

Research and Work Programme Summary

Attitude Domains in e-asTTle

1. Background

CD-Rom asTTle was developed with one pre-defined set of attitude questions that were included in all test areas. The development of this set of questions was based on the NEMP attitude questions, with results recorded on a four-point Likert scale represented as smiley faces (below).

This original set of attitude questions was also included in e-asTTle in 2008.


ACCEPTED TESTQuestion: 01 to 06


1 Attitude Questions > 2 Test Questions


Attitude Questions


Attitude Questions

Tick the box that is closest to how you feel about each question


1


2


3


4

How much do you like reading at school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How good do you think you are at reading?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How good does your teacher think you are at reading?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How good do your Mum and Dad think you are at reading?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much do you like reading in your own time (not at school)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How do you feel about going to a library to get something to read?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

As part of the ongoing development of e-asTTle, Auckland UniServices completed further research into the attitude domains. Schools had requested the ability to choose from a broader range of attitude questions. Research was undertaken to develop a set of attitude domains that would provide teachers with other attitude/personality measurement domains to choose from when incorporating such measures with customised or adaptive tests. Thus, when a test is created, there would be multiple sets of attitude/personality items available.

While the possibilities were numerous regarding the constructs that might be used as attitude or personality sets, the following constructs were identified as being both highly relevant to students, and of particular interest for inclusion as e-asTTle personality/attitude domains.

2. Summary of Constructs

Engagement

Definition

Student engagement involves both behavioural (attendance) and emotional (sense of belonging) components. Students who are engaged in their school activities show sustained behavioural involvement in their learning activities and a strong sense of belonging and worth within their learning environment. Student engagement is not a solo activity; rather it encapsulates the relationships that students have with a variety of different people (teachers, peers) and contexts (school structures, facilities, and curricula) within the school environment.

Measures of Student Engagement

There exist four well-validated measures relating to student engagement; National Survey of Student Engagement, College Student Experiences Questionnaire 4th Ed, High School Survey of Student Engagement (HSSSE), and the PISA Student Engagement Scale (see Appendix A). Whilst the HSSSE provides a thorough measure of engagement and participation, it is designed for high school students and comprises of wording that is very directed at American high school communities. With the exception of the PISA measure, all of the scales focus strongly on the attendance and participation aspects of student engagement. In contrast, the PISA Student Engagement Scale strongly focuses on the student's sense of belonging at school, and attitudes towards schooling. A further advantage of this scale is its validation across all OECD countries and, although designed for use with 15 year old students, has a readability level appropriate for younger students.

Motivation

Definition

Student motivation is defined as a student's willingness, desire, need, and compulsion to be successful in, and participate in, the learning process (Bomia, Beluzo, Demeester, Elander, Johnson, & Sheldon, 1997). Whilst there are many factors that contribute to students' interest and level of engagement, Skinner and Belmont (1991) suggest that motivated students "select tasks at the border of their competencies, initiate action when given the opportunity, and exert intense effort and concentration in the implementation of learning tasks; they show generally positive emotions during ongoing action, including enthusiasm, optimism, curiosity, and interest" (p. 3).

Measures of Motivation

There are many instruments available to measure student motivation (e.g., Multidimensional Multiattributonal Causality Scale; Motivated Strategies for Learning Questionnaire; Motivation Orientation Scale; Inventory of School Motivation; & Learning Process Questionnaire). Depending on the type of motivation or motivational theory adopted, typically these scales measure either intrinsic/extrinsic motivation (achieving-motive), or to meet a required external expectation

(surface/deep motivation). Further, motivation is assessed either in relation to a global variable, for example, the school context (e.g., Inventory of School Motivation), or in relation to subject-specifically (e.g., Motivation for Reading Questionnaire).

Interest

Definition

Typically, an individual's interest is linked to her or his achievement with particular subject content. It has been proposed by Dewey (1913) and Mitchell (1993) that obtaining student interest consists of triggering conditions that both *catch* and *hold* interest over time. Where catching interest involves engaging and stimulating students', holding interest involves making class resources and material involving and meaningful. However, the hold component of interest appears to be the most relevant to interest being held over time (Harackiewicz, 2000).

