	16	11	*27*	*27*
10. select sub-groups for comparison using the *NZ Comparisons* option	3	1	5	10	12	5	*17*	*38*
11. see a list of my students' curriculum level performance with the group average using the *Tabular Report*	3	1	2	9	21	10	*31*	*28*
12. see performance by curriculum achievement objective using the *Individual Learning Pathways* and *Group Learning Pathways* reports	3	1	3	9	13	14	*27*	*31*
13. see the distribution of my students' performance against curriculum levels using the *Curriculum Levels Report*	3	2	1	11	19	12	*31*	*26*
14. refer to teaching resources for curriculum levels using the *What Next* web site	3	2	6	9	16	8	*24*	*30*
15. report performance to parents, colleagues, or students	6	1	5	10	17	7	*24*	*29*

POSSIBLE FUTURE VERSIONS OF ASTTLE

What priority would you give each of the following possible features in future versions of asTTle?   (*Fill in one box only for each statement*)

Possible New Features in asTTle	MUST	SHOULD	COULD	WOULD	NO	Missing
TEST CREATION						
19. Allow choice of achievement objectives for a test	**38**	22	11	--	--	3
20. Allow replacement of up to 5 items in a test	**27**	25	19	1	--	2
21. Allow asTTle tests to be shorter or longer than the current 40 minutes	4	24	**29**	6	10	1
22. Limit items in a test to those that best fit chosen year levels	8	**34**	14	7	8	3
23. Limit the items in a test to those fitting a qualification	7	20	**24**	4	12	7
24. Limit the test creation to chosen NCEA grade levels within chosen achievement standard(s)	11	21	**29**	3	5	5
25. Provide a summary of test content mapped against NQF Unit or Achievement Standards	12	**30**	22	6	1	3
26. Provide evidence that asTTle items/tests meet NZQA requirements for suitable high-quality NQF assessment	16	**25**	21	4	3	5
REPORTING						
27. Provide an interactive report that links asTTle scores to NQF Unit or Achievement Standards	10	**27**	**27**	3	2	5
28. Provide a table of equivalences between asTTle scores and NQF Unit or Achievement Standards	13	**30**	15	7	3	6
29. Provide a table of equivalences between curriculum level scores and NQF Unit or Achievement Standards	10	**29**	22	3	4	6
30. Provide report on NQF progress or achievement	14	21	**25**	4	5	5
31. Provide detailed strengths and weaknesses diagnosis of elements within Unit or Achievement Standards	14	**29**	15	6	1	9
32. Provide evidence of achievement against Unit Standards	11	21	**27**	8	2	5
33. Provide evidence of performance against Achievement Standards	14	21	**28**	5	2	4
34. Provide evidence of performance against elements within Unit or Achievement Standards	11	20	**29**	7	2	5
35. Provide evidence for predicted grade level on Achievement Standards	9	23	**24**	11	3	4
36. Provide evidence of NQF achievement so that it can be reported to NZQA	7	17	**26**	9	10	5

