

Strategic Help-Seeking  
by Secondary ESL Students in Reading Contexts

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Each year, tens of thousands of immigrant children and international students come to live or study in Canada. The majority of these immigrant and international students receive supplemental support in schools to assist them in enhancing their English language proficiency and navigating the educational system in Canada. Typically designated as “English-as-a-second language” (ESL) learners (even if they may already speak two or more other languages), in many contexts these students now represent a significant proportion of the student population. For example, in 2005-06 within the Province of British Columbia (BC), the proportion of designated ESL students encompassed 9.7% (62,950) of kindergarten to Grade 12 students (BC Ministry of Education, 2005b). In the school district where our research was conducted in Southwestern BC in that same year, 28% of the students were designated ESL (BC Ministry of Education, 2005a).

Students who arrive from countries outside of Canada may struggle because they are unfamiliar, not only with the English language, but also with Canadian culture. These students may be particularly challenged by the learning through reading (LTR) tasks so prevalent in secondary school settings (Butler & Cartier, 2005; Cartier, 2000), in which students are expected to acquire knowledge about a topic through reading one or more texts. These tasks not only require English proficiency sufficient to understand academic material, but texts are also generally written in ways that assume culture-specific prior knowledge or understandings. Students without the relevant background may be challenged to interpret an author’s meaning (Hernandez Sheets, 2005). At the same time, students from other cultures may bring to schools alternative conceptions

about what learning from text is about (Hernandez Sheets, 2005), and mismatches between students' and teachers' perceptions of expectations can also undermine students' academic success (Butler & Cartier, 2004; Butler & Winne, 1995). Thus, to support success by ESL learners in Canadian schools, it is important to understand better how ESL students perceive and engage in LTR.

The research reported here is drawn from a larger project in which we are investigating how secondary students understand and engage in LTR tasks (Butler, Schnellert, Cartier, Gagnon, Higginson, Giammarino, et al., 2006). In that project, we are adopting a situated view of academic performance to examine how what individuals bring to an academic setting interacts with features of multiple contextual layers to shape learners' engagement in academic work, in particular LTR. In this research report, we focus attention on one piece of that project to compare the LTR engagement of secondary ESL learners to that of their non-ESL peers. Within that context, we also narrow attention further to describe one aspect of self-regulated learning (SRL) of particular importance to ESL learners. That is, we investigate how secondary ESL learners think about and engage in strategic help-seeking (HS) in the context of LTR activities.

#### Theoretical Framework and Literature

The theoretical framework for this study embeds an integrative model of HS (Tang, 2005) within a model of strategic SRL as situated in context (e.g., Butler, 1995, 1998; Butler & Cartier, 2004; Cartier & Butler, 2004). Our overarching model of SRL (see Figure 1) suggests that how students engage in academic work (e.g., LTR in Humanities or Science) depends on the interaction between what individuals bring to settings (e.g., language proficiency, cultural background, learning history and experiences, strengths, challenges, interests) and multiple layers of context (sociocultural/historical, neighbourhood, school, immediate academic environment, domain, task).

This in our larger project, and in the research reported here, we focus attention on how individual-context interactions shape students' participation in learning.

Our theoretical framework also suggests that self-regulated learners engage flexibly and reflectively in a dynamic and recursive cycle of cognitive and metacognitive activities. When presented with an LTR activity comprising constituent tasks (e.g., reading, learning, representing knowledge), self-regulated students take a moment to carefully interpret task demands and define performance criteria (Butler & Cartier, 2004; Butler & Winne, 1995). This step is critical to successful self-regulation, given that students' perceptions of task demands drive all decisions during learning. Next, self-regulated learners plan how to best use time and resources to accomplish task requirements, enact selected cognitive strategies (e.g., for reading and learning), self-monitor and self-evaluate outcomes based on task criteria, and adjust approaches as needed. Thus, characterizing students' engagement in LTR requires tracing how they think about and engage in these dynamic cycles of activity.

But our model of SRL also suggests that students' engagement in academic work is mediated by their (a) extant knowledge (e.g., about domain under study; about useful strategies) (Alexander & Judy, 1988; Pressley & Afflerbach, 1995), (b) conceptions about academic work (Brown, Campione, Ferrara, Reeve, & Palincsar, 1991; Butler & Cartier, 2004; Cartier, 2000; Flavell, 1979), (c) motivationally-linked perceptions and beliefs, such as self-perceptions of competence and control, perceptions about task value, and attributions for successful and unsuccessful performance (Bandura, 1993; Borkowski, 1992; Pintrich & Schrauben, 1992; Schiefele, 1991; Schunk, 1991, 1994; Viau, 1994, 1999), and (d) emotions experienced while learning (Corno, 1993, 1994; Meichenbaum & Biemiller, 1992; Zimmerman, 2000).

For example, students' conceptions about LTR (e.g., as requiring linking information across texts and/or memorizing information) will shape their interpretation of task requirements,

strategies selected for learning, and criteria used to self-monitor and self-evaluate (Butler, 1999; Butler & Cartier, 2004). Students with little sense of control over outcomes are less likely to persist in the face of challenges (Bandura, 1993; Schnunk, 1994; Zimmerman, 2000). Students who experience stress or frustration may give up if they do not enact strategies for managing motivation and emotions (Corno, 1993, 1994). Finally, perceptions of task requirements, motivational perceptions and beliefs, and emotions may combine to shape the personal objectives students set while learning, which might be task-focused (e.g., to learn), but could also reflect disengagement (e.g., an objective to read as little as possible), an external focus (e.g., a desire to please or impress others), or a social goal (e.g., to work with friends). Thus, to create profiles of LTR engagement for ESL students and their peers, we need to examine how knowledge, perceptions, beliefs, conceptions, emotions, and objectives shape engagement in learning.

In the larger research project from which this more specific study emerged (see Butler, Cartier, Schnellert, & Gagnon, 2006), we attempt to capture profiles of LTR engagement that encompass the multiple, interacting components depicted in our model of SRL (see Figure 1). We construct profiles at two levels. At a first level we construct nuanced profiles of students' responses related to each of our model components (e.g., a profile of personal objectives; a profile of planning). At a second level, we construct cross-componential profiles to capture interrelationships between emotions, motivation, cognition, and self-regulation in students' LTR. In this paper, we draw on those analyses to contrast patterns for ESL and non-ESL students.

In this paper, we also elaborate our model of *SRL in Complex Activities* to consider the role of HS as one of the SRL strategies students may use to cope with challenges they experience in order to continue their engagement in LTR. Like SRL more generally, academic HS is a dynamic and cyclical process. To begin, a need for help is often cued by a student's awareness of being perplexed and a perceived need for help (Dillon, 1998). Then, under the mediation of learner

characteristics (e.g., being sociable or shy), resource characteristics (e.g., friendly or knowledgeable teachers or peers), and contextual factors (e.g., the subject under study, instructional practices, seating arrangements; see Ryan & Pintrich, 1998), students weigh the perceived costs (e.g., public embarrassment) and benefits (e.g., achieving a better grade) of asking for help. These multiple interacting factors affect the student's intention to seek help or not (Karabenick & Knapp, 1991), the selection of resources (e.g., seeking help from a teacher, a friend, a dictionary; see Ryan, Gheen, & Midgley, 1998), and the types of information requested (e.g., explanations, examples, verification of answers; see Karabenick, 2001; Nadler, 1998). After obtaining a response, the help seeker evaluates outcomes and decides whether or not to engage in a new HS cycle (Tang, 2005).

Ideally, students seek help strategically in order to learn effectively. That is, students will recognize occasions when help is needed and adaptively seek appropriate help from suitable resources to solve problems and assist them in learning (adaptive HS; e.g., Newman, 1998). However, research suggests that students do not always seek help in ways that spur maximal learning. For example, rather than asking for hints or trying to debug a problem independently before asking for help (autonomous HS; see Butler, 1998), a student might ask for answers so as to solve a problem as quickly as possible (dependent HS; e.g., Nadler, 1998). Students also may not seek needed help so as to avoid attracting attention or being laughed at (avoidant HS; e.g., Newman & Goldin, 1990).

Even when asking for help, students may choose HS resources for reasons that are or are not ideal for supporting learning. For example, they might consider the expertise of the teacher (formal HS), but they might also rely on relationships with friends (informal HS; Karabenick, 2001; Ryan, Gheen, & Midgley, 1998). The language used for communication might also have an impact, given findings showing that a sample of students with higher verbal competence had significantly

higher levels of seeking peer assistance (Zimmerman & Martinez-Pons, 1990). Given this theoretical perspective, in the research reported here, we examined how HS fit into the strategic LTR profile of ESL students and their peers. Our goal was to determine the extent to which ESL learners self-reported HS, and how that HS was related to other motivational, emotional, cognitive, and metacognitive components of self-regulation.

In terms of particular expectations in this research, we expected that ESL students might ask for help more frequently than their peers. We anticipated that they would be more likely to struggle with LTR tasks given their limited English language proficiency coupled with differences in cultural background and experiences. Thus, we suspected that ESL learners would be likely to perceive a need for help during key phases in SRL engagement, for example when defining task requirements, selecting and implementing reading and learning strategies, and/or having trouble constructing meaning from text. However, prior research has also found a positive relationship between language proficiency and HS among students in grades 5, 8, and 11 (Ryan & Pintrich, 1997). Thus, we were not sure if ESL students' limited language proficiency might prevent them from seeking help when needed. We investigated this question both by contrasting levels of HS for ESL and non-ESL learners, and by examining how HS related to other aspects of SRL engagement (e.g., adjusting strategies used in the face of challenges).

More generally, our theoretical model suggested the need to consider how HS, like other self-regulating strategies, might be mediated by other components of self-regulated engagement as depicted in our model. For example, applying and extending Weiner's attribution theory in a study on HS, Ames and Lau (1982) defined help-relevant attributional patterns as those which reflected perceived controllability and malleability over outcomes (e.g., attributions to effort or strategies). They found that college students who did poorly on a first test and endorsed a help-relevant pattern of attributions were more likely to attend review sessions than were those who also did poorly but

endorsed a help-irrelevant pattern of attributions. Thus, in our study we related HS to motivationally-linked perceptions and beliefs, such as attributions, to evaluate whether a sense of control over outcomes was linked to HS for ESL students and their peers.

Similarly, our model suggests that HS might be related to an interaction between students' emotional reactions to tasks and emotion control during learning. For example, applying attachment theory to HS, Mikulnicer and Florian (1995) found that, among the students in their sample: (1) secure individuals used HS adequately as a primary coping strategy when stress increased, (b) individuals prone to avoiding tasks underutilized HS, actually decreasing HS when stress increased, and (c) anxious-ambivalent individuals were inconsistent in their utilization of HS, in that their use of HS was affected by situational factors such as the identity of a helper and the degree to which the stress was shared by others. Consistent with our integrated model of HS as a form of SRL, these findings highlight individual-context interactions in shaping strategic HS. They also demonstrate the necessity of examining how HS links to emotions, motivation, and self-regulation (e.g., emotion control), a central focus in our study.

Note that prior research has also linked differences in HS to gender. For example, Nadler (1991) found that females were more willing to and did seek more help than males, although findings have not always been so clear (see Arbreton, 1998). Thus, in our study we investigated gender differences in HS within our entire sample. We also examined whether gender interacted with our ESL vs. non-ESL grouping to account for differences in patterns of SRL and HS.

Finally, in our larger research project we are relating the quality of students' strategic profiles to their performance on LTR tasks. In this research, we focus more specifically on the relationship between HS and performance. Prior research has revealed mixed findings on the relationship between HS and achievement among Chinese college students. For example, Hsu (1997) found no significant correlation between HS and achievement for a sample of

distance-education students in Taiwan who self-reported high levels of HS, whereas Gan (2004) found significant correlations between HS and English test scores for students in China whose HS was relatively low. Thus, in the research reported here, we examine relationships between HS and achievement as mediated by gender, English language proficiency, and multidimensional profiles of engagement in LTR activities.