Measures of Student Interest

There exist very few generic student interest scales, with research on student interests typically measured with scales designed in relation to the research question being examined (e.g., Interest Wave, 2000 & Student Interest Inventory, 1997), or where interest is represented as a sub-construct of motivational measures. An exception is the Kvalitet i Matematikkundervisningen (KIM) questionnaire, which was established as part of a quality in mathematics teaching project carried out in Norway in 1995, amongst students across grades 6 to 9 (see Appendix A). KIM Questionnaire has been used extensively as an instrument to assess study beliefs and attitudes towards Mathematics (Graumann, 1996; Leder & Forgasz, 2002; Pehkonen, 1994; Pehkonen, 1996; Pehkonen & Lepmann, 1994; Perry, Howard, & Tracey, 1999; Tinklin, 2003; Tsamir & Tirosh, 2002; Vacc & Bright, 1999; Williams, Burden, & Lanvers, 2002).

Self-regulation

Definition

Self-regulation is neither a mental ability nor an academic performance skill; rather it is proposed to be an aptitude. As such, self-regulation is the self-directed process by which learners transform their mental abilities into academic skills. Thus, high self-regulating students see learning as an activity that they participate in, in a proactive way, not as a covert event that happens to them in reaction to teaching (i.e., low self-regulating students). Whilst some theorists argue that self-regulation is solely a meta-cognitive dominated construct (e.g., knowledge of cognition and regulation of cognition), alternative theories advocate the involvement of both cognitive and motivational factors, especially when considering self-regulation in relation to academic performance (Zimmerman, 1990).

Measures of Self-Regulation

Three well-validated scales dominate student self-regulation research: Meta-cognitive Awareness Inventory (MAI), Motivated Strategies for Learning Questionnaire (MSLQ), and the Learning and Study

Strategies Inventory (LASSI). All three scales are distinguishable by the inclusion or not of the emotional aspect to self-regulation. For example, the LASSI focuses on the meta-cognitive factors associated with self-regulation, where the MAI and MSLQ combine both cognitive and emotional aspects.

Self-efficacy

Definition

Bandura (1993) defined self-efficacy as beliefs that “influence how people feel, think, motivate themselves and behave” (p. 118). It is proposed that an individual’s actions are predetermined by the beliefs that they have in their capability to exercise control over their functioning (Bandura, 1986; Lynch, 2002). Thus, these beliefs will either inhibit or motivate the individual, as “unless people believe that they can produce desired effects by their actions, they have little incentive to act” (Bandura, Barbaranelli, Caprara & Pastorelli, 1996 p. 1206). In relation to reading behaviour, Henk and Melnick (1995) argue similarly that the perception an individual has regarding their reading ability would influence the degree to which they are motivated to read, and the effort and persistence given when processing and comprehending text. However, it is important to note that self-efficacy cannot be viewed as a universal concept, instead perceptions, even within the same subject area, can be highly contextual and context specific (Halsey, 2003). Within reading itself, an individual might have a high sense of efficacy regarding their ability to comprehend text, but perceive a lack of ability when recognising words. Given that the potential variability of an individual’s self-efficacy at levels within a task, Bandura recommended that self-efficacy measures should not be aimed at capturing a general efficacy towards an area, rather, be targeted at specific behaviours or tasks (Mathewson, 1994).

Measures of Self-efficacy

The Reader Self-Perception Scale (Henk & Melnick, 1992) is a group-administered self-report instrument for the measurement of how intermediate-level children appraise their reading ability. Based on Bandura’s (1977, 1982) theory of perceived self-efficacy and application of such beliefs to specific learning tasks, the RSPS was designed to present items that focus on major elements of reading, such as word analysis and recognition, reading fluency and comprehension. The full RSPS consists of 33 items, where Item 1 is a general item (‘I think I am a good reader’) and the remaining 32 items represent four subscales: Progress, Observational Comparison, Social Feedback and Physiological States. Items are rated on a five-point Likert scale ranging from ‘Strongly disagree’ (1) to ‘Strong agree’ (5). For the purposes of this study, only the eight items from the Progress subscale were used in both paper-and-pencil and web-based questionnaire versions. The Progress subscale measures how a participant’s perception of their present performance in reading compares with their perceived previous performance (Henk & Melnick, 1995). In addition, a mixture of nine additional items (three from each of the other three subscales) were incorporated randomly amongst the eight progress items (plus the one general item). For this study, the response scale was changed from a Likert system to a dichotomous (Yes/No) response format (see RSPS Progress subscale modifications section below for explanation).

