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Establishing the Cognitive Writing Profile of Academically Lower-Achieving Students in Singapore: Why Is It Important?

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Abstract

A cognitive writing profile describes how a writer learns to write. In this paper, the author reviews the process of writing, factors affecting the writing process, literature surrounding profile of academically weaker students, and instruction on writing as a lead-in to a recommendation to develop the cognitive writing profile of lower-achieving students in the upper primary level. Given the complexity and importance of writing, this paper summarises what is already known of the process of writing and the attributes of academically weaker students, and discusses the need for a cognitive writer profile via establishing a cognitive equation for writing for academically weaker students in Singapore. In a world where literacy opens the world, where reading and writing is the foundation of literacy, the author highlights the significance of addressing the gap in research that will contribute to and document the writing learning process of lower-achieving students.

Keywords: Writing process, Instruction, Writer profile, Differentiation, Low-achieving students, Upper primary

Introduction

“All the words I use in my stories can be found in the dictionary - it's just a matter of arranging them into the right sentences” ~ Somerset Maugham

Reading the above quote makes writing sounds easy. But is it really so?

Writing is heaven to some and hell to others. Be it heaven or hell, writing, in contemporary society, is important. Even in this age of technology, the ability to write is crucial. Despite receiving less attention in research than reading, writing is a critical aspect of literacy where effective instructional techniques and models for intervention must be evaluated (Center on Instruction, 2007). In educational settings where writing is taught, are schools doing an adequate job of teaching our students to write? If so, how are our students of different academic ability learning and performing in writing? Are the profiles of academically low achieving students similar to that of their higher ability peers? If not, how can we identify the writer profile of the low achieving students and differentiate instruction to enhance their learning of writing? I believe these are questions that educators and curriculum developers are eager to find answers to.
Background

According to published data from the National Assessment of Educational Progress (NAEP), majority of the U.S. students assessed in a writing exam in 2002 were not meeting educational standards for writing proficiency; 72% of 4th graders, 69% of 8th graders, and 77% of 12th graders scored at the Basic or Below Basic levels (Persky, Daane & Jin, 2003). In the same assessment conducted in 2007, 70% of 8th graders and 76% of 12th graders scored at the Basic or Below Basic levels (Salahu-Din, Persky & Miller, 2008).

Meanwhile, in Singapore, teaching of composition writing had drawn some flakes from parents. In an open letter to Education Minister Heng Swee Keat, a parent wrote of her concern for schools in Singapore running like businesses (Edvantage, 2011). According to this parent, as a result of schools’ obsession with quantifiable results, students were taught writing based on marking templates. In the example she gave, Primary schools teachers marked the language of a composition based on how many "good phrases" were used. To this end, commercial book of good phrases became part of the syllabus and the students were told to learn or memorize these phrases. Consequently, teachers ended up with scripts of almost identical introductions from all the students.

Another teacher blogged on Tumblr about the myriad of issues and difficulties faced by his P5 students when writing, calling it a “daunting” task to get them to write (Classroom Blackboard, 2012).

Research has suggested that academically low achieving students experience more difficulty in writing than their higher ability peers (e.g., Zohar, Degani and Vaaknin 2001; Raudenbush, Rowan, & Cheong, 1993). Many factors can contribute to this negative experience, including instructional, cognitive and motivational issues. To better understand how these affect the students, we must look into the process of writing.

Process of Writing

Researchers Flower and Hayes (1981), using protocol analysis method, developed a cognitive process theory of writing after observing writers in the act of writing. They reported that their protocols provided valuable data to support their theory. According to them, writers use a combination of cognitive processes when writing. These processes surface as and when needed. There are four key points to their cognitive process theory of writing. Firstly, Flower and Hayes (1981) proposed that writing is best understood as a set of distinctive thinking processes which writers orchestrate or organize during the act of composing. Secondly, the processes of writing are hierarchically organized, with component processes embedded within other components. Thirdly, writing is a goal-directed process. In the act of composing, writers create a hierarchical network of goals and these in turn guide the writing process. Lastly, writers create their own goals in two key ways: by generating goals and supporting sub-goals which embody a purpose; and, at times, by changing or regenerating their own top-level goals in light of what they have learned by writing (Flower & Hayes, 1981, p. 366-281).
Figure 1 accounts for the major thinking processes these researchers saw in their study.