### Purpose and Research Foci

Although much has been learned through research in mathematics classes or in laboratories about student HS patterns, influences on HS intentions, and choices of helpers (Butler, 1998; Ryan & Pintrich, 1997), more field studies are needed to investigate ESL students' use of strategic HS when LTR. To fill this gap, in this research we examine the nature of strategic HS, as a form of self-regulated engagement, for students who vary in English language proficiency and cultural background and by gender and context. We situate our examination of HS in a model of SRL, and within that framework investigate relationships among self-reported HS and multiple components of SRL profiles including emotions, motivation (e.g., self-perceptions of competence and control, attributional beliefs, task value, personal goals), cognition (e.g., use of reading and learning strategies), self-regulation (e.g., planning, self-monitoring, self-evaluating, adjusting, motivation/emotion control), and reading achievement. In doing so, we advance understanding about how individual differences interact within context to shape strategic HS, and about how HS fits more generally into profiles of LTR engagement.

### Method

This study was embedded in a large multiple-year research project that is exploring secondary students' engagement in SRL in learning through reading (see Butler et al., 2006). Started in the Fall, 2004, the larger project is being conducted in a multicultural, urban school district in Western Canada.

*Participants*

Our larger research project involved four secondary schools (see Table 1), three that enrolled students in grades 8 to 12 and a fourth that enrolled students in grades 7 to 9. Participating students were assessed within 31 different classrooms wherein instruction focused on a range of subject areas (see Table 1). Classrooms were also situated within different programs in the schools. In one school, students could select between a Fine Arts and a Science Academy. In two schools, students could participate in the regular English program or in French Immersion. Thus, the structure of our project allowed us to examine how context was related to LTR engagement and reading performance across several levels (e.g., by class, subject area, grade level, program, and school; see Butler et al., 2006).

Across the entire sample of 646 students in our larger study, 30 unique languages were identified as students' first language or the language spoken in their home. Fifty-one percent of students reported speaking English as their primary first language; 37% reported first speaking Chinese, Mandarin, Cantonese, or Taiwanese; less than 2% reported a primary first language in the other 26 categories. Our sample roughly reflected the home-language map in the school district where our project is being conducted (BC Ministry of Education, 2005a), where the home language for 44% of students is English, and where 37% of students' home languages are from China. Across the entire sample, 17% of students ( $n = 108$ ) were designated as ESL.

Participants in this study were a subsample of 98 ESL learners (46 males, 52 females) and 451 non-ESL learners (217 males, 234 females). Note that we excluded for this study all students who were receiving learning assistance (because of a learning disability and/or because they were performing significantly below grade level), because preliminary analyses suggested that HS and LTR profiles for these struggling learners differed from those of their peers. Thus, we eliminated this potentially confounding variable from our comparison of ESL and non-ESL students. Note

that, while also participating in classes designed specifically for ESL students, students with limited English proficiency were also engaged in regular classes with non-ESL peers.

### *Measures*

Two measures were employed in the larger project. First, *the Learning Through Reading Questionnaire* (LTRQ) is a self-report measure designed to assess students' perceptions about LTR activities and their engagement within them (Butler & Cartier, 2005; Cartier & Butler, 2004). The questionnaire contains 22 main questions focused on each of the components of our SRL model, including students' background knowledge (e.g., about a topic under study), motivational perceptions and beliefs (self-perceptions of competence and control, task value, attributions), emotions, task interpretation, personal goals, cognitive strategy use (reading and learning strategies), and use of self-regulating strategies (planning, monitoring, adjusting, managing emotions/motivation). Students refer to a concrete, curriculum-based example of an LTR task while answering the questionnaire. They think about the LTR task they were shown when describing what they typically think and do in that kind of activity.

For example, a main LTRQ question on "planning" opens with the following stem: *Before I begin the activity of reading to learn, I start by ...*, and is followed by a series of items (e.g., *I plan my time; I choose a method for completing the activity; I just read*). For each item, students indicate on a scale from 1 (*almost never*) to 4 (*almost always*) the frequency with which they engage that action while completing an LTR activity like the one in the example. While for all questions a 4-point scale was used, for just three questions the scale dimension differed. For example, for a question on prior knowledge, students' responses could range from *almost nothing* to *a lot*. Note that we interpret LTRQ responses as reflecting students' perceptions about LTR tasks and their engagement within them, not as reflecting actual SRL behaviour.

For the purposes of this study, the LTRQ included a section asking students for background information. Students were asked to provide information about their gender, the grade level and subject in which they were working, their first language(s) and the language(s) spoken in their home, and the length of time they had lived in Canada. Additional information about students' participation in learning assistance and ESL designation were also available on class lists.

The second measure used in the larger project was the *Performance-Based Assessment* (PBA). The PBA is a multidimensional, curriculum-based measure of students' reading performance that was collaboratively developed by teachers and researchers based on the BC Provincial Performance Standards Rubrics (BC Ministry of Education, 2002). The PBA was designed to assess dimensions indicative of grade-appropriate performance when reading informational text. While varying slightly by grade, dimensions assessed by the PBA focused both on strategy use (e.g., making predictions, word skills, checking understanding, using text features) and meaning derived from text (e.g., identifying main ideas and details, showing how information is structured, inferencing). A *snapshot* score was also generated to capture students' performance across both types of dimensions (see Butler et al., 2006).

PBAs were tailored to students' grade level and the subject area being studied. Topics and texts that students read were drawn from the curriculum. Teachers and researchers worked together to construct the PBA questions. Students responded to questions in writing, or, for a few designated questions, orally to a teacher. In the latter case, teachers wrote down students answers, along with their observations.

### *Procedure*

Participating teachers were given instructions on the administration of the LTRQ and the PBA. These two instruments were administered twice each school year (in the fall and at the end of the year) in two consecutive class blocks. The LTRQ was administered in a first block; the PBA

was typically administered in the next class session. Teachers typically read the LTRQ out loud as students responded to questionnaire items. For PBAs, students were asked to read one or more texts independently and then to answer the written questions. After students had finished the reading, one or more teachers circulated through the room to ask students the orally-presented questions. Data entry for the LTRQ was done by the research team which generated reports for teachers (see Schnellert, Higginson, & Butler, 2006). Scoring of the PBA was done collaboratively by school-based teams of teachers in collaboration with researchers following criteria available from the BC Ministry of Education (2002). Students' responses on each dimension and for the snapshot were rated on a 7-point scale, ranging from *not yet meeting expectations* to *exceeds expectations*. We used the snapshot score in this study as a task-specific indicator of overall reading performance (see Butler et al., 2006). Note that, while all students completed PBAs as part of the larger project, data for only 199 students overall were available for the purposes of this report.

### *Data Analyses*

Data from the LTRQ were analyzed at three levels. At a first level, frequency analyses of students' responses to questionnaire items were conducted to create construct-level profiles for key components in our model of *SRL in Complex Activities*. For this research report, we focused on five components most central to our discussion (for a complete report, see Butler et al., 2006). Three of these five components were SRL activities during which students might seek help (i.e., planning, adjusting, and managing emotions/motivation). The remaining two (i.e., personal objectives and cognitive strategies) were chosen because of potential relationships with HS. To create construct-level response profiles, we graphically displayed the percentage of students who selected one of the top two choices (i.e., *often* or *almost always*) for each LTRQ item related to a

given model component. We used a chi-square test to evaluate the statistical reliability of differences between responses of ESL and non-ESL students.

At a second level, a series of exploratory factor analyses were conducted on the full set of items to identify dimensions underlying responses to the LTRQ (see Appendix A). The dimensions were constructed to be equally reliable across four different ways of parsing our overall sample (i.e., using data from all students who completed the pretest assessment, all students who completed the posttest assessment, the subset of students who completed both assessments, using their pretest data, and the same pre-post group, using their posttest data; see Butler et al., 2006 for details). Based on pretest data for all participating students ( $n = 655$ ), estimates of internal consistency (Cronbach's Alpha, see Appendix A) were greater than .60 for all dimensions included in the analyses reported herein (see column 5, pretest all data).

The 23 LTRQ dimensions and the PBA snapshot score were used in subsequent analyses. At this second level, we employed t-tests to examine group differences (ESL vs. non-ESL) in LTRQ dimensions and PBA scores. We also used ANOVAs to examine mean differences between ESL and non-ESL students as they interacted with gender. We computed Pearson correlation coefficients to investigate the association between HS or PBA snapshot scores and LTRQ dimensions for ESL and non-ESL students separately.

At a third level, we performed a series of two-step hierarchical cluster analyses to identify four distinct cross-componential profiles of LTR engagement (i.e., learning profiles), encompassing coherent patterns across the 23 LTRQ dimensions, including HS (see Butler et al., 2006 for details). In a set of correlational analyses within each cluster, we calculated Pearson correlation coefficients to look for relationships between HS and other LTRQ dimensions as well as PBA snapshot scores. We also used chi-square tests to test for group differences in the

percentage of students who fell into each cluster, and to examine how cluster membership for ESL and non-ESL students might be mediated by gender and context.

In our analyses of questionnaire data, we set our criterion for the significance level at an alpha of .05. However, for exploratory PBA analyses where our sample sizes were smaller, especially for the ESL group ( $n = 28$ ), we relaxed our criteria to .10 (two-tailed). We report significance levels and effect sizes as applicable in each of our tables and figures.

## Results

In the sections to follow, we report our findings from each of our three levels of data analysis. Collectively, our findings inform understanding about how ESL students think about and engage in SRL in LTR activities when compared with their non-ESL peers and about where help-seeking fits into students' SRL engagement in the activities.

### *Construct-Level Profiles of LTR Engagement*

In this first section of our results, we compare construct-level profiles for ESL and non-ESL students for five of our model components: personal objectives, planning, adjusting approaches to learning, managing motivation and emotions, and cognitive strategies.

*Personal objectives.* Figure 2 depicts the percentage of ESL and non-ESL students who reported holding eight possible personal objectives *often* or *almost always* while learning through reading. Overall, we observed a similar profile in personal goals across the two groups; that is, the majority of the students ( $f = 78 - 92\%$ ) reported positive, task-focused objectives (*do a good job, understand what I am reading, learn about the subject, and get good marks*). Only a small proportion of students ( $f = 9 - 24\%$ ) endorsed objectives that might be associated with less productive engagement in learning (*finish as quickly as possible, read as little as possible*) or an external focus (*please or impress other people*). Observed group differences were that a greater proportion of ESL students endorsed the less productive objectives to *read as little as possible* and

*please or impress other people*, whereas fewer ESL students reported seeking to *do a good job and get good marks*.

*Planning*. As can be seen in Figure 3, we also found a similar overall construct-level profile for ESL and non-ESL students on self-reported planning. We noted that the overall level of reported planning was not extremely high for either group. The approaches to planning that were most frequently endorsed ( $f = 52 - 67\%$ ) included use of no strategy at all (*just read the text*), *thinking about the instructions*, and *checking the length of the readings*. Only a small proportion of students ( $f = 24 - 39\%$ ) reported regular use of more active planning strategies (*planning my time, choosing a method, making a plan*). But group differences were apparent in HS: A greater percentage of ESL students reported regularly asking for explanations about the activity or how to do it. Marginally significant ( $p < .10$ ) was the finding that fewer ESL students reported thinking about the instructions. One possible interpretation for this pattern is that some students with limited English proficiency may have been less comfortable reading and interpreting instructions independently, and so may have been more likely to ask for assistance. ESL learners may also have been less confident in their knowledge about or how to accomplish LTR activities successfully.

*Adjusting*. Figure 4 depicts the proportions of ESL and non-ESL students who reported using different kinds of adjusting strategies to cope with challenges experienced while learning through reading. Again, a similar overall profile emerged for both groups. HS was among the seven most popular strategies ( $f = 53 - 79\%$ ). Other most popular strategies were text-focused: *reread information, read more slowly, look at the titles, subtitles, graphs, tables, or pictures, and pay attention to words that I don't know*. Roughly half of the students ( $f = 45 - 53\%$ ) reported using better work management strategies (*use time better, use better methods*). However, strategies that required more active information-linking (*make links between information and make links between*

*what I read and what I know about the subject*) were endorsed by only a small proportion of students ( $f = 22 - 38\%$ ). Just under a third of students ( $f = 28 - 30\%$ ) reported *trying to memorize information* as a fix-up strategy. Overall, only a small number of students ( $f = 5 - 8\%$ ) reported *giving up* when facing difficulties. Two group differences were found in students' self-reported use of adjusting strategies: Fewer ESL students reported *rereading instructions* (77% vs. 67%); and, though marginally significant ( $p < .10$ ), a greater percentage of ESL students reported *looking back at an introduction or summary*. These findings are consistent with those on reported use of planning strategies and suggest that learners with limited English proficiency may rely less on written instructions to cope with reading difficulties and more on shorter, clear introductions and summaries to navigate longer, complex texts.