3. Attitude Domain Measures Selected for e-asTTle

Based on a thorough review of the measures associated with the attitude domains proposed for e-asTTle, the following attitude/personality scale sets were recommended to be available for selection (see Table 1). The following existing and modified scales were recommended for inclusion based on the following selection criteria:

- Items can be calibrated to the same polytomous scale, allowing for generic report and possible cross-domain comparisons
- Items are publicly available for use
- Items are relevant (e.g., readability, meaningful) to a wide range of age groups
- Items are relevant for New Zealand students, e.g., high face validity
- Items have been selected from well validated and reliable scales
- Items can be contextually modified to represent reading, writing and mathematics (*where necessary*)
- An equal amount of reversed scored items are included in scale (*where applicable*)
- Scales represent the most accepted theoretical position for that construct
- Scales can be scored using a 4-point scale

Engagement

The PISA 2000 Student Engagement Questionnaire was selected to provide a set of items for this domain. This set of items is focused on assessing the students' sense of belonging within their school environment, thus items selected measured a global representation of student engagement. Eight sense of belonging items were selected from the PISA 2000 measure, and, from there, a final set of six items. For clarity of meaning and readability, 'at school' was added to five of the six items.

Motivation

As students' motivational beliefs are formed against specific academic tasks and contexts, both generic and subject-specific measures were proposed and developed for inclusion as domain options. Both the Inventory of School Motivation (global) and the Motivation for Reading Questionnaire (subject-specific) measures were recommended for inclusion as domain sets. Nine of the items representing effort aspects of motivation were selected from the Inventory of School Motivation scale, with six of these selected based largely on readability and relevance. No modification of the Inventory of School Motivation items was required. The MRQ was included in its original form and adapted for both Writing and Mathematics. Across all three subject-specific scales, only slight modifications were conducted to improve readability. One item across all MRQ's versions represented importance, social, challenge, compliance, curiosity, and avoidance areas of motivation.

Interest

The KIM Questionnaire was recommended and developed for subject-specific use across all three subjects, with two modifications of this scale for Reading and Writing. Within the Mathematics scale, only slight modifications were made, for example, 'Mathematics' was changed to the colloquial term 'Maths'. In relation to the Reading and Writing scales, slight rewording of items was required to assist readability.

Self-regulation

The MSLQ was recommended and developed as a measure for student self-regulation. This scale, although not subject-specific, assesses the students' global academic self-regulation. In addition, the MSLQ items are designed to measure both the cognitive and emotional aspects of self-regulation, which current theory suggests provides a more accurate account of this construct within the academic context. Whilst the MSLQ consists of two sets of subscales (motivation and learning strategies), items were selected only from the learning strategy items, as motivation is already represented exclusively as a domain set.

Self-efficacy

The Reader Self-Perception Scale (RSPS: Henk & Melnick, 1992) provides a subject specific (Reading) assessment of self-efficacy and was selected for development. The progress sub-scale of the RSPS is proposed for use in measuring how students perceived/believe their reading progress to be now, based on their previous performance.

Table 1. Summary of the final domain scales for e-asTTle attitude domains

Domain	Original Scale	Global	Reading	Writing	Mathematics
Engagement	PISA 2000 Student Engagement Questionnaire	6 items: Sense of belonging (5 reversed scored item)			
Motivation	Inventory of School Motivation	8 items: Effort			
	Motivation for [Subject] Questionnaire		6 items: Importance, Social, Challenge, Compliance, Curiosity, Avoidance	6 items: Importance, Social, Challenge, Compliance, Curiosity, Avoidance	6 items: Importance, Social, Challenge, Compliance, Curiosity, Avoidance
Interest	KIM Questionnaire		6 items: Reading Interest (1 reversed scored item)	6 items: Writing Interest (1 reversed scored item)	6 items: Mathematic Interest (1 reversed scored item)
Self-regulation	Motivated Strategies for Learning Questionnaire	6 items: Learning strategies (1 reversed scored item)			
Self-efficacy	Reader Self-Perception Scale		8 items: Progress		

4. Development and Quality Assurance Process

Based on the five agreed domain sets (engagement, motivation, interest, self-regulation, and self-efficacy), two pilot studies were initiated in order to establish the applicability of the pre-existing item statements to the e-asTTle student population.