![Cognitive Process Model](image)

*Figure 1. Structure of the writing model. Adapted from Flower & Hayes (1981). A cognitive process theory of writing, p. 370.

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The implications of Flower and Hayes’ (1982) cognitive process model are manifold. For a start, it implies that it is common for writers to call on processes as needed. It also demonstrates a more flexible hierarchical process of writing which is recursive. In their model, goal direction is a linchpin to the writing process. Through composing, content goals grow into elaborate networks. The network has three important features, namely: (a) it is created as the writer composes, not completely during pre-writing, (b) it takes many forms including planning, translating and reviewing, and (c) writers continually return to their higher level goals while keeping their sub-goals in check. With this cognitive process model, it follows that problems experienced by writers are attributable, in part, to difficulties experienced during any of these processes.

**Cognitive Equation for Writing**

Agreeing that writing involves several processes that are interrelated, Chia (2007) proposed an equation (see Figure 2) to summarize the many basic processes involved for writing to become successful.

According to Chia (2007), $T(E+Co)$ forms the most fundamental part of the equation of the writing process. When a child writes, two sub-processes take place; encode ($E$) and compose ($Co$). The child needs to transform ideas into words (i.e. encode) before he or she can arrange the ideas to form a clear and unified impression to create an effective message (i.e. compose) (Harris & Hodges, 1995). For these two processes to occur (i.e. $E$ and $Co$), thinking ($T$) has to happen. $T$'s role in $E$ involves transcription, spelling and self-editing along the way. However, when $T$ interacts with $Co$, ideas flow freely into the writer’s mind while he or she...
start to sub-create various personal imaginary scenes. This results in fantasizing or imagination of events in the writer’s personal meta-world. What follows is the organizing of thoughts or ideas to formulate a plot for the story (Chia, 1991; Lewis, 1975). Chia (2007) opined that $T$ is a skill that students take with them beyond the classroom, one that can put them in good stead in the job market.

$WP = S\{B[T(E = Co) + M] + P\} = WO$

WP – Writing Process
S – Setting (where writing task takes place)
B – Background knowledge and prior experience of writer
T – Thinking
E – Encoding
Co – Composition
M – Motivation
P – Purpose
WO – Writing outcome/output

Figure 2. Cognitive equation of writing. Adapted from Chia (2007). Bridging writing and writing, p. 7-8.

Having said so, it is important to note that for anything that anyone does, motivation is a key driving force. Similarly, for writing to happen naturally, there must be that compelling force of motivation ($M$) within the writer to want to write (Singh, 1981). This $M$ was likened to an urge or itch within the writer, or simply inspiration, according to Chia (2007). Alluding this to the context of a renowned writer and author, the creator of the Narnian Chronicle, (i.e. Clive Staples Lewis), this $M$ was influenced by the author’s purpose ($P$) of writing, which was to satisfy that urge or itch within and to obtain self-satisfaction when the piece of writing was completed.

Chia (2007) further explained that $P$ plays a different role in classroom settings. Children write because it is an assigned task given by the teacher and for the grades awarded. Comparing these two scenarios, Chia (2007) concluded that there are different $P$’s. The first $P$ is the result of a writer’s intrinsic motivation to write. The second $P$ results from extrinsic motivation or external influence (i.e. to complete a class assignment and pass the formative or summative assessment). And, specific to the second $P$, two practical issues must be addressed: learning to write and writing to learn. Students do so throughout their lives (Fisher & Frey, 2004). Learning to write which encompasses encoding, spelling, sentence construction, mechanics of paragraphs, and grammar (among others) starts formally from primary school (Knipper & Duggan, 2006). These skills are refined and expanded as a student progresses to higher levels. By then, instruction starts to focus on the process of writing (i.e., pre-writing, writing, reviewing, revising, editing, and final drafting) enroute to the finished product (Walshe, 1981). On the other hand, writing to learn is different. It is because the end product is not a piece of work that will undergo revisions to become a publication but whose purpose is to serve as a catalyst for further learning and meaning making (Knipper & Duggan, 2006). As such, “the purpose for writing to learn becomes an opportunity for students to recall, clarify, and question what they know about a subject and what they still wonder about with regard to that subject matter” (Chia, 2007, p. 8). At the
same time, students discover what they know about their content focus, their language, themselves, and their ability to communicate all of that to a variety of audiences (Knipper & Duggan, 2006). That is to say, “a student’s background knowledge and prior experience (represented by B in the equation) in writing to learn is called into attention” (Chia, 2007, p. 9).