Appendix C. Mockups of Potential NQF Related asTTle Developments

Figure 1
Mock up NCEA Formatted Test Layout

Figure 2
Mock up NCEA Report Type Selection
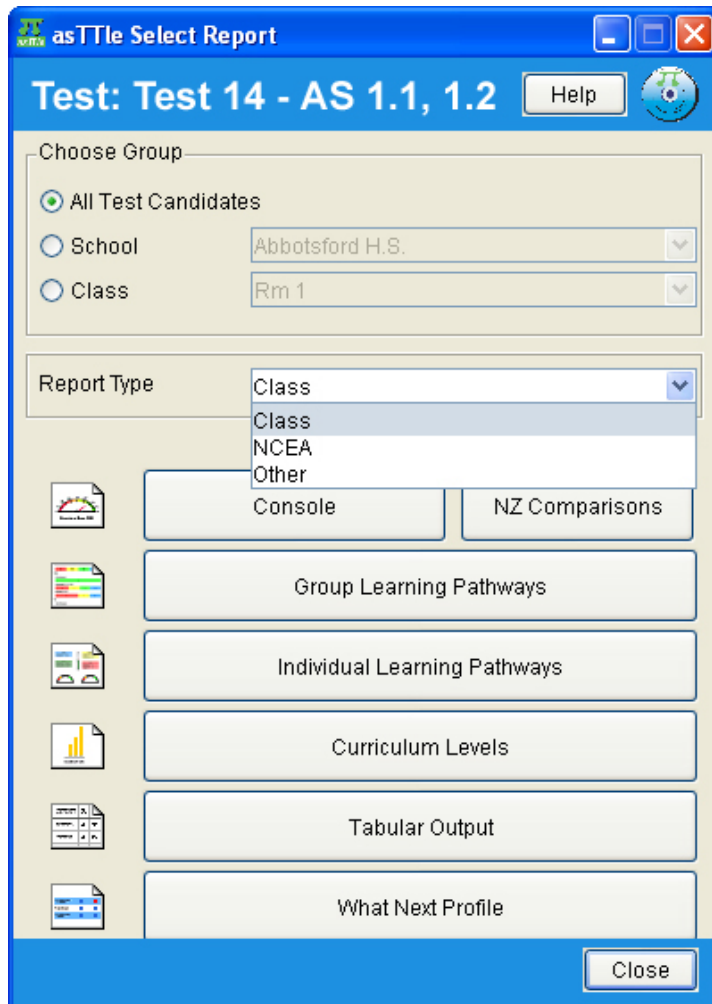
Figure 3
Mock up NCEA type Console Report
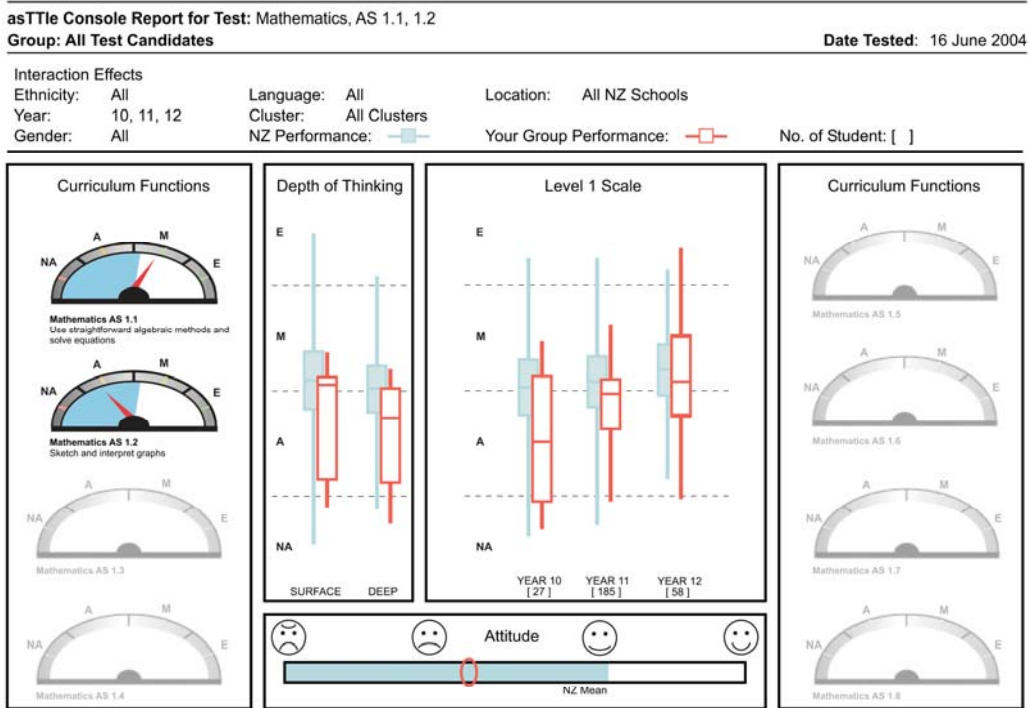
Figure 4
Mock Up NCEA type Grades Report