The following outlines the details and administration of these two pilot studies, and the subsequent norming analysis that was conducted from the data collected in Pilot II.

Pilot I – Readability and Comprehension Analysis

Although the items proposed for use originate from psychometrically reliable and valid tools, all (with the exception of the self-efficacy items) had been previously administered on either older students or adult populations. Thus, this pilot established the item readability and comprehension across each of the attitude domains for the youngest e-asTTle student population (e.g., 8 year olds). Across five schools in the Auckland area, focus groups were conducted with small groups (2-4 students) of 8-9 year old students. Items from all of the attitude domains were presented individually to students. In order to ascertain both readability and comprehension, students were asked to read out an item, explain what they thought the attitude item was asking them, and where necessary, suggest the words that should be replaced, and possible replacement words. Students from the last two schools were asked to look at both the original items and, where applicable, the suggested re-worded item (established from the previous focus groups). The readability and comprehension of the re-worded items were established through this additional process.

Pilot II – Validation and Norming of Attitude Items

After receiving Ministry feedback of the proposed final item wording, items were combined and developed into the Student Attitude Questionnaire (SAQ). This scale was administered to 400 students (51.8% females, 48.2% males) across a representative (target age population, gender, ethnicity, decile) group. Participants completed the 64-item SAQ consisting of the five domain scales measuring engagement (6 items), motivation (26 items), interest (18 items), self-regulation (6 items), and self-efficacy (8 items). Items were rated on a 4-point response scale ('Very Unlike Me', 'Unlike Me', 'Like Me', 'Very Like Me'). In addition to attitude item responses, students also supplied relevant demographic information (gender, student year, and ethnicity).

Analysis of this data was conducted in order to establish norming information in relation to these attitude items. After the initial descriptive analysis to establish the structure of the data, a mean analysis was conducted at each interaction (e.g., engagement by student year) to ascertain any differential responding based on specific student demographics. Comparative analysis was conducted to examine any responding differences between pre-existing attitudinal data and the new attitude domain data collected in this pilot. In addition, the reliability and validity of attitude domains were established. The analysis produced initial psychometric information for these domains and norming information.

5. Reporting Attitude Domains

With the ability to select different attitude sets, it would be desirable to be able to view the outcomes of these attitudes questions and report against achievement. The relationship between motivation, interest, self-regulation, and engagement towards a subject, and the achievement in a subject could be valuable information.

