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Application of the Structured Analysis of Written Language Tool to the Writing of Deaf

Chinese Students

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Abstract

Limited access to spoken and signed language is a worldwide phenomenon affecting deaf children. Language delay caused by impeded language acquisition has negative cascading effects on deaf children's learning and development. In the event of stymied language development, deaf students exhibit highly errored writing as well as errors unseen in the writing of hearing students. There is a need for specialized tools to evaluate and monitor the progress of deaf students' written language in ways that can inform instruction. The Structured Analysis of Written Language (SAWL), developed for this purpose, has thus far been used to analyze American students' writing. The objective of this study was to determine if and how the SAWL could be used to evaluate the writing of deaf Chinese students. After establishing a protocol, we piloted the administration of six SAWL variables in analyzing the writing of 11 Chinese and 11 American matched pairs across two genres of their writing. Our hypothesis was that the instrument would result in similar outcomes across the groups, which had been carefully matched on hearing, language, and literacy variables. Independent samples t-tests revealed that even though the groups differed on two SAWL variables for informative writing (the percentage of complete sentences and the number of words used in perfect t-units), most variables across genres were not statistically significant. Results, limitations, and implications are discussed.

Keywords: deaf Chinese, deaf American, written language, structured analysis of written language

Application of the Structured Analysis of Written Language Tool to the Writing of Deaf Chinese students

Writing is a complex activity that is supported by a strong expressive/receptive language foundation, requiring multiple skills and cognitive processes (Wolbers et al., 2022). Deaf students in China and the United States who do not have full access to language from birth face substantial writing-related challenges (Cui, 2022a; Kilpatrick, 2015; Kilpatrick & Wolbers, 2020). Although studies have examined the written output of deaf Chinese (e.g., Cui & Fu, 2019; Wang et al., 2018) and deaf American students (e.g., Antia et al., 2005; Kilpatrick & Wolbers, 2020; Marschark et al., 2002), no research has investigated whether the same written language assessment tools may be used with both populations for instructional and research purposes. This paper presents a collaboration between Chinese and American scholars to examine the potential of the Structured Analysis of Written Language (SAWL) for analyzing the written language of deaf Chinese students; until now the SAWL has been used to analyze the writing of deaf American students.

This study is the pioneering investigation into the application of the SAWL with deaf Chinese students whose writing contains numerous errors, including errors not typically found in the writing of hearing students. Investigating the application of the SAWL assessment tool to deaf students' writing across two very different languages, Chinese and English, is a significant undertaking and has potential to shed light on the shared language experiences of deaf students with diverse language backgrounds. The results of this study offer valuable implications for teachers and researchers in terms of assessing writing strengths and needs, identifying language targets, and documenting improvements.

There is significant variation in deaf children's use of communication modes and levels of linguistic input (Hall, 2020). Consequently, the expressive/receptive language of deaf students around the world ranges from attaining age-appropriate language milestones in speech and/or sign language to exhibiting significant delays. Language is the foundation upon which writing skills are built. In this paper, attention is given to deaf students who are exhibiting struggles in language and literacy development, rather than those who are progressing similarly to their same-age peers. As such, we begin with a review of factors that may negatively impact deaf children's access to and development of language (spoken and signed), subsequently leading to a need for specialized assessment and instructional approaches. Factors include societal views and policies, experiences with early education, hearing technologies and services, and access to quality and quantity of signed and spoken languages.

Literature review

Societal contexts of China and the United States

Societal contexts inherently shape the language acquisition experience of deaf children (Andrews & Jones, 2021; Jones, 2021; Reagan, 2011). Deafness is often viewed through a pathological lens in both China and the United States (Lytle et al., 2005; Reagan, 2020): hearing is seen as the norm, whereas deafness is an issue to be "fixed." Other views frame deafness as simply a difference in lived experience, akin to gender or race (Reagan, 2020), yet this conceptualization represents a minority stance. The long-standing deficit perspective largely guides how hearing families and medical personnel proceed with audiological approaches (e.g., medical procedures, hearing technologies, auditory and speech training), without consideration for sign language, to increase a deaf child's ability to hear and acquire spoken language. The language outcomes of deaf children receiving these approaches are varied. The spoken language