*Managing motivation and emotions.* When feeling stressed, worried, or fed up, both groups reported managing motivation and emotions similarly (see Figure 5). A reasonable proportion of students ( $f = 40 - 68\%$ ) reported using active managing strategies (e.g., *imagine how good I will feel after finishing*) to keep them engaged in LTR, and only a small proportion of students (about 10%) reported *stopping work and giving up*. The most popular strategy was *take a break and start again* (about 66%). About half of the students asked for help ( $f = 52 - 57\%$ ). The only statistically-reliable group difference in use of managing motivation and emotions strategies was in favour of ESL students, who were more likely to report *telling myself I can do it*. But an overall trend was that ESL learners reported slightly greater use of managing motivation and emotions strategies than their peer group, suggesting that many ESL learners perceived themselves to be using self-regulating strategies to manage emotions and motivation.

*Cognitive strategies.* Overall profiles of self-reported cognitive strategy use were also similar for the two groups (see Figure 6). Over 80% of the students favoured strategies that were text-oriented (*look at the titles, key words, pictures; pay attention to underlined or bolded words*)

and focused on finding main ideas (*pay attention to important ideas*). The second most popular set of strategies (over 50% on average) focused on: working with text (*read chapter summary, read word for word, underline important information*), rereading/repetition (*reread paragraphs, reread underlined phrases, repeat key words or facts in head*), constructing meaning (*think about what I already know about the subject, search for the meaning, make an image in my head*), and note-taking (*take notes on important ideas*). In general, the most active learning strategies (*summarize in my own words, think of examples, think of how I can apply what I read, regroup information by theme or subject, find links between information*) were endorsed by only 30 to 47% of the students.

Group comparisons revealed three interesting differences in reported strategy use between ESL and non-ESL students. First, a greater proportion of ESL students reported *looking at the table of contents* and *reading chapter summaries* than did their non-ESL peers. These findings were consistent with those on reported use of adjusting strategies, where ESL learners also reported using an introduction or summary to cope with reading difficulties. Second, fewer ESL students reported taking notes on important ideas (57% vs. 42%). A couple of interpretations are possible for this finding. For example, it is possible that ESL students were less comfortable with their written language proficiency and/or with dividing their attention between reading and taking notes in English. But it is also possible that ESL students did not perceive the importance or value of note-taking in an LTR activity.

Finally, the two groups reported using memorization strategies in different ways. Three times as many ESL students reported learning paragraphs by heart (30% vs. 11%), whereas non-ESL students were more likely to report memorizing key words, details, or facts (55% vs. 40%). Possible interpretations for this finding were that ESL students favoured a memorization strategy to compensate for challenges in understanding, extracting, or elaborating concepts in

paragraphs, or that ESL students understood the main concepts in what they were reading, but perceived a paragraph memorization strategy to be useful for retaining knowledge for future use (e.g., on tests). It is also possible that ESL learners held a conception about learning through reading as involving reproduction of ideas in text, contrary to the expectation in the BC Performance Standards that students actively build meaning to construct new knowledge.

*Summary.* What have we learned about ESL and non-ESL students' engagement in LTR by examining these five construct-level profiles? Our findings suggest that, in broad strokes, patterns of self-reported engagement for both groups were very similar. Certain positive trends could be observed. For example, the majority of the students reported adopting task-focused personal objectives when LTR (see Figure 2), and many students self-reported frequent use of a variety of potentially productive reading and learning strategies (see Figure 6). However, certain observed patterns were problematic. For example, students reported little use of active planning strategies (see Figure 3), and low use of the most productive learning strategies, both when building meaning from text (i.e., using cognitive strategies) and when facing challenges (i.e., adjusting). Only 50-60% of students reported using effective strategies for managing motivation and emotions. These findings suggest important and clear directions for assessment and intervention (see Butler et al., 2006).

But we also observed important differences in the responses of ESL and non-ESL students. For example, ESL students were more likely than peers to adopt a personal objective to *read as little as possible* (see Figure 2). Although only 17% of ESL students endorsed this objective *often* or *almost always*, it appears that some students with limited English proficiency were at risk for disengaging in reading. Other patterns suggested that ESL students might indeed be less comfortable with navigating text within a Canadian context. For example, ESL students were less likely to report accessing instructions while planning (see Figure 3) or coping reading difficulties

(see Figure 4). They were more likely to access summaries of text when reading (see Figure 6) and experiencing problems (see Figure 4), and to memorize paragraphs by heart (see Figure 6).

Another group difference was that more ESL students (roughly  $\frac{1}{4}$ ) endorsed a personal goal to *please or impress other people* (see Figure 2). In light of the majority of Chinese students in our overall sample, these externally-focused goals might reflect Chinese cultural values (Watkins & Biggs, 1996). In Chinese society, interdependence and collectivism are valued, which is shown in parents' avid involvement in and high expectations for their children's education. To work up to parents' expectations is part of children's duty. Thus, for Chinese educators, such external goals will be viewed as positive goals from an achievement perspective.

What did we learn about HS patterns for ESL students? About 70% of the students overall reported using HS as a coping strategy (see Figure 4). However, statistically-reliable differences in HS were observed in planning (see Figure 3), where ESL students were more likely than peers to rely on someone to explain the activity and how to accomplish it. Consistent with our expectations, this finding suggests that some ESL learners may have been uncertain about the requirements of LTR tasks and/or strategies for achieving them. Though not statistically reliable, trends were also that ESL students were more likely to ask for help when faced with challenges (see Figure 4), and to help in managing motivation and emotions (see Figure 5).

#### *LTRQ Dimensions and the PBA Snapshot*

In this section, we describe group differences in LTR engagement and outcomes, building from analyses into which we entered the 23 LTRQ dimensions (see Appendix A) and PBA snapshot as variables. First, we report mean differences in mean dimension and PBA scores for ESL and non-ESL learners. Then we examine the extent to which gender may have mediated these differences. Finally, we examine how relationships among the PBA, HS, and other LTRQ dimensions were similar or different between the ESL and non-ESL students.

*Mean differences between ESL and non-ESL students.* Table 2 presents means, standard deviations, t-tests of mean differences, and effect sizes for analyses comparing mean scores for ESL and non-ESL students across the 23 LTRQ dimensions and the PBA snapshot. We found that ESL students' ratings were higher on three positive dimensions associated with positive engagement (*task value, motivation/emotion control strategies, and strategies for working with text*). They were also higher on the *HS* dimension (reflecting responses related to HS across components of planning, adjusting, and managing motivation/emotion). Most troubling, however, were ESL students' significantly lower ratings on *perceptions of competence and control, controllable attributions, and positive personal goals*, coupled with higher ratings on negative dimensions reflecting disengagement from learning (*disengaged*), attributions for success to luck or task ease (*external attributions*), experiencing *stress and worry* while learning, and an *external focus* (on pleasing or impressing others). More encouraging, reading performance (as measured by the PBA *snapshot*) did not differ between the two groups.

These results were consistent with but elaborated the findings reported earlier based on a review of just five construct-level profiles. More complete dimension-level analyses drew out additional differences between ESL and non-ESL learners in their sense of control over learning outcomes (as reflected in perceptions of competence and control and attributional patterns) and experience of stress and worry during learning. It is thus not surprising that many ESL students reported generally higher use of HS and of emotion/motivation control strategies to help in addressing challenges and managing potentially intrusive emotions.

*Mean differences on LTRQ dimensions and PBA snapshot scores as mediated by gender.* We also conducted ANOVAs to test for interactions between group membership and gender in accounting for mean differences on the LTRQ dimensions and PBA (see Table 3). We found main effects of gender, in favour of females, on reading performance (i.e., snapshot scores) and 7 LTRQ

dimensions (*task value, positive criteria, strategies for working with information, monitoring: learning, motivation/emotion control, adjusting: working with text, disengaged*). But we observed no gender differences in self-reported HS. We found only two marginally reliable ( $p < .10$ ) group by gender interaction effects, for positive task interpretation (where non-ESL males and females provided similar ratings, but male ESL students' ratings were higher than female ESL students), and strategies for working with information (where ratings of male and female ESL students were similar, but non-ESL females scored higher than did non-ESL males). Overall these patterns speak most strongly for gender differences in self-reported engagement in SRL and reading performance, in favour of girls, that cut across both ESL and non-ESL groups.

*Relationships between HS, the PBA snapshot scores, and other LTRQ dimensions.* To investigate the associations between HS, PBA snapshot scores, and other LTRQ dimensions, Pearson correlations were computed separately for ESL and non-ESL students. Table 4 foregrounds correlations with HS; Table 5 foregrounds correlations with the PBA snapshot. Inspection of Table 4 shows that HS was not correlated with reading performance (PBA snapshot) for either of the groups. But a number of differences in correlational patterns could be observed in comparing how HS related to other LTRQ dimensions for ESL and non-ESL students. For ESL students, HS correlated with 11 LTRQ dimensions, with correlations ranging from .39 (*monitoring: work progress*) to .22 (*self-evaluating*). For non-ESL students, 15 dimensions positively correlated with HS, with correlations ranging from .28 (*adjusting: working with text & rereading*) to .10 (*controllable attributions and task value*). While it appears that correlations for ESL students were higher overall than those of their peers, tests comparing correlations failed to reveal statistically reliable differences among those correlations that were statistically reliable for both groups (see Table 4).

Which dimensions were most predictive of HS? HS was significantly correlated with the following 8 dimensions for both groups: Self-regulating strategies (*planning, monitoring: task progress/methods, adjusting: working with text & rereading, adjusting: work management, emotion/motivation control, self-evaluating*), negative emotions (*stress & worry*), and adopting an *external focus*. Thus, across groups of students, it appeared that HS was related to strategies used in the face of difficulties (e.g., adjusting, motivation/emotion control), the experience of stress and worry, and a focus on pleasing and impressing others.

Unique for ESL students were statistically reliable correlations between HS and disengagement from learning and strategies for working with text. In contrast, for non-ESL learners, HS was correlated with strategies for working with information, monitoring: learning, and a focus on memory. For non-ESL learners, unique but small correlations were also observed between HS and motivational variables, such that HS was negatively correlated with perceptions of competence and control, and positively related to controllable attributions, external attributions and task value. Taken together, these findings suggest that HS could be related to other kinds of positive self-regulating and cognitive strategies, if somewhat differently for the two groups. But HS was also associated with common (e.g., stress and worry) and unique (e.g., low self-perceptions of competence, disengagement) challenges for ESL and non-ESL learners.

Table 5 presents correlations between PBA snapshot scores and the 23 LTRQ dimensions. As described earlier, HS did not correlate with reading performance for either group. For ESL students, 12 correlations were statistically reliable, ranging from  $r = -.54$  (*disengaged*) to  $.32$  (*positive task interpretation*). For non-ESL students, 15 statistically reliable correlations ranged from  $-.30$  (*disengaged*) to  $.14$  (*adjusting: work management*). Again, while it appeared at face value that many correlations for ESL students were higher than those of their peers, tests

comparing correlations again failed to reveal statistically reliable differences among those correlations that were statistically reliable for both groups (see Table 5).

For both groups, endorsement of positive task criteria, self-reported use of self-regulating strategies for monitoring, adjusting, and managing motivation and emotions, and self-reported use of cognitive strategies for working with information were associated with more positive reading outcomes. Conversely, reports of disengagement were negatively related to performance. For ESL learners, PBA scores were also related to controllable attributions, positive task interpretation, and planning. For non-ESL learners, performance was also positively related to task value, positive personal goals, positive emotions, and self-reported use of strategies for self-evaluation. Thus, across groups, better reading performance was related to dimensions that encompassed motivation, emotions, cognition, and self-regulation.