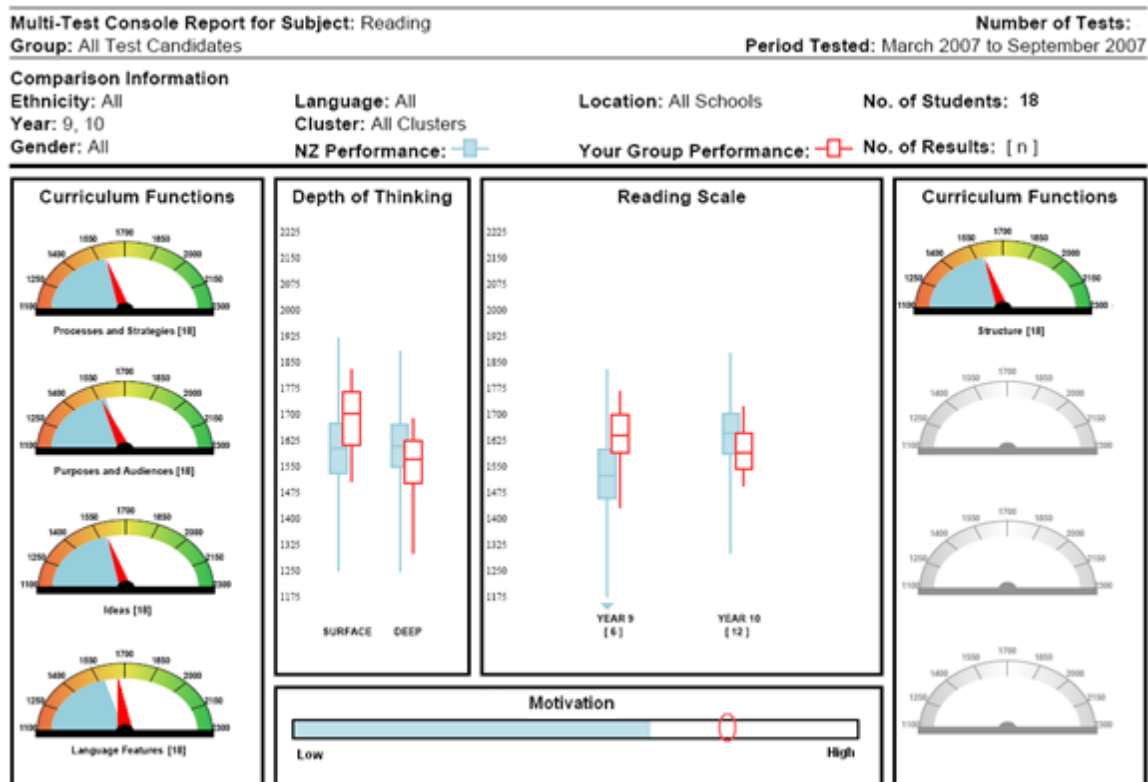
Attitudes are currently reported on the Console Report, as a class average against a national norm, and in the Tabular Report, as a numerical average for each student. The new attitude domains will continue to be reported on the Console Report and the Tabular Report, but also on the Individual Learning Pathways Report on a dial against national norms.

Reporting Formats

Console Report

This Console Report is the same as the current report, with the differences being in the attitude box (see Figure 1). The four smiley faces are replaced by 'low' - 'high' to accommodate the different attitude sets at a generic level. This reports more accurately on the attitude, e.g., low interest to high interest, low motivation to high motivation, etc. The actual attitude set selected for the test is recorded as the title instead of 'attitude'. The class average is reported as a red oval (+/-) against national norms.