outcome means of deaf children with average nonverbal cognitive ability can be 1-2 standard deviations below typically developing children, and language delays can be more pronounced for those with severe hearing levels (Cupples et al., 2018). Variability in language development impacts literacy achievement. In a review of 21 studies of cochlear implant users (Mayer & Trezek, 2018), literacy outcomes were reported as highly variable, with the majority of reading outcomes in the low average to average range. Writing outcomes were less robust due to limited studies, yet show variability from poor to superior. While the authors describe many students who are performing at or near to their hearing peers, they also call for greater research into the factors impacting the development of a subpopulation of deaf students with cochlear implants who are underperforming.

While sign language can stave off language delay in deaf children since it is fully accessible through visual means, it is often not sufficiently present in the lives of deaf children. Hearing parents are often shocked to receive the news that their child is deaf (Mauldin, 2012) and are poorly equipped to use sign language or to be visual language models for their child (Mitchell & Karchmer, 2004). Based on previous studies, the majority of deaf children worldwide, approximately 95%, are born into families with hearing parents (Cui, 2022a; Mitchell & Karchmer, 2004). Consequently, proficiency in sign language among parents is generally lacking. Although some parents may attempt to acquire sign language skills, a significant portion of them do not attain fluency in the language (Leigh et al., 2020), meaning their children are exposed to varying levels of linguistic input. If deaf children receive early and sufficient access to sign language, irrespective of coming from deaf or hearing families (Allen & Morere, 2020), they can show similar levels of performance to hearing norms in their higher-order thinking such as executive function skills (Hall et al., 2017) and reading and writing

(Holcomb, 2023; Prinz et al., 2013). However, data collected from the Gallaudet Research Institute (GRI, 2014) on 23,731 deaf students in the United States indicated that 72.7% of deaf children's families reported not using sign language regularly at home.

Educational Contexts of China and the United States

Prior to the implementation of the universal newborn hearing screening (UNHS) program and genetic screening for deafness-susceptibility in newborns (GSDSN) program in China, children with severe and profound hearing loss faced challenges in receiving timely diagnosis and appropriate interventions until the age of three. Similarly, children with mild and moderate hearing loss experienced even further delays in diagnosis, significantly impacting their auditory and speech development (Yang et al., 2015). When starting elementary school, there are deaf children in China (Andrews & Jones, 2021) and America (Clark et al., 2020) who exhibit severe language delays.

In addition to societal beliefs, countries' educational policies inform deaf children's access to education and sign language (Hult & Compton, 2012). In accordance with the Compulsory Education Law of the People's Republic of China, enacted in 1986, every child is entitled to attend school and receive formal literacy instruction at the age of 6 or 7. Prior to beginning primary school, deaf children in China usually undergo oral rehabilitative training and "hearing recovery" programs, which are predominantly self-funded, at around the age of two. Those children who demonstrate favorable progress in rehabilitation are generally enrolled in the regular primary schools, whereas those with unsatisfactory outcomes are placed in special schools. Prior to 2007, China predominantly advocated for the "oral-aural approach" in deaf education, influenced by the principles established during the Milan International Conference in the 1880s, which emphasized the primacy of spoken language over sign language. In 1990, the

Special Education School Regulations declared spoken Chinese as the “sole primary language for instruction,” with sign language serving as a supportive tool (Yang, 2006). The ultimate objective was to integrate deaf students into mainstream classrooms and achieve inclusive education (Cui, 2022a; Wang & Andrews, 2021). Despite some progress made through collaborations like the Vancouver ICED 2010 Organizing Committee and the British Columbia Deaf Community (BCDC) in their statement “A New Era: Deaf Participation and Collaboration” which calls upon nations to accept and respect all languages, specifically the sign languages of deaf populations, the “oral-aural approach” still maintains a significant presence in the education of deaf students (Yang et al., 2015). In 2014, the State Council of the People’s Republic of China approved the implementation of the Special Education Promotion Plan (SEPP) (2014-2016), which aims to comprehensively promote inclusive education to ensure that every child with disabilities receives appropriate education (Gu et al., 2019). According to the SEPP, teaching Chinese literacy is a primary focus in schools for the deaf, and deaf students are encouraged to select a communication method that aligns with their language background (Gu et al., 2019). While there has been increasing recognition of Chinese Sign Language (CSL) by the Chinese government in the last decade, spoken Chinese continues to be the lingua franca of the deaf classroom and the desired achievement goal (Jones, 2021).