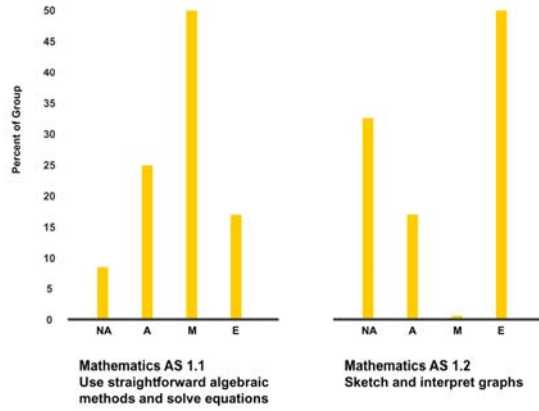**asTTle Curriculum Levels Report for Test:** Mathematics, AS 1.1, 1.2
Group: All Test Candidates
Date Tested: 16 June 2004

Mathematics AS 1.1
Use straightforward algebraic methods and solve equations

Mathematics AS 1.2
Sketch and interpret graphs

asTTle Curriculum Levels Report for Test: Mathematics, AS 1.1, 1.2
Group: All Test Candidates
Date Tested: 16 June 2004

Mathematics AS 1.1 Use straightforward algebraic methods and solve equations

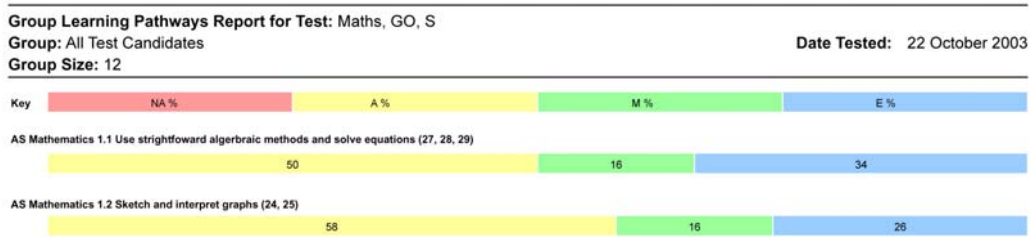| NA	A	M	E
Fred Ox Terry Boot Bill Trunkanson	Coffee Wicket Pressure Gain	Ken Son Dollar Trunkanson Hannah August Train Director Mary Goldenacrobat	Claire Pleasing Start Wing

asTTle Curriculum Levels Report for Test: Mathematics, AS 1.1, 1.2
Group: All Test Candidates
Date Tested: 16 June 2004

Mathematics AS 1.2 Sketch and interpret graphs

NA	A	M	E
Ken Son Train Director Coffee Wicket	Mary Goldenacrobat Dollar Trunkanson	Pressure Gain	Hannah August Terry Boot Fred Ox Bill Trunkanson Claire Pleasing Start Wing

Figure 5
Mock up NCEA type Group Learning Pathways Report

Group Learning Pathways Report for Test: Maths, GO, S
Group: All Test Candidates
Group Size: 12   **Date Tested:** 22 October 2003

Key	NA %	A %	M %	E %

AS Mathematics 1.1 Use strightfoward algerbraic methods and solve equations (27, 28, 29)

50	16	34

AS Mathematics 1.2 Sketch and interpret graphs (24, 25)

58	16	26

Figure 6
Mock up NCEA type Individual Learning Pathways Reports

asTTle Learning Pathways Report for Test: Mathematics AS 1.1, 1.2
Group: All Test Candidates   **Date Tested:** 16 June 2004
Student: Pressure Gain

	CORRECT		PREDICTED NCEA L1 GRADE		INCORRECT	
	AS 1.1	AS 1.2	AS 1.1	AS 1.2	AS 1.1	AS 1.2
E	--	17			10	26 , 27 , 28 , 29
M	11 , 12	18 , 19 , 20 21 , 22 , 23		✓	6 , 7 , 8 , 9	24 , 25
A	3 , 4 , 5	15 , 16	✓		1 , 2	--

	Mathematics	Surface	Deep	Mathematics AS 1.1	Mathematics AS 1.2
This student	837	859	812	832	844
Level	A	A	A	A	M
Year 11 mean	800	835	775	812	801