Figure 1. Console Report with modified attitude box

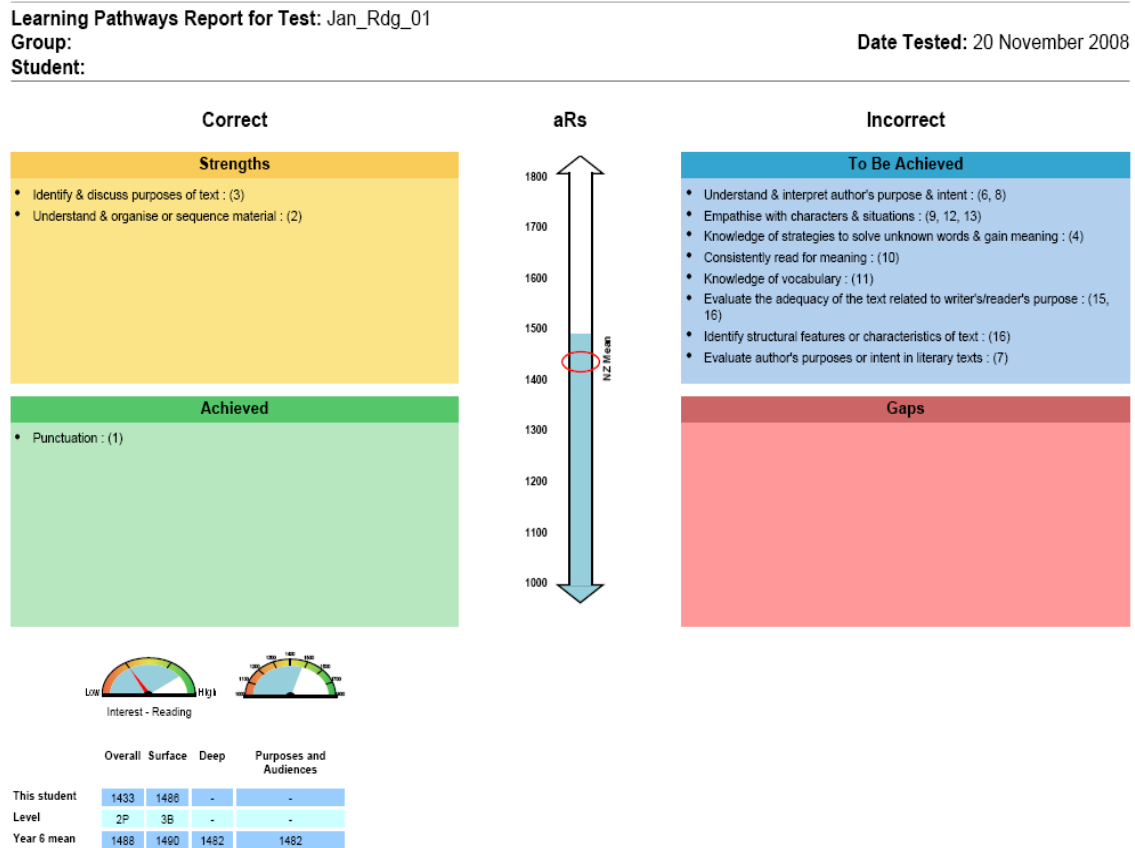


When reporting on multiple tests, and the attitude sets are different for these tests, the attitude box will appear empty, as it is not psychometrically sound to aggregate responses across attitude sets.

Individual Learning Pathways Report

Presently the Individual Learning Pathways Report does not report on attitude. This will be added as a single dial and reported as a mean against national norms (see Figure 2).

Figure 2. Individual Learning Pathways Report with attitude dial



Appendix A: Attitude Measures Summary

Construct	Title	Author	Publication Date	Subscales	Purpose	Overview
Engagement	PISA	OECD Programme for International Student Assessment	2000	Sense of belonging (6 items), Student participation (1 item)	Based on the affective (sense of belonging) and behavioural (participation) components of student engagement	<p>Self-report questionnaire uses a 4-point Likert scale item format to measure students' sense of belonging, and a 4-point 1-4 scale to measure student attendance.</p> <p>Designed for use with 15 year old students the sense of belonging items show strong factor structure and inter-item correlations. The student participation aspect of the measure consists of only one item that measures student attendance. Authors acknowledge that this measure (1 item) has a narrow focus and needs to be more extensive.</p>
Interest	KIM Questionnaire	Streitlien, Wiik, & Brekke	2001	<p>13: Mathematics as a subject (16 items), Learning Mathematics (14 items), Mathematical Ability (11 items), Experiences (4 items), Teaching of Mathematics (17 items), Learning a new topic (8 items), Environment in Class (10 items), Teaching Tools (6 items), Computer Use (20 items), Importance of Mathematics (8 items), Evaluation of Teacher (10 items), & Mathematics and the future (2 items)</p> <p><i>5-point Likert scale</i></p>	Based on catch vs. hold components where items have a distinction between enjoyment (catch) and a substantive interest (hold) (Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000)	<p>Self-report questionnaire uses a 5-point Likert scales item format to measure students study beliefs and attitudes in relation to Mathematics.</p> <p>Designed for use with Grades 7+</p>

Construct	Title	Author	Publication Date	Subscales	Purpose	Overview
Motivation	Inventory of School Motivation	McInerney, Roche, McInerney, & Marsh	1997	10: Perceived Goals (7) - Task-effort, Competition, Power, Affiliation, Social concern, Recognition, Token Reward; Sense of Self Factors (3) - Self-esteem, Sense of Competence, Sense of Purpose <i>5-point Likert scale</i>	Assesses the global dimensions of Maehr's Personal Investment model which investigates a student's personal incentives in their schoolwork (perceived goals), and their perceptions, beliefs, and feelings related to who they are as an individual in their school context	The broad dimensions of this scale have seen it applied to students from a variety of ethnic groups (e.g., Navajo American Indian, Lebanese, Chinese, and Australian). The 37-item self-report questionnaire uses a 5-point Likert scale item format to measure the two subscales (personal goals and sense of self) that are represented by ten subscales (Task-effort, Competition, Power, Affiliation, Social concern, Recognition, Token Reward; Sense of Competence, Sense of Purpose) respectively. Has been used in numerous studies either in full or specific subscales.
	Motivation for Reading Questionnaire	Wigfield & Guthrie	1997	11: Reading-efficacy, Reading Challenge, Importance, Intrinsic Motivation (Reading Curiosity & Reading Involvement), Extrinsic Motivation (Competition in Reading, Recognition for Reading, Reading for Grades), Social (Compliance) Work Avoidance <i>1-4 rating scale ('very different from me' to 'a lot like me')</i>	A self-report scale designed to establish reading motivation	