#### *Cross-Componential Engagement Profiles for ESL and non-ESL students*

Results from our hierarchical cluster analyses revealed four distinct profiles in students' self-reported engagement in LTR (see Appendix B). Of all the students ( $n = 646$ ) who wrote the LTRQ at pretest in the school year of 2004-05, roughly 42% of the sample ( $n = 262$ ) fell into an *actively engaged* profile. Students within this group gave the highest ratings for all of the positive dimensions (motivation, emotion, cognitive strategies, and SRL), including HS. They reported low levels of disengagement, stress/worry, and external attributions. In contrast, 13% of the sample ( $n = 83$ ) reported exactly the opposite profile. These apparently *disengaged* students appeared to have given up. They reported asking for help infrequently.

A third profile that included 135 students (21%) we labeled *high stress/actively inefficient*. Students who fell in this profile appeared to have little sense of control over outcomes, an external focus, and to experience high levels of stress and worry. Their self-reported strategy use fell on average between *sometimes* and *often*, but they were among the most likely to report seeking help

(when planning and experiencing challenges). Thus, we interpreted this pattern as representing highly anxious students who were trying, but were not sure about how to engage in LTR, and were not confident in their ability to succeed.

A fourth and final cluster that we labeled *passive/inactively efficient* included 26% of the sample ( $n = 166$ ). These students reported positive emotions (i.e., happy; relaxed) and low levels of stress/worry and disengagement when engaged in LTR. They reported positive motivational beliefs and set reading and learning focused personal goals. However, their use of cognitive and some self-regulating strategies was low, and they were among the least likely to ask for help. Thus, it appeared that these students were happy with their LTR performance but were relatively *inactive* in their strategic approaches to learning. We interpreted that these students may have perceived themselves to be able to accomplish LTR tasks without applying deliberate effort.

In the remainder of this section, we investigate patterns in cluster membership for ESL and non-ESL students, and how those patterns were mediated by gender and context. To begin, Table 6 presents the proportion of ESL and non-ESL students within each of our LTR profiles. Our findings were that similar proportions of ESL and non-ESL students reported being actively engaged (39% vs. 42%) and disengaged (9% vs. 11%) in LTR. However, a greater proportion of non-ESL students fell into the *passive/inactively efficient* cluster (30% vs. 14%), while an alarming percentage of ESL students (38% overall) fell into the *high stress/actively inefficient* profile. Thus, it appeared that ESL learners were more likely to be anxious about their engagement in LTR and to be unsure how to succeed.

But we also found that these patterns were mediated by gender (see Table 6). For both groups, males were less likely to report being actively engaged (roughly 34%) than were females (roughly 47%), revealing a “main effect” of gender. In contrast, for both genders, a greater number of non-ESL students fell into the *passive/inactively efficient* cluster (i.e., a “main effect” of group).

But in two other clusters we observed gender by ESL interactions. For example, very few ESL males reported disengagement (4%) compared to ESL females and non-ESL males. Most strikingly, while both male and female ESL students were more likely than non-ESL peers to report being high stress/actively inefficient, it was the ESL males who most frequently fell into this group (48%, compared to 29%, 19%, and 14% for ESL females, non-ESL males, and non-ESL females, respectively).

In a final exploratory analysis, we examined how cluster membership for ESL and non-ESL students might be mediated by context. To that end, we examined LTR profiles for grade 8 students in Humanities and in Science and Technology (see Table 7). Though great caution is warranted in interpreting percentage differences, because of the small *ns* in the ESL groups, certain patterns were suggested. In Humanities, just over 50% of ESL students fell into the *actively engaged* cluster, just slightly higher than non-ESL peers. But a significant portion also fell into the *high stress/actively inefficient* cluster (32%), perhaps due to the high demands on English proficiency in that context. The remaining ESL learners in Humanities fell into the *passive/inactively efficient* cluster (16%). But in Science and Technology, no statistically reliable differences were found between ESL and non-ESL learners, and only 2 out of 8 ESL students (25%) fell into the *high stress/inactively efficient* category. Although speculative given the small numbers in this restricted view of our sample, we questioned whether ESL students might not be more comfortable with reading in Science than they are in Humanities, where reading is likely to require different kinds of language skills and cultural-specific background knowledge.

### Conclusions

In this final section we draw conclusions about patterns of engagement in LTR for ESL and non-ESL students, with a particular focus on HS. We briefly summarize key findings to derive important conclusions and implications.

The results of our study were encouraging to the extent that we found certain common, positive patterns for ESL and non-ESL learners. For example, we found that a similarly large proportion of ESL and non-ESL learners fell into an actively engaged LTR profile, suggestive of productive engagement in learning. Thus, it appeared that many ESL learners viewed themselves as active, confident, and strategic learners, who asked for help when needed to accomplish learning-focused goals. It was also promising to find that, on average, ESL learners performed as well on a curriculum-based test of reading as did their non-ESL peers.

However, it was also worrisome that so many ESL students reported LTR profiles that were more problematic. For example, analyses of construct-level profiles and mean differences on LTRQ dimensions converged to suggest that, when compared to their peers, ESL learners reported greater disengagement from reading, experienced higher levels of stress and worry, were more externally focused, and relied more on rote memorization strategies inconsistent with expectations for LTR tasks in a North American context. These patterns were consistent with our cluster analyses wherein we were alarmed to find such a significant proportion of ESL students, especially males, in a high stress/actively inefficient profile. These findings suggest that many ESL students were anxious while learning, perceived themselves as having little control over outcomes, and were unsure about how to productively engage in LTR activities.

In this research, we were also able to uncover some specific relationships between HS and other components of self-regulated activity. For example, across ESL and non-ESL students alike, we found that HS was related to a focus on pleasing or impressing others, the experience of stress or worry, and use of other kinds of adjusting and emotion/motivation control strategies. Thus, for students in our study, HS seemed to serve an adaptive function, supporting them to overcome challenges so as to maintain engagement in LTR.

We also found that ESL students were more likely to report HS than were their non-ESL peers, suggesting they were experiencing difficulties both before (e.g., during planning) and during LTR activities, as we had expected. For ESL students in particular, increased HS was also associated with disengagement (e.g., seeking to read as little as possible; giving up in the face of difficulties). This latter finding raises the question of whether, for some ESL students, HS might also have functioned as a quick way of relying on others to solve problems rather than solving them for themselves (Butler, 1998). Nonetheless, for ESL learners in our study, HS seemed to serve an adaptive function when they felt less confident, disengaged, and/or stressed and worried.

We would note several limitations to our study that should be taken into consideration. One of these is the small sample size for some of our analyses. Caution should be taken when interpreting those findings and in generalizing to other student samples. Further, our sample was distinctive in terms of cultural composition. Although our schools were located within multicultural communities within which many languages were spoken, the second largest proportion of students in our sample derived from a Chinese heritage. This cultural composition may not be similar to other groups of ESL students. It is also important to consider that our ESL students were living and studying within a particular host culture, located on the southwest coast of Canada, an English-speaking, Western nation. Thus, our findings may or may not reflect the perceptions and experiences of ESL students living in other areas. Finally, we emphasize that this study did not include a measure of actual LTR behavior. Data from the LTRQ are meant to provide a nuanced assessment of students' perceptions about LTR activities and their engagement within them and should not be interpreted as a measure of SRL or HS activity.

Nonetheless, results from our study have implications for practice and research. For example, teachers can draw from our findings to derive directions for supporting ESL students. For example, attention should be focused on ensuring that students new to North American

contexts are aware of the expectations of LTR activities and of productive strategies for completing them. Further, specific attention should be paid to assisting students to feel less anxious while learning and in greater control over outcomes.

In terms of future research, while our findings herein describe how HS fits into broader patterns of LTR engagement for students with particular backgrounds working in particular contexts, further research is needed to clarify when and how HS may be strategic and/or dependent within different kinds of LTR profiles (Butler, 1998). Further, we need to uncover the underlying causes for the high stress/actively inefficient and disengaged profiles. If we can solve these pieces of puzzle, we can intervene and improve the academic life and learning of anxious or at-risk students. Investigation of different cultural values and social systems in relation to schooling experiences is also essential for understanding ESL students' SRL in general and HS in particular. With such understanding, educators can bridge the gap between students' original culture and the host culture and even help them take advantage of and build on what they bring to new learning contexts in order to make them flourish in a new land.

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Table 1  
*An Overview of Participants and the Contexts in Which Data Were Collected*

|              | Grade | Domain                  | Program <sup>1</sup> | #<br>classes | N <sup>2</sup> | LA <sup>3</sup> | ESL <sup>4</sup> | M   | F   |
|--------------|-------|-------------------------|----------------------|--------------|----------------|-----------------|------------------|-----|-----|
| School 1     | 8     | Science &<br>Technology | English              | 2            | 23             | 6               | 10               | 9   | 14  |
|              |       |                         | French               | 3            | 65             | 20              | 0                | 29  | 36  |
|              | Total |                         |                      | 5            | 88             | 26              | 10               | 38  | 50  |
| School 2     | 8     | Humanities              | English              | 2            | 47             | 2               | 6                | 25  | 22  |
|              |       |                         | French               | 3            | 65             | 1               | 0                | 21  | 44  |
|              | 10    | Drafting                |                      | 1            | 24             | 1               | 3                | 18  | 6   |
|              | 11    | Social Sciences         |                      | 2            | 26             | 1               | 3                | 12  | 14  |
|              | 11    | Textiles                |                      | 1            | 11             | 0               | 0                | 11  | 0   |
|              | Total |                         |                      | 9            | 173            | 5               | 12               | 87  | 86  |
| School 3     | 7     | Science                 | FA                   | 1            | 22             | 6               | 1                | 4   | 18  |
|              |       |                         | SA                   | 1            | 16             | 0               | 4                | 8   | 8   |
|              | 8     | Humanities              | FA                   | 2            | 42             | 11              | 2                | 16  | 26  |
|              |       |                         | SA                   | 1            | 26             | 2               | 12               | 16  | 10  |
|              | 9     | Humanities              | FA                   | 1            | 24             | 6               | 3                | 4   | 20  |
|              |       |                         | SA                   | 1            | 23             | 4               | 3                | 16  | 7   |
|              | Total |                         |                      | 7            | 153            | 29              | 25               | 64  | 89  |
| School 4     | 8     | Humanities              |                      | 4            | 86             | 12              | 14               | 52  | 34  |
|              | 10    | English                 |                      | 3            | 79             | 12              | 20               | 44  | 35  |
|              | 10    | ESL English 4           |                      | 1            | 22             | 0               | 22               | 14  | 8   |
|              | 12    | Communications          |                      | 1            | 27             | 12              | 1                | 16  | 11  |
|              | 12    | Foods & Nutrition       |                      | 1            | 18             | 2               | 4                | 4   | 14  |
|              | Total |                         |                      | 10           | 232            | 38              | 61               | 130 | 102 |
| <b>TOTAL</b> |       |                         |                      | 31           | 646            | 98              | 108              | 319 | 327 |

*Note.*<sup>1</sup> English = Regular English Program; French = French Immersion Program; FA = Fine Arts Academy; SA = Science Academy; <sup>2</sup> The total pretest *N* was 655, but isolated demographic data were missing for 9 cases; <sup>3</sup> LA = Students receiving learning assistance; <sup>4</sup> ESL = Students designated ESL and receiving support to achieve English language proficiency.