To Chia (2007), B is essential for both reading and writing. Without B, a writer simply scribbles and scribbles clueless of the product of writing. Hence, Chia (2007) explained that B’s place in the writing process is to enable the writer to bring his or her prior knowledge and experience of a subject to relevance in the current piece of writing.

Finally, Chia (2007) proposed that the setting (S), that is, where the writing task takes place, also plays an important part in the cognitive equation of writing. S can be inside or outside a classroom or home. It also includes any tangible (e.g. a dictionary to check spelling) or intangible (e.g. praise from the teacher) support.

At the end of this process is the writing outcome (WO) which depends on how successful the various aforementioned writing factors (i.e. S, B, T, E, Co, M and P) interplay during the writing process (WP).

Chia’s (2007) cognitive equation of writing basically implies that reading and writing are two processes that are reciprocal; Reading helps build up the background knowledge and comprehension that provides the ideas for writing. Implicit to this equation is also the observation that being able to write (and read) means having to think through the process. Further, being able to write prolifically requires a student to have a strong foundation of language system comprising of semantics, syntax and discourse. It also follows that whatever the writing outcome is depends on the writing process a student has gone through.

By now, one can appreciate that writing is a very complex activity or skill. Hence, it is reasonable to expect that students who are academically lower achieving find it difficult to write. Even the celebrated children’s book author, Dr Seuss found writing difficult when he lamented that “every sentence is like a pang of birth. The Cat in the Hat ended up taking well over a year” (Seuss, 1941). Nonetheless, writing is not an impossible task. To the late prolific and several award winning writer Ray Bradbury, writing is easy. To quote him, “Love is easy, and I love writing. You can’t resist love. You get an idea, someone says something, and you’re in love” (Bradbury, n.d.). In a website dedicated to him and his work, Ray Bradbury also said:

*In my later years, I have looked in the mirror each day and found a happy person staring back. Occasionally I wonder why I can be so happy. The answer is that every day of my life I’ve worked only for myself and for the joy that comes from writing and creating. The image in my mirror is not optimistic, but the result of optimal behaviour* (Harper Collins Publishers, 2012).

Writing was a playground to this famous writer. We certainly hope it is the same for our children who are learning to write and writing to learn in the schools. As academicians, educators and researchers, it is our hope that all students, regardless of academic ability, be able to enjoy, if not love writing.
It has been widely agreed that children learn to write by writing. In the U.S. it was reported that in a survey of 425 school districts, 90% of the respondents considered student writing to be a problem (Neill, 1982). This author is not aware of any similar poll in Singapore but going by anecdotal evidences, it should not be far from truth to say that it should be no different here. Though this is distressing, writing remains a critical area of the school curriculum and is an important part of the students’ lives after school (Cotton, 1988). If we are concerned about improving our children’s ability to write, we should be equally, if not more concerned about the types of the writing instruction provided in schools.

The Flower and Hayes’ (1981) model and cognitive writing equation by Chia (2007) provide us with a structured understanding of how the mind works during writing and the factors affecting writing. To harness this information and use it to develop ways to help low-achieving students write better, we need to look at the profile of low-achieving students.