Construct	Title	Author	Publication Date	Subscales	Purpose	Overview
Self-regulation	Motivated Strategies for Learning Questionnaire (MSLQ)	Pintrich, Smith, Garcia, & McKeachie	1993	2 sets of subscales: Motivation, Learning Strategies <i>7-point scale (labelled only at its end-points)</i>	Developed from a cognitive and motivational theoretical framework. Pintrich suggested that both motivational and cognitive factors should be taken into consideration when examining academic performance.	
Self-efficacy	Reader Self-Perception Scale (RSPS)	Henk & Melnick	1992	4 subscales	Based on Bandura's (1977, 1982) theory of perceived self-efficacy – specifically progress, observational comparison, social feedback & physiological states	Self-report measure of reading self-perception

Appendix B: Final Attitude Items

Attitude Sets available for Mathematics

Attitude – General

1. I like maths at school.
2. I am good at maths.
3. My teacher thinks I am good at maths.
4. My Mum and Dad think I am good at maths.
5. I enjoy doing maths in my own time (not at school).
6. I enjoy doing things in maths that I haven't tried before.

Engagement – General

1. At school, I feel like I am included in things.
2. I make friends easily at school.
3. School is a place where I feel I belong.
4. I do not feel awkward and out of place at school.
5. Other students seem to like me at school.
6. I do not feel lonely at school.

Motivation – General

1. I try hard to make sure that I am good at my school work.
2. When I am improving in my school work I try even harder.
3. The harder the problem the harder I try.
4. I try hard at school because I am interested in my work.
5. I work hard to try and understand new things at school.
6. I am always trying to do better in my school work.
7. I like being given the chance to do something again to make it better.
8. I try harder when schoolwork is interesting.

Motivation – Mathematics

1. It is very important to me to be good at maths.
2. I try to get more maths answers right than my friends.
3. I like hard, challenging maths.
4. I do as little school work as possible in maths.
5. I like to help my friends with their maths school work.

6. I like it when the maths examples are hard.

Interest - Mathematics

1. I think maths is exciting and interesting.
2. I never get tired of doing maths.
3. I like to do and think about maths outside of school.
4. I think maths helps me to understand life.
5. I think that maths helps people make important decisions.
6. Maths is not boring.

Self-Regulation – General

1. During class time I pay attention most of the time.
2. When reading for this subject, I make up questions to help my focus.
3. When I become confused about something I'm reading for this subject, I go back and try to figure it out.
4. I ask myself questions to make sure I understand the material that I've been studying in class.
5. When studying for this subject I try and work out which concepts I don't understand well.
6. If I get confused taking notes in class, I make sure I sort it out afterwards.

Attitude Sets available for Reading

Attitude – General

1. I like reading at school.
2. I am good at reading.
3. My teacher thinks I am good at reading.
4. My Mum and Dad think I am good at reading.
5. I enjoy reading in my own time (not at school).
6. I like going to the library to get something to read.

Engagement – General

1. At school, I feel like I am included in things.
2. I make friends easily at school.
3. School is a place where I feel I belong.
4. I do not feel awkward and out of place at school.
5. Other students seem to like me at school.
6. I do not feel lonely at school.

Motivation – General

1. I try hard to make sure that I am good at my school work.
2. When I am improving in my school work I try even harder.
3. The harder the problem the harder I try.
4. I try hard at school because I am interested in my work.
5. I work hard to try and understand new things at school.
6. I am always trying to do better in my school work.
7. I like being given the chance to do something again to make it better.
8. I try harder when schoolwork is interesting.