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Table 2

*Differences in Mean LTRQ Dimensions and Snapshot Scores Between ESL and Non-ESL Students*

| Dimension                              | ESL <sup>a</sup> |           | Non-ESL <sup>b</sup> |           | <i>t</i> | <i>Cohen's d (pooled)</i> |
|--|------------------|-----------|----------------------|-----------|----------|---------------------------|
|  | <i>M</i>         | <i>SD</i> | <i>M</i>             | <i>SD</i> |          |                           |
| <u>Motivation</u>                      |                  |           |                      |           |          |                           |
| Perceptions of competence & control    | 2.61             | .33       | <b>2.78</b>          | .37       | 4.61***  | .49                       |
| Controllable attributions              | 3.12             | .61       | <b>3.31</b>          | .65       | 2.72**   | .30                       |
| External attributions                  | <b>2.20</b>      | .85       | 1.91                 | .82       | -3.28*** | .36                       |
| Task value                             | <b>2.73</b>      | .69       | 2.57                 | .74       | -2.06*   | -.23                      |
| Positive personal goals                | 3.21             | .57       | <b>3.40</b>          | .54       | 3.27***  | .35                       |
| <u>Emotions</u>                        |                  |           |                      |           |          |                           |
| Positive emotions                      | 2.72             | .54       | 2.77                 | .51       |          |                           |
| Stress & worry                         | <b>2.08</b>      | .65       | 1.87                 | .60       | -3.09**  | -.33                      |
| <u>Task Understanding</u>              |                  |           |                      |           |          |                           |
| Positive task interpretation           | 3.02             | .56       | 3.07                 | .48       |          |                           |
| Positive criteria                      | 2.92             | .48       | 2.97                 | .49       |          |                           |
| <u>Self-Regulating Strategies</u>      |                  |           |                      |           |          |                           |
| Planning                               | 2.29             | .68       | 2.27                 | .64       |          |                           |
| Monitoring: learning                   | 2.78             | .59       | 2.89                 | .56       |          |                           |
| Monitoring: task progress/methods      | 2.52             | .60       | 2.50                 | .66       |          |                           |
| Adjusting: working with text/reread    | 2.94             | .54       | 2.96                 | .59       |          |                           |
| Adjusting: linking information         | 2.20             | .71       | 2.13                 | .77       |          |                           |
| Adjusting: work management             | 2.49             | .71       | 2.56                 | .77       |          |                           |
| Emotion/Motivation control             | <b>2.67</b>      | .63       | 2.50                 | .67       | -2.33*   | -.26                      |
| Self-evaluating                        | 2.66             | .56       | 2.55                 | .62       |          |                           |
| <u>Reading and Learning Strategies</u> |                  |           |                      |           |          |                           |
| Working with information               | 2.50             | .46       | 2.48                 | .50       |          |                           |
| Working with text                      | <b>2.81</b>      | .61       | 2.66                 | .55       | -2.43*   | .24                       |
| <u>Ways of Working</u>                 |                  |           |                      |           |          |                           |
| Focus on memory                        | 2.23             | .54       | 2.12                 | .62       |          |                           |
| Help-seeking                           | <b>2.62</b>      | .69       | 2.37                 | .60       | -3.65*** | -.39                      |
| Disengaged                             | <b>1.76</b>      | .54       | 1.57                 | .48       | -3.44*** | -.36                      |
| External focus                         | <b>2.19</b>      | .54       | 2.05                 | .56       | -2.44*   | -.27                      |
| Snapshot                               | 3.43             | 1.55      | 3.32                 | 1.36      |          |                           |

Note. <sup>a</sup>*n* = 98. <sup>b</sup>*n* = 451.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

Table 3

*Two-Way ANOVA (Gender by ESL/Non-ESL) on LTRQ Dimensions and Snapshot Scores*

| Dimension                               | Group   | M/F | <i>n</i> | <i>M</i> | <i>SD</i> | Sig. Effect  | <i>df</i> | <i>F</i> |
|---|---------|-----|----------|----------|-----------|--------------|-----------|----------|
| Task value                              | ESL     | M   | 47       | 2.55     | 0.67      | Gender       | (1, 555)  | 10.33*** |
|   | ESL     | F   | 54       | 2.89     | 0.67      |              |           |          |
|   | Non-ESL | M   | 218      | 2.47     | 0.72      |              |           |          |
|   | Non-ESL | F   | 236      | 2.65     | 0.75      |              |           |          |
| Positive task interpretation            | ESL     | M   | 47       | 3.09     | 0.41      | ESL x Gender | (1, 556)  | 3.69*    |
|   | ESL     | F   | 55       | 2.95     | 0.67      |              |           |          |
|   | Non-ESL | M   | 218      | 3.04     | 0.50      |              |           |          |
|   | Non-ESL | F   | 236      | 3.10     | 0.46      |              |           |          |
| Positive criteria                       | ESL     | M   | 47       | 2.83     | 0.44      | Gender       | (1, 552)  | 7.47***  |
|   | ESL     | F   | 53       | 3.00     | 0.51      |              |           |          |
|   | Non-ESL | M   | 218      | 2.91     | 0.50      |              |           |          |
|   | Non-ESL | F   | 234      | 3.03     | 0.47      |              |           |          |
| Strategies for Working with information | ESL     | M   | 47       | 2.49     | 0.39      | ESL x Gender | (1, 554)  | 3.38*    |
|   | ESL     | F   | 53       | 2.52     | 0.51      |              |           |          |
|   | Non-ESL | M   | 218      | 2.36     | 0.46      |              |           |          |
|   | Non-ESL | F   | 236      | 2.59     | 0.52      |              |           |          |
| Monitoring: learning                    | ESL     | M   | 47       | 2.74     | 0.48      | Gender       | (1, 554)  | 5.53**   |
|   | ESL     | F   | 53       | 2.81     | 0.67      |              |           |          |
|   | Non-ESL | M   | 218      | 2.78     | 0.54      |              |           |          |
|   | Non-ESL | F   | 236      | 3.00     | 0.56      |              |           |          |
| Adjusting: working w/ text & rereading  | ESL     | M   | 47       | 2.86     | 0.44      | Gender       | (1, 555)  | 10.93*** |
|   | ESL     | F   | 54       | 3.01     | 0.61      |              |           |          |
|   | Non-ESL | M   | 218      | 2.82     | 0.60      |              |           |          |
|   | Non-ESL | F   | 236      | 3.09     | 0.55      |              |           |          |
| Emotion/Motivation control              | ESL     | M   | 46       | 2.62     | 0.56      | Gender       | (1, 554)  | 6.49***  |
|   | ESL     | F   | 54       | 2.72     | 0.68      |              |           |          |
|   | Non-ESL | M   | 218      | 2.37     | 0.66      |              |           |          |
|   | Non-ESL | F   | 236      | 2.63     | 0.64      |              |           |          |
| Disengaged                              | ESL     | M   | 47       | 1.79     | 0.55      | Gender       | (1, 556)  | 2.87*    |
|   | ESL     | F   | 55       | 1.72     | 0.54      |              |           |          |
|   | Non-ESL | M   | 218      | 1.63     | 0.50      |              |           |          |
|   | Non-ESL | F   | 236      | 1.52     | 0.46      |              |           |          |
| Snapshot                                | ESL     | M   | 13       | 2.77     | 1.36      | Gender       | (1, 160)  | 14.50*** |
|   | ESL     | F   | 15       | 4.00     | 1.51      |              |           |          |
|   | Non-ESL | M   | 64       | 2.88     | 1.25      |              |           |          |
|   | Non-ESL | F   | 68       | 3.74     | 1.32      |              |           |          |

*Note.* See Table 2 for differences in LTRQ dimensions between ESL and non-ESL students.

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

Table 4

*Correlations Between Help-Seeking and Other LTRQ Dimensions for ESL, Non-ESL, and All Students, Significant Correlations Only*

| <i>Dimension</i>                         | ESL <sup>a</sup> | Non-ESL <sup>b</sup> | All <sup>c</sup> | ESL vs.<br>Non-ESL |
|--|------------------|----------------------|------------------|--------------------|
|  | <i>r</i>         | <i>r</i>             | <i>r</i>         | <i>p</i>           |
| <u>Motivation</u>                        |                  |                      |                  |                    |
| Perceptions of competence & control      |                  | -.14**               | -.14**           |                    |
| Controllable attributions                |                  | .10*                 | .10**            |                    |
| External attributions                    |                  | .15**                | .16**            | .85                |
| Task Value                               |                  | .10*                 |                  |                    |
| Positive personal goals                  |                  |                      |                  |                    |
| <u>Emotions</u>                          |                  |                      |                  |                    |
| Positive emotions                        |                  |                      | .09*             |                    |
| Stress & worry                           | .29**            | .22**                | .24**            | .50                |
| <u>Task Understanding</u>                |                  |                      |                  |                    |
| Positive task interpretation             |                  |                      |                  |                    |
| Positive criteria                        |                  |                      | .08*             |                    |
| <u>Self-Regulating Strategies</u>        |                  |                      |                  |                    |
| Planning                                 | .31**            | .14**                | .17**            | .11                |
| Monitoring: learning                     |                  | .18**                | .14**            |                    |
| Monitoring: task progress/methods        | .39**            | .21**                | .22**            | .08                |
| Adjusting: working w/ text/reread        | .27**            | .28**                | .27**            | .92                |
| Adjusting: linking information           | .28**            |                      |                  |                    |
| Adjusting: work management               | .26**            | .18**                | .20**            | .45                |
| Emotion/motivation control               | .25**            | .19**                | .23**            | .57                |
| Self-evaluating                          | .22*             | .20**                | .21**            | .85                |
| <u>Reading &amp; Learning Strategies</u> |                  |                      |                  |                    |
| Working with information                 |                  | .18**                | .17**            |                    |
| Working with text                        | .27**            |                      | .13**            |                    |
| <u>Ways of Working</u>                   |                  |                      |                  |                    |
| Focus on memory                          |                  | .14**                | .14**            | .85                |
| Disengaged                               | .31**            |                      | .08*             |                    |
| External focus                           | .30**            | .17**                | .22**            | .22                |
| <u>Snapshot</u>                          |                  |                      |                  |                    |

Note. <sup>a</sup>*n* = 98. <sup>b</sup>*n* = 451; <sup>c</sup>*n* = 646.

\**p* < .05. \*\**p* < .01.

Table 5

*Correlations Between the PBA Snapshot and LTRQ Dimensions for ESL, Non-ESL, and All Students, Significant Correlations Only*

| Dimension                                | ESL <sup>a</sup> | Non-ESL <sup>b</sup> | All <sup>c</sup> | ESL vs.<br>Non-ESL |
|--|------------------|----------------------|------------------|--------------------|
|  | <i>r</i>         | <i>r</i>             | <i>r</i>         | <i>p</i>           |
| <u>Motivation</u>                        |                  |                      |                  |                    |
| Perceptions of competence & control      |                  | .21***               | .23***           |                    |
| Controllable attributions                | .38**            |                      | .18***           |                    |
| External attributions                    |                  |                      | -.15**           |                    |
| Task Value                               |                  | .30***               | .23***           |                    |
| Positive personal goals                  |                  | .34***               | .30***           |                    |
| <u>Emotions</u>                          |                  |                      |                  |                    |
| Positive emotions                        |                  | .27***               | .26***           |                    |
| Stress & worry                           |                  |                      | -.13*            |                    |
| <u>Task Understanding</u>                |                  |                      |                  |                    |
| Positive task interpretation             | .32*             |                      | .18***           |                    |
| Positive criteria                        | .44**            | .15*                 | .23***           | .14                |
| <u>Self-Regulating Strategies</u>        |                  |                      |                  |                    |
| Planning                                 | .36*             |                      | .13*             |                    |
| Monitoring: learning                     | .34*             | .15*                 | .19***           | .35                |
| Monitoring: task progress/ methods       | .36*             | .21**                | .20***           | .45                |
| Adjusting: working w/ text/reread        | .46***           | .26***               | .27***           | .29                |
| Adjusting: linking information           | .45**            | .21***               | .20***           | .21                |
| Adjusting: work management               | .36*             | .14*                 | .18***           | .28                |
| Emotion/motivation control               | .33*             | .23***               | .24***           | .62                |
| Self-evaluating                          |                  | .29***               | .26***           |                    |
| <u>Reading &amp; Learning Strategies</u> |                  |                      |                  |                    |
| Working with information                 | .50***           | .27***               | .28***           | .18                |
| Working with text                        |                  |                      | .16**            |                    |
| <u>Ways of Working</u>                   |                  |                      |                  |                    |
| Focus on memory                          |                  | .19**                | .13*             |                    |
| Disengaged                               | -.54***          | -.30***              | -.32***          | .18                |
| External focus                           |                  |                      |                  |                    |
| <u>Help-seeking</u>                      |                  |                      |                  |                    |

Note. <sup>a</sup>*n* = 28. <sup>b</sup>*n* = 132. <sup>c</sup>*n* = 199.

\**p* < .10. \*\**p* < .05. \*\*\**p* < .01.