Profile of Low-Achieving Writers

Literature reported that papers written by struggling writers are shorter, more poorly organized, and generally weaker in overall quality when compared to that of their higher achieving peers (Englert & Raphael, 1988; Graham & Harris, 1989, 1991; Thomas, Englert & Gregg, 1987). Compositions of struggling writers were also found to typically contain more irrelevant information and more mechanical and grammatical errors, making it less readable (Deno, Marston & Mirkin, 1982; Fulk & Sotrmont-Spurgin, 1995; Graham 1990; Graham & Harris, 1991; MacArthur & Graham 1987; MacArthur, Graham & Skarvold, 1988; Thomas, Englert & Gregg, 1987). As for the difference in writing profiles between high-achieving and low-achieving L2 writers, reportedly there is no discussion due to difficulty of collecting data of strategy use during writing, and it is an area of gap that future research should address (Chien, 2008).

In Singapore, ability-based streaming at both primary and secondary levels of education dates back to 1979 with the introduction of the New Education System (NES) following the publication of the Goh Report (Ministry of Education [MOE], 1979). Under the restructured education system, ability-differentiated curriculum and extensions of schooling length for the academically weaker students were introduced at the primary and secondary school levels (Gopinathan, 2001). Over the years, following more reviews, refinements were made to the streaming systems. Terms such as “EM3”, “Foundation Level”, “Normal Stream”, Normal (Technical) [NT], Normal (Academic) [NA], and “Institute of Education (ITE) students” were used to refer to students who were placed in the academically weaker classes or schools. Common injurious perception of low-achieving students in Singapore (e.g. NT or EM3 students) includes: (a) “stupidity”, (b) “attitude not good, Ah Beng type”, (c) “hopeless”, (d) “can’t do anything”, (e) “can’t go anywhere”, (e) “unmotivated”, (f) “lazy”, and (e) “ill-disciplined” (Ser, 2004). In an early video (Ng, 1993) introducing educators to the new NT course to be implemented in 1994, the profile of students (i.e. academically low achieving ones) to be channelled through this course was described as “good working with their hands”, “short attention span”, “creative”, “work best in groups”, and “willing to learn”.

In a study (Chang, Goh, Moo & Chen, 1997) conducted in 1994 to better understand the learning needs of NT students, the researchers drew several conclusions about NT students. These ranged from ‘average’ self-esteem which decreased as they move to the second year, ‘average’ academic achievement motivation and poor study habits, poor command of English
leading to inability to understand lessons, teachers find them to have short attention span, and preference for less critical teachers who provide structure for the class.

In yet another study by McInerney, Liem, Ortiga and Lee (2008) which provided a general profile of what motivates Singaporean secondary students to do well in school, it was reported that NT students focused more on getting rewards for their work, social power (i.e. wanting to be leader), and wanting to improve in a given task or lesson. Furthermore, NT students reportedly have a higher self-concept in English and a lower one in Math. As well, students (from Secondary 1 to 5) with low PSLE scores rated lower in their drives for self-direction (i.e. independent thought and action), achievement (i.e., personal success through demonstrated competence) and security (i.e. safety and stability of society, relationship and of self).

Having known the “how”, that is, the process of writing, and what low-achieving students are good at and weak at, the teacher can now work on how to instruct the students in writing. And, just exactly what has research found in the area of writing instruction?

**Writing Instruction**

**Writing instruction in school**

In his article *Research in Writing Instruction: What We Know and What We Need to Know*, Troia (2007) summarized several salient findings from research in writing. Amongst these, research has shown that although there are many factors contributing to the low level of writing achievement of students in general, less than optimal writing instruction in classroom is often the factor associated to this dismal state (Bridge, Compton-Hall & Cantrell, 1997; Graham & Harris, 2002; Palincsar & Klenk, 1992; Troia, 2005; Wray, Medwell, Fox & Poulson, 2000). This was affirmed by teacher self-report data from the 1998 NAEP report (Persky, et al., 2003). In this report, despite 7 out of 10 teachers indicating that they employed process oriented instruction to teach composing, only a third of these same teachers reportedly spent 90 minutes (a bare minimum) or more per week teaching writing (National Center for Education Statistics [NCES], 1999). Similarly, Graham, Harris, Fink and MacArthur (2003) found that only slightly more than half of the primary grade teachers reported making more than one or two instructional adaptations for struggling writers, and some of these adaptations were not effectively promoting writing in areas such as development of good writing skills and motivation.