In the United States, the Individuals with Disabilities Education Act (IDEA) was enacted in the mid-1970s. This legislation afforded students with disabilities the right to be served in the least restrictive environment, which has often been interpreted as deaf students being included with their hearing peers (Hult & Compton, 2012). Based on recent statistics provided by the National Center for Educational Statistics (2023), it is reported that approximately 71,000 deaf students between the ages of 3 and 21 are currently receiving special education services under

the IDEA. The Office of Special Education Programs (OSEP, 2023) reports that a significant majority of deaf students aged 5 to 21, specifically more than 88%, have their individualized education programs implemented within the public school system. Moreover, among deaf students enrolled in public schools, a substantial 64.5% spend 80% or more of their school day in general education classrooms (OSEP, 2023). Many of these students receive specialized direct and/or indirect services from itinerant teachers for the deaf. In 2016, Antia and Rivera reported the results of a 5-year investigation of 197 deaf students in public schools; sixty percent of students received direct instruction for one or more academic area from an itinerant teacher for the deaf, and 80% for one or more non-academic area. From 2011 to 2021, the amount of deaf students who graduated with a regular diploma rose more than 10%, from 73.4% to 84.2% (OSEP, 2023).

While these numbers point to many deaf students having sufficient spoken or signed language in the educational environment to perform quite well, with or without the support of an itinerant teacher, it is also the case that there are deaf students who have insufficient access to support services to address their language and learning delays. In a survey of 267 itinerant teachers of deaf students (Pedersen & Anderson, 2019), teachers report approximately 35% of students on their caseloads are performing at grade level, above grade level, or within 6 months of their grade level, and are receiving appropriate services. As the students' delays increase, the teachers increasingly report that the educational services they provide (commonly 60-180 minutes per week) do not adequately meet their students' needs.

Additionally, the majority of deaf students receiving interpreting accommodations in the general education classrooms are with persons who have inadequate sign language and interpreting skills (Schick et al., 2006) for which error rates can be above 50% of the content

they interpret (Nicodemus & Emmorey, 2013). For deaf students in “solitary mainstream” situations where they are the only deaf student in the school (Olivia, 2019), the interpreted language may be the sole source of sign language input for a student, which can exacerbate language and learning delays (Caselli et al., 2020). Researchers highlight the need for accessible and language-rich environments for deaf students, with regular and consistent access to deaf peers and trained professionals (Clark et al., 2020; Potier & Givens, 2023).

Language is a tool through which daily experiences are mediated; therefore, limited access to it has detrimental implications for various aspects of development and learning, including behavior and executive functioning (Hall et al., 2017), language processing (Pénicaud et al., 2013), identity development (Potier & Givens, 2023), and theory of mind and literacy development (Lederberg et al., 2013). While language deprivation is virtually unknown to the hearing population except in extreme cases of isolation, it exists in the deaf population due to language inaccessibility and isolation (Gulati, 2018). It’s not uncommon for deaf children who are starting elementary school to exhibit language delays (Andrews & Jones, 2021; Jones, 2021; Allen et al., 2014).