Table 6  
*Cluster Membership for ESL vs. Non-ESL Students by Gender*

| Clusters                            | ESL  |        |       | Non-ESL |        |       |
|-------------------------------------|------|--------|-------|---------|--------|-------|
|                                     | Male | Female | Total | Male    | Female | Total |
| 1: Actively engaged                 | 15   | 23     | 38    | 75      | 116    | 191   |
|                                     | 33%  | 44%    | 39%   | 35%     | 50%    | 42%   |
| 2. High Stress/Actively Inefficient | 22   | 15     | 37    | 42      | 33     | 75    |
|                                     | 48%  | 29%    | 38%   | 19%     | 14%    | 17%   |
| 3. Disengaged                       | 2    | 7      | 9     | 26      | 22     | 48    |
|                                     | 4%   | 13%    | 9%    | 12%     | 9%     | 11%   |
| 4. Passive/Inactively efficient     | 7    | 7      | 14    | 74      | 62     | 136   |
|                                     | 15%  | 13%    | 14%   | 34%     | 27%    | 30%   |
| Total Males / Females               | 46   | 52     | 98    | 217     | 233    | 450   |

*Note.* ESL vs. non-ESL.  $\chi^2(3, N = 548) = 25.407, p = .000, \text{Cramér's } V = .215$

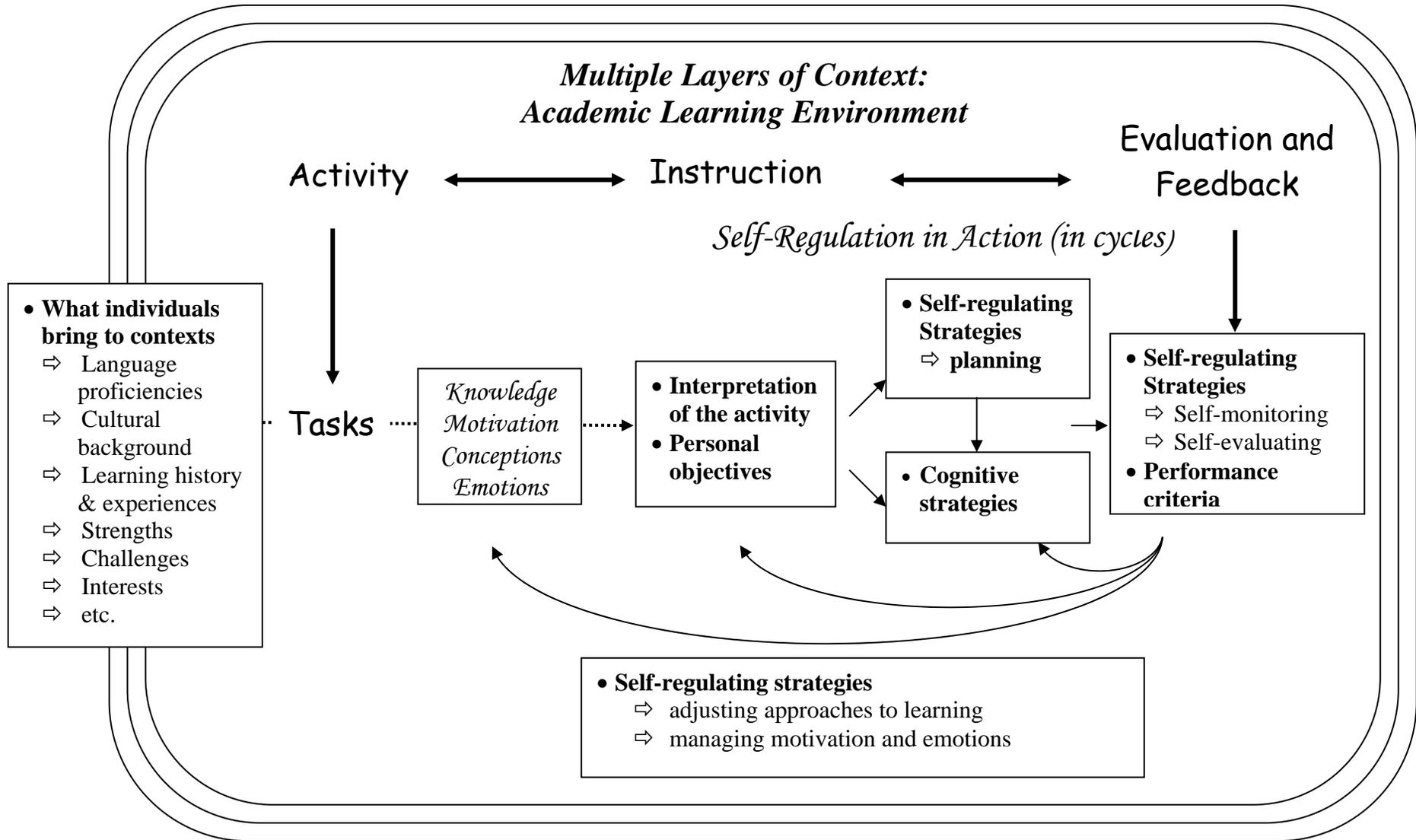
Non-ESL male vs. non-ESL female,  $\chi^2(3, N = 450) = 10.718, p = .013, \text{Cramér's } V = .154$

Table 7  
*Cluster Membership for ESL vs. Non-ESL Students by Context*

| Clusters                            | Grade 8 Humanities |         |       | Grad 8 Science & Technology |         |       |
|-------------------------------------|--------------------|---------|-------|-----------------------------|---------|-------|
|                                     | ESL                | Non-ESL | Total | ESL                         | Non-ESL | Total |
| 1: Actively engaged                 | 16                 | 87      | 103   | 4                           | 25      | 29    |
|                                     | 52%                | 45%     | 46%   | 50%                         | 48%     | 48%   |
| 2: High Stress/Actively Inefficient | 10                 | 24      | 34    | 2                           | 6       | 8     |
|                                     | 32%                | 12%     | 15%   | 25%                         | 12%     | 13%   |
| 3: Disengaged                       | 0                  | 21      | 21    | 1                           | 2       | 3     |
|                                     | 0%                 | 11%     | 9%    | 13%                         | 4%      | 5%    |
| 4: Passive/ Inactively Efficient    | 5                  | 63      | 68    | 1                           | 19      | 20    |
|                                     | 16%                | 32%     | 30%   | 13%                         | 37%     | 33%   |
| Total                               | 31                 | 195     | 226   | 8                           | 52      | 60    |

*Note.* ESL vs. non-ESL in humanities  $\chi^2(3, N = 226) = 13.29, p = .005, Cramér's V = .240$

Figure 1. A Situated Model of Self-Regulated Learning in Complex Activities



Adapted with permission from Butler & Cartier (2005), Cartier & Butler (2004).

Figure 2

A Construct-Level Profile Comparing Personal Objectives for ESL and non-ESL Students

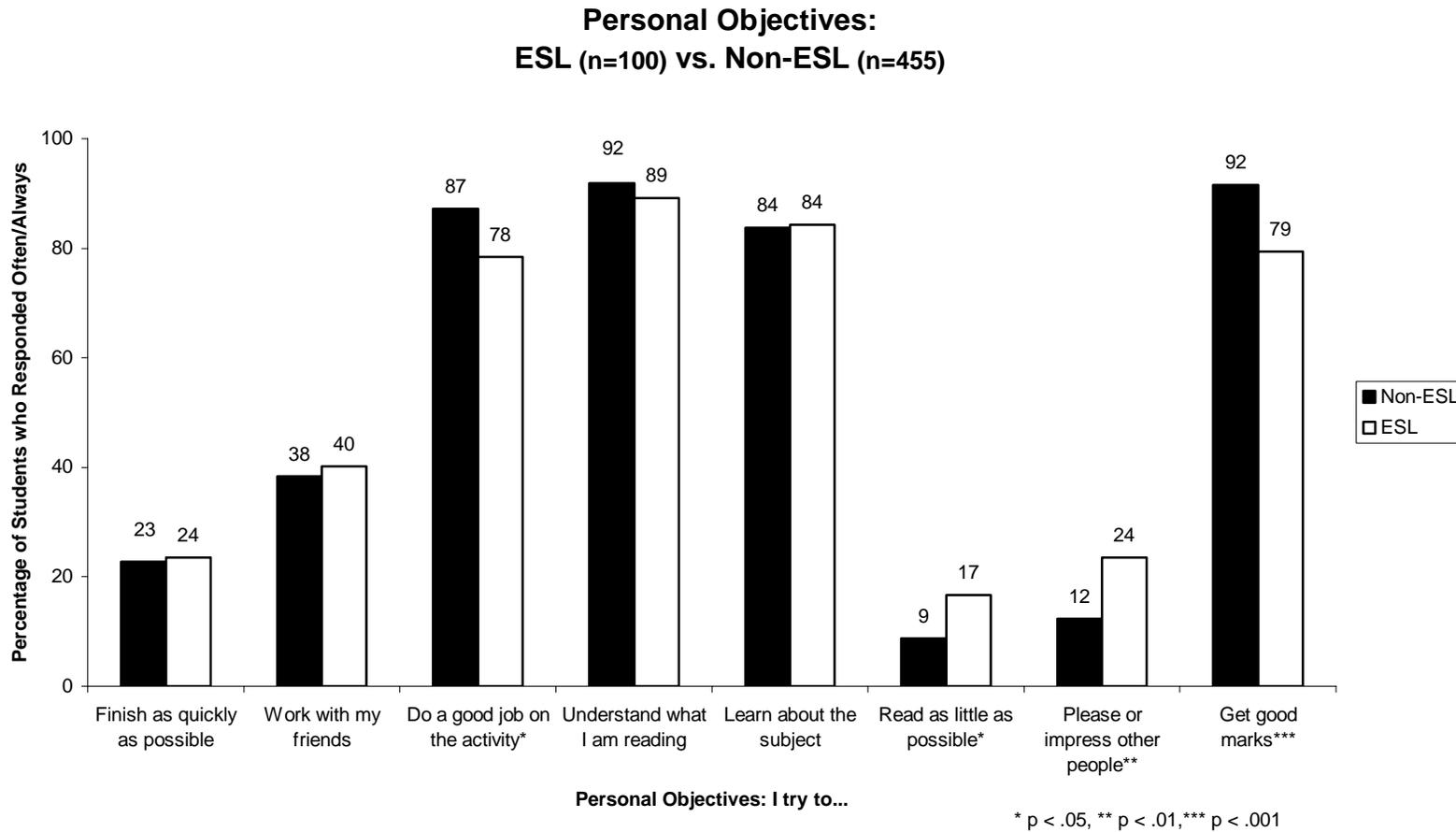


Figure 3  
 A Construct-Level Profile Comparing Self-Reported Planning for ESL and non-ESL Students