Even though students are traditionally taught to think of writing as a three-step process: (a) pre-writing, (b) writing, and (c) re-writing, in that order (Gracey, n.d.), research has shown that a three-step model is inadequate (c.f. Flower and Hayes, 1981; Chia, 2007). As a result, more effective teaching models (e.g. Cognitive Strategy Instruction in Writing (CSIW), 6+1 Trait/6 Trait Writing Model) have been developed to better match and reflect cognitive writing processes as such the ones outlined above. Interventions are also targeted to remediate problems encountered at various processes of writing as well as to match the profile or characteristic of struggling writers.

Preliminary search of literature revealed that studies also found that writing instruction often focus on mechanics, missing out on explicit instruction in how to think through the metacognitive aspects of writing, even in special education classrooms (Applebee, 1981; Bridge & Hiebert, 1985; Englert, Raphael, Anderson, Anthony, Fear, & Gregg, 1988; Goodlad, 1984; Scardamalia & Bereiter, 1986).
Writing instruction model or strategy

Since writing is an integrative, creative, recursive process that involves metacognitive knowledge and skills, writing instruction should emphasize the writing process (Christenson, Thurlow, Ysseldyke & McVicar, 1989). As such, the review of writing instruction here will focus on prominent programmes that drew upon research on the processes writing.

Researchers Anderson, Raphael, Englert & Stevens (1992) investigated both the responses of the students and the teachers to a program for writing instruction called Cognitive Strategy Instruction in Writing (CSIW). According to the researchers, the CSIW program was designed for 4th and 5th graders, including those identified with a learning disability. It was a program appropriate for students approaching middle school where the demands for more independent reading and writing in content areas in classrooms are higher. Five interrelated processes of writing: Plan, Organize, Write, Edit and Revise (P.O.W.E.R.) were reflected in the CSIW program. In addition, cognitive instructional strategies were recommended for this program. These included: (a) explicit teacher modeling (thinking aloud) about the cognitive writing processes, (b) faded off coaching by the teacher through scaffolded dialogue on authentic and personally meaningful writing tasks, and (c) maintenance of the social context where dialogue with peers on writing occurs (Anderson, et al, 1992).

In earlier analyses of the CSIW student outcome data, it was found that there was clear treatment effect associated with CSIW. Students exposed to the program in resource classroom outperformed those in a control group in the areas of writing performance and metacognitive knowledge (Englert, Raphael, Anderson, Anthony, & Stevens, 1991). The treatment effect was evident for both academically normal achieving as well as the lower achieving students identified with a learning disability. In a later analysis, Anderson et al (1992) reported that variations in teachers’ practice (i.e. congruency of practice with the CSIW) raised questions on this effect. As a result, Anderson and his colleagues collected qualitative data on the teachers’ beliefs and practices. Findings suggested that these factors could explain the differences in teacher congruence and student performance.

Another prominent writing model that was researched on was the Six-Trait Writing Model (6-Trait/6+1 Traits®). Traits-based approach to writing, which drew upon research on process writing, was developed in the mid-1980s in response to teachers’ needs for an integrated instruction and assessment tool for effective writing (Kozlow & Bellamy, 2004). This model comes with specific strategies and materials for teachers that drew upon the research on: (a) process writing, (b) traits of writing, (c) peer groups, and (d) use of formative assessment to improve student learning. The 6+1 Trait® writing model was designed to help teachers teach and assess student writing through an analytic approach, focusing on seven traits that characterize quality writing, namely: Ideas, Organization, Voice, Word Choice, Sentence Fluency, Conventions, and Presentation. The model incorporates writing process as an integral component of a recursive set of activities that develop these seven traits (Kozlow & Bellamy, 2004). Research on this writing model has reported that students (5th grade) in the experimental group experienced a significantly higher increase in test scores for the Ideas trait when compared to students in the control group (Arter, Spandel, Culham, & Pollard, 1994). Secondly, post-treatment writing performance of 5th-grade students exposed to the 6-Trait method recorded a significant difference as compared to those who received traditional classroom instruction (Jarmer, Kozol, Nelson & Salsberry, 2000). Lastly, when pre-treatment differences were factored into the analyses for all data sets, there were no significant
differences between the mean posttest writing scores for the treatment group and the control group (Kozlow & Bellamy, 2004).