Motivation – Reading

1. It is important to me to be a good reader.
2. I visit the library a lot.
3. I like hard, challenging books.
4. I do as much reading school work as possible.
5. If the teacher talks about something interesting, I might read more about it.
6. I like reading something when the words are hard.

Interest - Reading

1. I think reading is exciting and interesting.
2. I never get tired of reading.
3. I like to do lots of reading outside of school.
4. I think reading about things helps me to understand life in general.
5. I think that reading about things helps people make important decisions.
6. Reading is not boring.

Self-Regulation – General

1. During class time I pay attention most of the time.
2. When reading for this subject, I make up questions to help my focus.
3. When I become confused about something I'm reading for this subject, I go back and try to figure it out.
4. I ask myself questions to make sure I understand the material that I've been studying in class.
5. When studying for this subject I try and work out which concepts I don't understand well.
6. If I get confused taking notes in class, I make sure I sort it out afterwards.

Self-Efficacy – Reading

1. I am a good reader.
2. I can read faster now than I could before.
3. When I read, I can figure out words better than I could before.
4. I can recognise more words than I used to.
5. I find reading easier than it used to be.
6. When I read now, I don't have to try as hard as I used to.
7. I can read better now than I could before.
8. I can understand what I read better than I could before.

Attitude Sets available for Writing

Attitude – General

1. I like writing at school.
2. I am good at writing.
3. My teacher thinks I am good at writing.
4. My Mum and Dad think I am good at writing.
5. I enjoy writing in my own time (not at school).
6. I am good at spelling.

Engagement – General

1. At school, I feel like an outsider (or left out of things).
2. I make friends easily at school.
3. School is a place where I feel I belong.
4. I feel awkward and out of place at school.
5. Other students seem to like me at school.
6. I feel lonely at school.

Motivation – General

1. I try hard to make sure that I am good at my school work.
2. When I am improving in my school work I try even harder.
3. The harder the problem the harder I try.
4. I try hard at school because I am interested in my work.
5. I work hard to try and understand new things at school.
6. I am always trying to do better in my school work.
7. I like being given the chance to do something again to make it better.

8. I try harder when schoolwork is interesting.

Motivation – Writing

1. It is very important to me to be good at writing.
2. I try to get higher marks for my writing than my friends.
3. I like hard, challenging writing exercises.
4. I do as little writing school work as possible.
5. I have favourite subjects that I like to write about.
6. I like it when writing exercises are hard.

Interest - Writing

1. I think writing is exciting and interesting.
2. I never get tired of writing.
3. I like to do lots of writing outside of school.
4. I think writing about things helps me to understand life in general.
5. I think that writing things down helps people make important decisions.
6. Writing is not boring.

Self-Regulation – General

1. During class time I pay attention most of the time.
2. When reading for this subject, I make up questions to help my focus.
3. When I become confused about something I'm reading for this subject, I go back and try to figure it out.
4. I ask myself questions to make sure I understand the material that I've been studying in class.
5. When studying for this subject I try and work out which concepts I don't understand well.
6. If I get confused taking notes in class, I make sure I sort it out afterwards.

Appendix C: New General Attitude Questions – with New Response Scale

The screenshot shows a web browser window titled "Test Player Preview - Windows Internet Explorer". The page header is green and contains the text "e-asTTle", "PENDING TEST: NOT YET ACCEPTED", and "Question: 01 to 06 of 06". Below the header, there are navigation links for "Attitude Questions" and "Test Questions".

The main content area is titled "Attitude Questions" and includes a sub-header "01 to 06". The instruction reads: "Choose a circle to show how much each sentence is like you".

	Very Unlike Me	Unlike Me	Like Me	Very Like Me
	1	2	3	4
I like reading at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am good at reading.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My teacher thinks I am good at reading.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My Mum and Dad think I am good at reading.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy reading in my own time (not at school).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like going to the library to get something to read.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

At the bottom of the browser window, the taskbar shows several open applications: Start, Inbox - Microsoft Outlook, Attitude Domains, Document1 [Compatibl..., Document2 - Microsoft..., Ministry summary docu..., e-asTTle - View Test In..., and Test Player Preview... The system clock shows 1:10 PM.