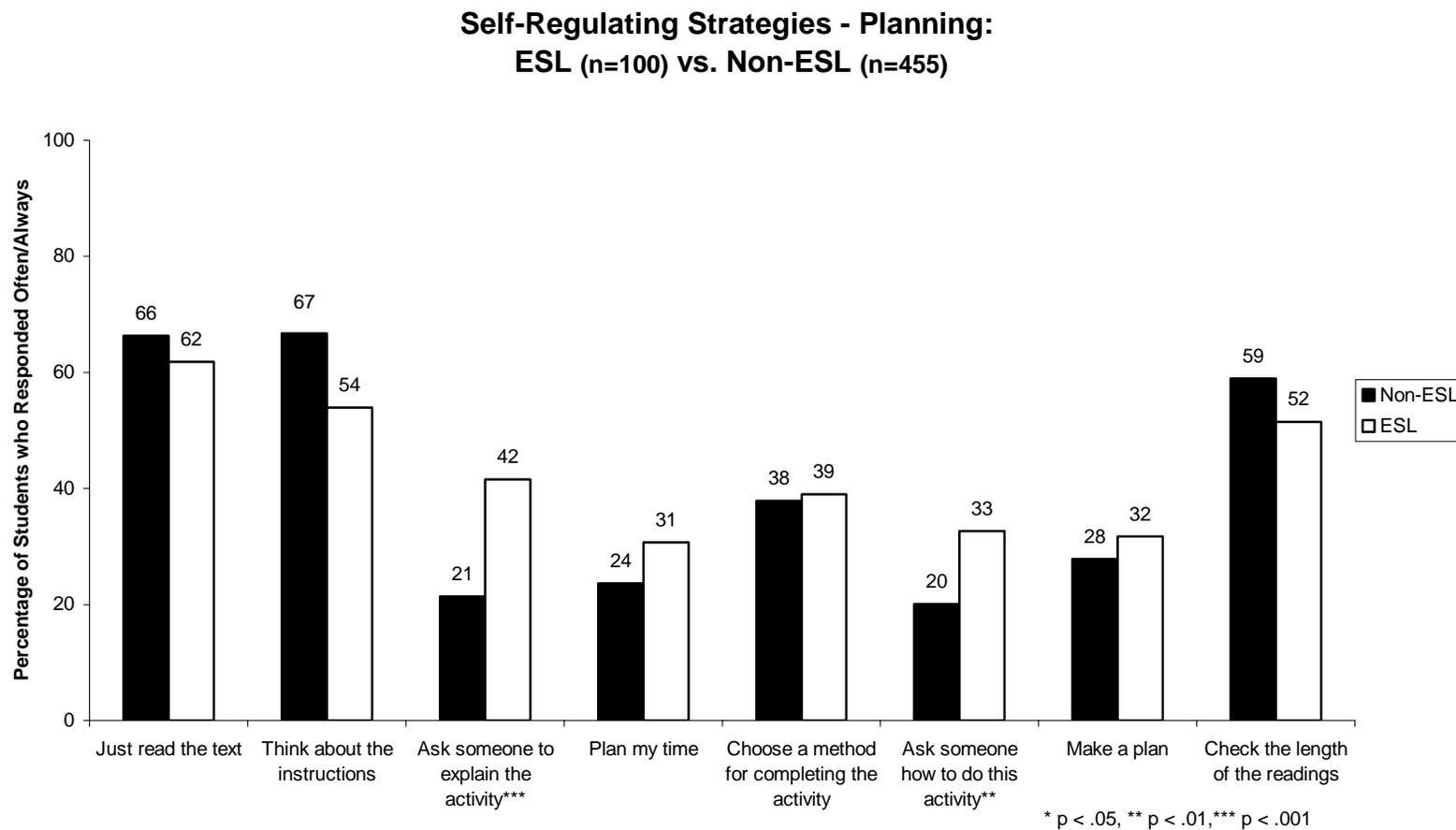


Figure 4

A Construct-Level Profile Comparing Self-Reported Adjusting Strategies for ESL and non-ESL Students

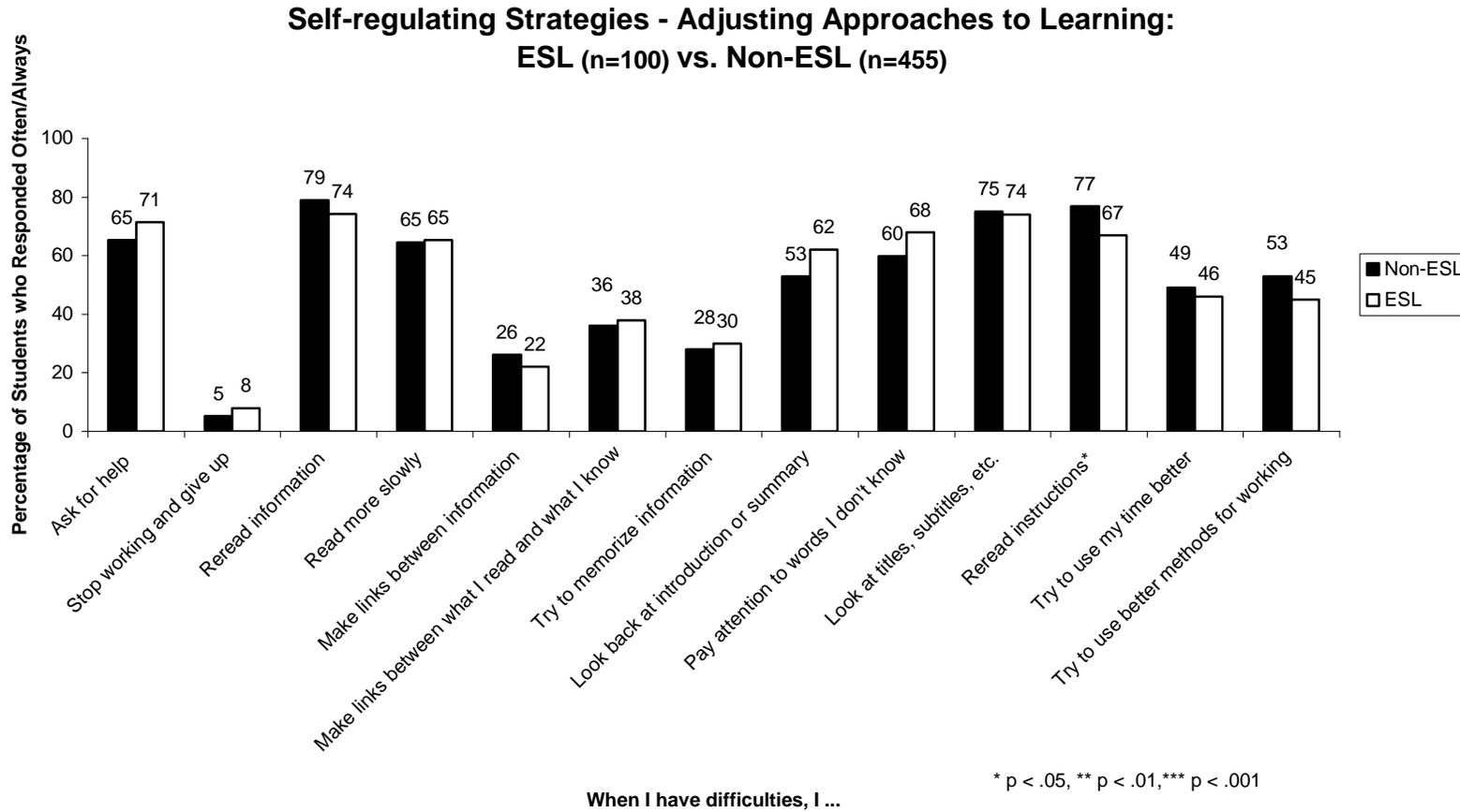


Figure 5

A Construct-Level Profile Comparing Self-Reported Strategies for Managing Motivation and Emotions for ESL and non-ESL Students

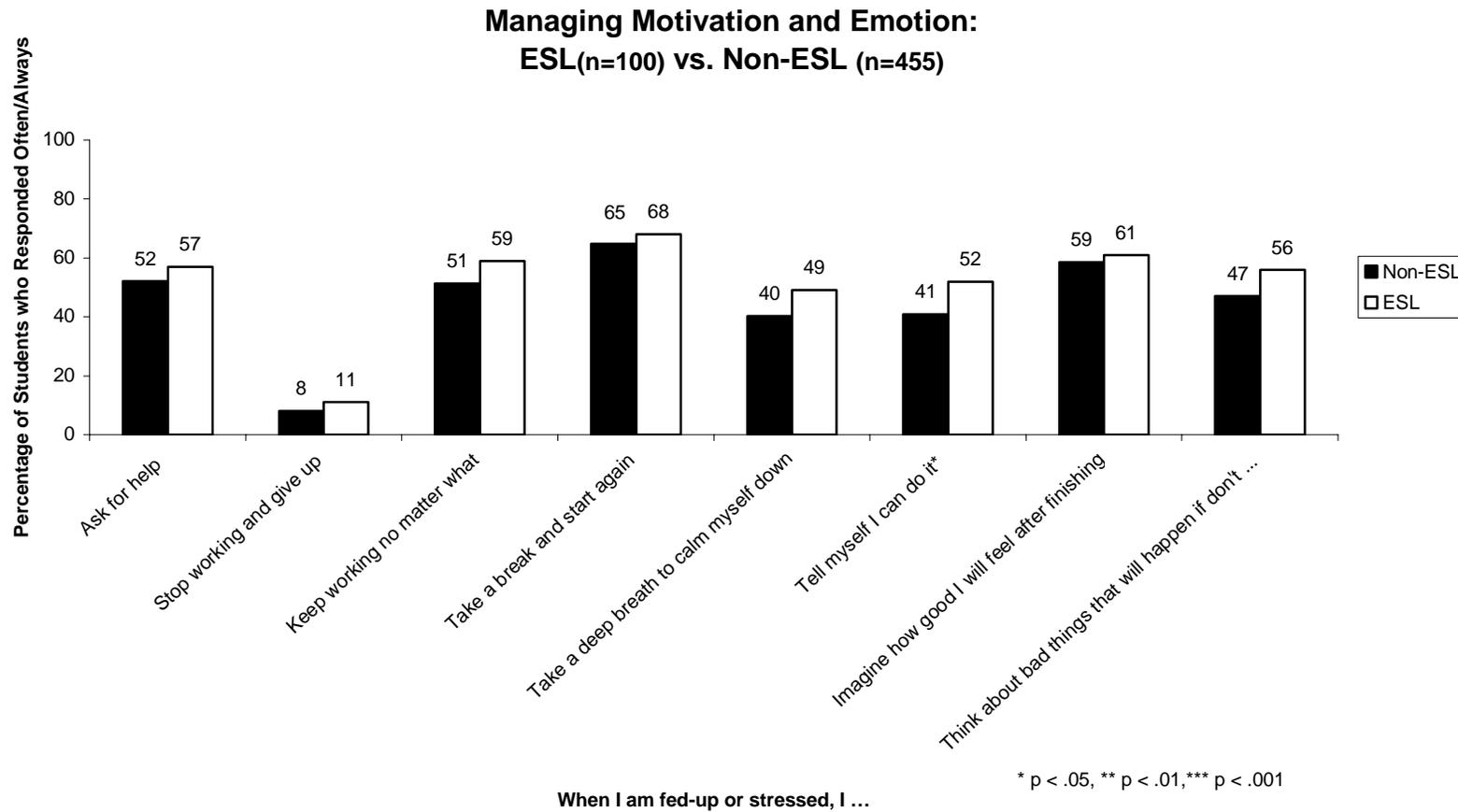
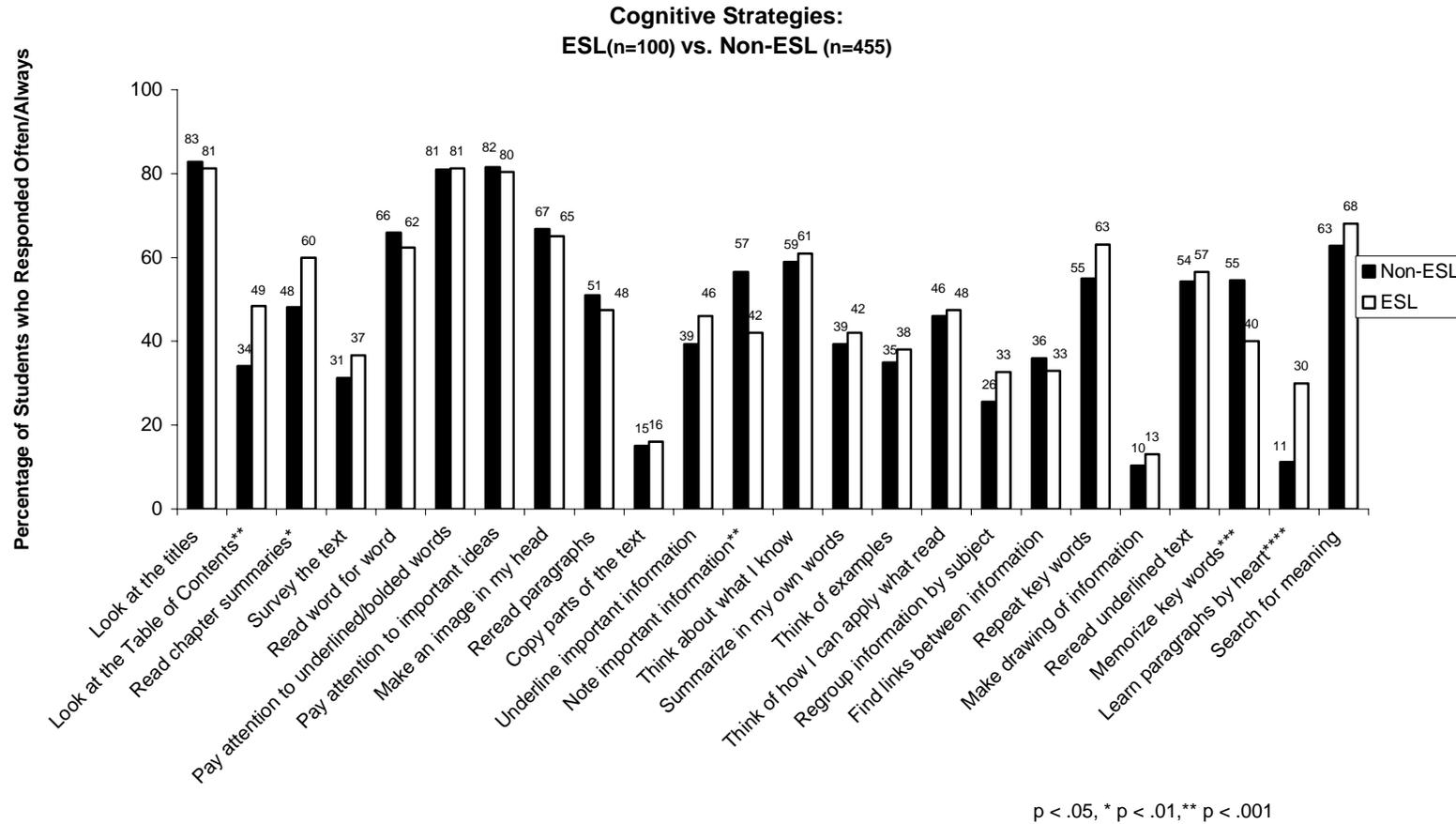