**Writing instruction in schools in Singapore**
The English language syllabus prescribed for primary schools in Singapore has undergone a few reviews and revisions since the 1990s. The current 2010 English Language Syllabus underscored the sustained effort of earlier syllabi in reflecting the changing aims, approaches and emphases of EL teaching and learning. According to the MOE, the syllabus is designed to be responsive to: (a) global and national concerns, (b) changing role of EL in Singapore and the world, (c) the needs of our pupils, and (d) research in language and language pedagogies. Specifically, in the area of Writing and Representing, the syllabus’ focus is on the mechanics of writing for lower primary students. For upper primary students, the instructional focus is on writing and representing skills and strategies. The detailed outline of the syllabus is available at the MOE website (MOE, 2012).

In the high stake assessment educational system in Singapore, teachers are naturally experiencing pressure from delivering the prescribed curriculum within stipulated time and yet be accountable to the achievements of their students. Pressured by tests, targets and curriculum coverage, pedagogical principles may be compromised (English, Hargreaves & Hislam, 2002). There has been no research done on how effective the MOE English language syllabus is, probably due to the fact that there is no other basis for comparison and the ethical concern and constraint of having a control group for an empirical study.

Nonetheless, Albright (2006) reported that past research conducted at the National Institute of Education (NIE) revealed that majority of mainstream and underperforming students were rarely offered the chance for engaged learning. This was confirmed in another on pedagogical change in NT classrooms. In that study, Albright and Ismail (2006) observed that the salient features of the NT curriculum are worksheets, behaviour and time-on-task management, drill and review. Reportedly, there was less emphasis on subject matter integration, acquisition of meta-languages and analysis. Instead of actively producing and constructing knowledge, the NT students were required to reproduce information. Additionally, these NT students were not encouraged to contextualize new knowledge, either theoretically or practically. Post-intervention on teaching results showed that the low expectations and deficit thinking by NT teachers about their student encompassed areas of student behaviour, writing, reading, cognitive abilities and attitudes towards school. This deficit thinking influenced the pedagogy, manifesting in: (a) assignment of decontextualized low level tasks, (b) focus on discrete skills, facts and rote learning, (c) lack of alternative assessment, (d) dumping down of curriculum with breaking down of lesson and concepts to smaller bits, and (e) prevalence of teacher-centred approaches with chalk-and-talk pedagogy primarily adopted (Albright & Ismail, 2006).

In the study by McInerney, Liem, Ortiga and Lee (2008) it was reported that NT students were found to have a significantly higher endorsement of both surface (e.g. memorization) and deep (i.e. organizing new information, relating ideas, and monitoring their understanding of learning materials) learning strategies. However, low-performing students in Math preferred surface learning strategies.

In their ethnographic study on academically low track students from NT, Ismail and Tan (2005) observed that students were largely exposed to the pedagogy of reproductive transmission of knowledge with highly prescriptive tasks. This resulted in the students
becoming passive receivers of knowledge. The study highlighted the importance of teachers and students co-constructing the learning environment, one that facilitates meaningful teaching and learning. At the end of their study, Ismail and Tan (2005) proposed that to enable the students to have a richer and more meaningful school experience, they should be exposed to some form of metacognitive strategies where they can “actively plan how to learn, monitor their progress, and evaluate their own achievements” (p. 8).

Literature review threw up one research on EM3 students in Singapore. In this study, Ng (2004) reported that majority of the EM3 pupils perceived that the work assigned to them was easier and more interesting than that of their higher ability EM1/2 counterparts. Reflective of other studies, the findings revealed that teachers had a deficit construct of EM3 students which adversely affected their perceived educability of these students. Similarly, attributes such as ‘lazy’, ‘forgetful’, ‘restless’, ‘slow’, and ‘disruptive’ were associated by the teachers with the EM3 students. As a result of this negative association, teachers focused on discipline in their interaction with these students. On a positive note, majority of the EM3 students in this study reported that they liked to attend remedial class and tried hard to do their work. The bulk of them were also confident of passing and making it to the NA stream for secondary education. Teachers polled opined that these students needed a more structured syllabus with the focus on mechanical skills. Systematic instruction with a bottom-up approach was thought to be necessary. The pedagogical choice was also reflective of the other studies; Teachers felt that these students would not be able to cope with challenging or demanding tasks. Drilling and rote learning were offered as “creative” teaching methods appropriate for the EM3 students.