Figure 6

A Construct-Level Profile Comparing Self-Reported Cognitive Strategies for ESL and non-ESL Students



## Appendix A: Dimensions and Sample Items

| Dimensions  | # of items | Cronbach's Alpha                  |                                    |                          |                           |
|---|------------|-----------------------------------|------------------------------------|--------------------------|---------------------------|
|   |            | Pre-Post:<br>Pretest<br>(n = 310) | Pre-Post:<br>Posttest<br>(n = 310) | Pretest all<br>(n = 655) | Posttest all<br>(n = 322) |
| <b><u>Motivation</u></b>  |            |                                   |                                    |                          |                           |
| Perceptions of competence and control<br><i>e.g., When I am asked to read in order to learn, I think that I can succeed</i>                           | 12         | .71                               | .74                                | .70                      | .74                       |
| Controllable attributions<br><i>e.g., When I am asked to read in order to learn, I think that I will succeed if I use good methods</i>                | 2          | .65                               | .64                                | .64                      | .65                       |
| External attributions<br><i>e.g., When I am asked to read in order to learn, I think that I will succeed if the activity is easy</i>                  | 2          | .60                               | .54                                | .62                      | .53                       |
| Task Value<br><i>e.g., In my opinion, this kind of reading to learn activity is important</i>   | 2          | .62                               | .58                                | .61                      | .59                       |
| Positive Personal Goals<br><i>e.g., <u>Me personally</u>, what I try to do when I read to learn is to understand what I am reading</i>                | 4          | .79                               | .80                                | .75                      | .79                       |
| <b><u>Emotions</u></b>  |            |                                   |                                    |                          |                           |
| Positive emotions<br><i>e.g., When I find out that I will have to read in order to learn, I am happy</i>  | 8          | .64                               | .64                                | .64                      | .65                       |
| Stress and Worry<br><i>e.g., When I find out that I will have to read in order to learn, I am stressed</i>  | 7          | .80                               | .83                                | .77                      | .83                       |
| <b><u>Task Understanding</u></b>  |            |                                   |                                    |                          |                           |
| Positive Task Interpretation<br><i>e.g., When I have to read in order to learn, I am being asked to find the main ideas or themes in the readings</i> | 7          | .74                               | .72                                | .75                      | .75                       |
| Positive Criteria<br><i>e.g., At the end of a reading to learn activity, I know I have done a good job when I understood what I read</i>              | 16         | .90                               | .88                                | .89                      | .88                       |

| Dimensions   | # of items | Cronbach's Alpha                  |                                    |                          |                           |
|--|------------|-----------------------------------|------------------------------------|--------------------------|---------------------------|
|  |            | Pre-Post:<br>Pretest<br>(n = 310) | Pre-Post:<br>Posttest<br>(n = 310) | Pretest all<br>(n = 655) | Posttest all<br>(n = 322) |
| <b><u>Self-Regulating Strategies</u></b>   |            |                                   |                                    |                          |                           |
| Planning<br><i>e.g., Before I begin the activity of reading to learn, I start by planning my time.</i>   | 4          | .73                               | .74                                | .73                      | .74                       |
| Monitoring: learning<br><i>e.g., When reading to learn, I identify what I do and don't understand in the readings</i>  | 5          | .76                               | .73                                | .76                      | .73                       |
| Monitoring: work progress/methods<br><i>e.g., When reading to learn, I ask myself if I am concentrating well</i>   | 4          | .73                               | .65                                | .71                      | .66                       |
| Adjusting: working with text & rereading<br><i>e.g., When I have difficulties reading to learn, I reread information in the text</i>                               | 5          | .69                               | .72                                | .71                      | .72                       |
| Adjusting: linking information<br><i>e.g., When I have difficulties reading to learn, I make links between what I am reading and what I know about the subject</i> | 2          | .77                               | .76                                | .75                      | .76                       |
| Adjusting: work management<br><i>e.g., When I have difficulties reading to learn, I try to use better methods for working</i>                                      | 2          | .67                               | .58                                | .68                      | .57                       |
| Emotion/Motivation control<br><i>e.g., When I feel stressed, worried, or fed up while I am reading to learn, I take a deep breath to calm myself down</i>          | 4          | .62                               | .67                                | .62                      | .68                       |
| Self-evaluating<br><i>e.g., When I finish reading to learn, I ask myself if I learned everything I needed to learn</i>   | 4          | .65                               | .63                                | .66                      | .65                       |
| <b><u>Reading and Learning Strategies</u></b>  |            |                                   |                                    |                          |                           |
| Working with information<br><i>e.g., While I am reading to learn, I think about what I already know about the subject</i>  | 12         | .83                               | .84                                | .82                      | .84                       |
| Working with text<br><i>e.g., While I am reading to learn, I survey the text</i>   | 5          | .58                               | .65                                | .62                      | .64                       |

| Dimensions  | # of items | Cronbach's Alpha                  |                                    |                          |                           |
|---|------------|-----------------------------------|------------------------------------|--------------------------|---------------------------|
|   |            | Pre-Post:<br>Pretest<br>(n = 310) | Pre-Post:<br>Posttest<br>(n = 310) | Pretest all<br>(n = 655) | Posttest all<br>(n = 322) |
| <b><u>Ways of Working</u></b>   |            |                                   |                                    |                          |                           |
| Focus on memory<br><i>e.g., When I have to read in order to learn, I am being asked to memorize information</i>                 | 5          | .65                               | .67                                | .68                      | .67                       |
| Help-seeking<br><i>e.g., When I feel stressed, worried, or fed up while I am reading to learn, I ask for help</i>               | 4          | .70                               | .69                                | .69                      | .70                       |
| Disengaged<br><i>e.g., <u>Me personally</u>, what I try to do when I read to learn is to read as little as possible</i>         | 6          | .71                               | .77                                | .72                      | .65                       |
| External focus<br><i>e.g., <u>Me personally</u>, what I try to do when I read to learn is to please or impress other people</i> | 5          | .63                               | .66                                | .63                      | .66                       |

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## Appendix B: An Overview of Mean Differences on Dimensions for the Four Cluster Profiles

|                           | Actively Engaged<br><i>N</i> = 262 | High Stress/ Actively<br>Inefficient<br><i>N</i> = 135 | Disengaged<br><i>N</i> = 153 | Passive / Inactively<br>efficient<br><i>N</i> = 166 |
|---------------------------|------------------------------------|--|------------------------------|---|
| <b>Motivation</b>         |                                    |  |                              |   |
| Percep. Of Comp & Con     | 2.91                               | 2.55   | 2.30                         | 2.76  |
| Controllable attributions | 3.67                               | 2.97   | 2.44                         | 3.22  |
| External attributions     | 1.73                               | 2.61   | 2.58                         | 1.54  |
| Task value                | 3.00                               | 2.30   | 1.94                         | 2.49  |
| Positive personal goals   | 3.65                               | 3.09   | 2.63                         | 3.30  |
| <b>Emotions</b>           |                                    |  |                              |   |
| Positive emotions         | 3.02                               | 2.62   | 2.29                         | 2.67  |
| Stress and Worry          | 1.89                               | 2.11   | 2.10                         | 1.75  |
| <b>Task Understanding</b> |                                    |  |                              |   |
| Positive task interpret.  | 3.24                               | 2.94   | 2.69                         | 2.94  |
| Positive criteria         | 3.23                               | 2.78   | 2.35                         | 2.84  |
| <b>SRL Strats.</b>        |                                    |  |                              |   |
| Active planning           | 2.67                               | 2.13   | 1.63                         | 2.02  |
| Monitoring: learning      | 3.21                               | 2.70   | 2.14                         | 2.69  |
| Monitoring: task          | 2.92                               | 2.38   | 1.84                         | 2.24  |
| Adjusting: work w/text &  | 3.26                               | 2.87   | 2.27                         | 2.79  |
| Adjusting: making links   | 2.54                               | 1.99   | 1.46                         | 1.89  |
| Adjusting: work           | 2.94                               | 2.50   | 1.86                         | 2.26  |
| Emotion/mot. Control      | 2.89                               | 2.54   | 1.86                         | 2.21  |
| Self-evaluating           | 3.00                               | 2.46   | 1.73                         | 2.33  |
| <b>Cognitive Strats.</b>  |                                    |  |                              |   |
| Working with info.        | 2.84                               | 2.38   | 1.87                         | 2.26  |
| Working with text         | 2.90                               | 2.71   | 2.12                         | 2.50  |
| <b>Ways of Working</b>    |                                    |  |                              |   |
| Focus on Memory           | 2.36                               | 2.14   | 1.78                         | 1.91  |
| Help seeking              | 2.56                               | 2.69   | 2.16                         | 2.15  |
| Disengaged                | 1.45                               | 1.77   | 2.16                         | 1.55  |
| External focus            | 2.17                               | 2.09   | 1.79                         | 2.04  |

*Note.* All comparisons done using ANOVA plus Bonferroni post-hoc tests with alpha = .05; Yellow = mean scores higher than all other groups (with ties); Purple = mean scores lower than all other groups (with ties); Green = higher than two groups; lower than one group; Blue = higher than one group; lower than two groups; No colour = mid-range scores (between highest and lowest) at same level.

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Appendix C: ANOVA Results<sup>1</sup> on Mean Scores for the Subsets of Students in Clusters who Completed a Performance-Based Measure of Reading

| Cluster                                     | <i>n</i>   | <i>M</i>                 | <i>SD</i>   | <i>SE</i>   | Effect sizes |     |            |     |
|---|------------|--------------------------|-------------|-------------|--------------|-----|------------|-----|
|   |            |                          |             |             | C1           | C2  | C3         | C4  |
| Cluster 1: Actively Engaged                 | 75         | <b>3.48</b> <sup>2</sup> | 1.45        | 0.17        |              | .42 | <b>.67</b> | .19 |
| Cluster 2: High Stress/Actively Inefficient | 40         | 2.93                     | 1.14        | 0.18        | .42          |     | .28        | .22 |
| Cluster 3: Disengaged                       | 29         | <b>2.62</b> <sup>2</sup> | 1.08        | 0.20        | <b>.67</b>   | .28 |            | .48 |
| Cluster 4: Passive /Inactively Efficient    | 52         | 3.21                     | 1.39        | 0.19        | .19          | .22 | .48        |     |
| <b>Total</b>                                | <i>196</i> | <i>3.17</i>              | <i>1.35</i> | <i>0.10</i> |              |     |            |     |

Notes. <sup>1</sup>  $F(3, 195) = 3.504, p < .02$ ;

<sup>2</sup> Bonferroni post-hoc analyses revealed statistically reliable differences between means with the same superscript,  $p < .05$ .

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