Recommendations

The teacher’s task, when working with students in the learning of writing is to enter the student’s writing process at various points, assess the strengths and weaknesses, and make suggestions or give strategies to the students for improvement. The complexity of writing as outlined above means failure in writing can be multi-faceted and its causes many and varied. As such, to better develop instructions for teaching writing for low-achieving students, this author proposes that a cognitive equation for writing for these students be developed - a cognitive equation that takes into account the writing processes, factors and components or sub-components of writing learning. Literature search does not seem to throw up any research done so far in this aspect.

It is common knowledge that reading and writing is the foundation for literacy. There is a wealth of research on reading. Comparatively, research on writing is less. Research on the practice of writing instruction in the classrooms of primary schools in Singapore is especially scarce, if any. In particular, research on differential instruction in writing for upper primary students who were streamed to the foundational level for English is non-existent. Similarly, there is a dearth of research evaluating writing programmes that promotes learning for the academically low achieving students in Singapore. Most of the research carried out on academically weaker students involved students in the secondary (e.g. Normal Technical) and post-secondary level (e.g. Institute of Education). Many of these focused on issues faced by teachers, with a view to build capacity and pedagogical change to help the teachers better match the learning needs of academically lower achieving adolescents in our education system. All these point to a gap in research where describing and documenting the cognitive
Learning profile of academically weaker students can contribute significantly to the literacy development of the lower-achieving students in Singapore.

It is thus proposed that the writing behaviour of academically low achieving upper primary students in Singapore be profiled with a view to establish the cognitive equation for the writing process of these students. A cognitive equation for writing can explain the underlying causes of failure in learning of writing. It can also inform English language (EL) teachers what they ought to know and how best they could go about helping these children write better. By describing the ways low-achieving students learn to write cognitively, a cognitive equation for writing that takes into account the writing process and factors affecting the writing process can facilitate successful transition across stages of writing learning and acquisition, leading to development of more effective differential instructional strategies that better match the writing and learning profile of the academically weaker students. Further, establishing the writing profile of these academically low-achieving students vis-à-vis their higher ability peers can also help curriculum planner make informed decision on curriculum and resource differentiation and so as to better match the needs of all students.

Hence, studies conducted to help identify the writing profile and cognitive equation for writing instruction for young low-achieving school students in Singapore will be instrumental and are highly encouraged. This is especially crucial for the upper Primary level where writing instruction begins to take more emphasis and school demand in this area is higher. It is also hoped that findings from such studies can result in recommendations to enhance the approach to EL teaching to strengthen the foundation of language learning for school students, particularly for the academically lower achieving students. A better understanding of how writing works for weaker students can yield relevant curriculum and pedagogy that serves to provide appropriate experience for meaningful writing and language learning for these struggling writers. With this, writing could perhaps be heaven instead of hell for many students.

**Conclusion**

Learning (and in this case, learning to write) is a very complex task and facilitating successful learning is an art as well as a science. Using knowledge of student cognition, augmented by knowledge of the process and factors affecting learning to develop and differentiate instruction would appear to be a logical as well as relevant, if not crucial pedagogy for all educators. Identifying the cognitive writing profile for low-achieving students can provide us a window into some of the learning issues and conditions for learning that emerge in the learning of EL in the Singapore educational context. In particular, for the academically lower achieving students who needed more help, doing so can contribute to literature on the written language development of low achieving students in Singapore. The resultant development of differentiated instruction to help these students learn better will also meet the objective of the MOE’s initiative to provide students with customized and differentiated learning experiences so as to realize their potentials. By then, we may hear our students say, like Somerset Maugham did, that writing is simply a matter of rearranging words into right sentences.
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