Written language of Chinese and American deaf students

Similarities have manifested in reports of deaf Chinese and American children who are displaying considerable language delays in school (Andrews & Jones, 2021; Clark et al., 2020). Naturally, limited language input results in limited language output, in signed, spoken, and/or written language. Two studies represent some of the most recent investigations into writing among deaf learners. Mayer and Trezek (2023) reported that the performance of 64 deaf students on the Test of Written Language-Fourth Edition exceeded previous research conducted before the era of early identification and intervention with improved hearing technologies. The majority

of participants exhibited writing skills at or above the level expected for their hearing-age peers, with 10-20% of students performing in the “very poor” to “below average” range. In a study by Holcomb et al. (2023), of 382 students aged 8 to 13 in the original data set, 42 students with no additional disabilities were identified as emergent writers at different stages of emergent writing development, signifying considerable language delay. Writing resembled that of younger children aged 3-7, ranging from drawing, scribbling, forming mock letters, and creating random strings of letters to individual words (labels) and short phrases. Some of the students, “did not have sufficient vocabulary and linguistic features in any language in order to be able to understand, reflect, and respond to the prompt[s]” they were given (p. 19). While this study represented deaf students experiencing significant delayed language acquisition, the authors suggest many more children exhibit mild to moderate delays by having greater access to spoken and/or signed language while still facing barriers to full access. It is important to acknowledge that research on deaf students’ writing is quite limited (Mayer & Trezek, 2018; Wolbers et al., 2023). Further research is necessary to accurately reflect the writing outcomes of deaf students within this evolving context.

Deaf students can encounter barriers in gaining access to language, whether it be Chinese, English, CSL, or American Sign Language (ASL), even though they live amidst rich lingual and multilingual environments. When they are not fluent in spoken or sign languages, deaf students may struggle to navigate the seemingly countless rules in the languages between which they are working (Hoffmeister et al., 2022). When it comes to writing, a wide vocabulary and knowledge of linguistic features are necessary for constructing thoughts and translating those thoughts into writing (Santangelo & Graham, 2016). With the experience of impeded language development, deaf students do not possess a full spectrum of lexical and grammatical knowledge (Batool &

Hameed, 2018). As a consequence, they may exhibit highly errored writing (Brisk, 2012), as well as demonstrate errors unseen in the writing of hearing students. Teachers could benefit from a tool to assess and to track the progress of their deaf students' writing.

Characteristics of Chinese and American deaf students' written language

The written language of deaf individuals in China is rarely investigated. Limited studies on the written language of signing and speaking deaf students in schools for the deaf have suggested that simple sentences with subject-predicate structures are prevalent, and that syntactic errors are observed in both simple sentences and complex sentences (Wang et al., 2018). According to Wang et al. (2018), the main syntactic errors in deaf Chinese writing include problems with subjects and objects, verb-object dislocation, and improper word order in complements. Additionally, syntactic errors between sentences typically involve deficiencies in linking words (Cui, 2018; Wang et al., 2018). At the discourse level, both signing and speaking deaf students have been observed introducing multiple topics without elaborating on them (Cui, 2022a; Cui & Fu, 2019). Educators of deaf students in China consistently report that errors in the written language of these students are complex and challenging to correct. Furthermore, they face difficulties in systematically classifying these errors and tracking their students' progress due to the absence of an effective tool for assessing the written language of deaf students (Cui, 2022b).

Compared to the research on the written language of deaf Chinese, research involving American deaf students is slightly more plentiful. The findings show that American deaf students' strengths include story construction, spelling, and punctuation (e.g., Antia et al., 2005; Wolbers et al., 2012). When important meanings are conveyed through writing, it may be lacking thick descriptions of details (Paul, 2009) or genre-specific traits (Wolbers et al., 2021). Deaf education

teachers report that many of their students, regardless of communication mode, generate ideas for writing but refrain from revising their ideas which proves to be more challenging to them (Wolbers et al., 2023). Deaf students in public schools and schools for the deaf have demonstrated difficulties with English contextual language, vocabulary, and syntactic complexity (Antia et al., 2005; Batool & Hameed, 2018; Wolbers et al., 2012), such as fewer words, less complex noun phrases, and simple verb constructions (Kilpatrick & Wolbers, 2020; Thierfelder & Stapleton, 2016). These characteristics can give writing the appearance of being choppy, simplistic, and rigid (Marschark et al., 2002). In a study of 79 later elementary students who sign or use spoken language, approximately 84% were performing 1 to 3 standard deviations below the expected mean on the Woodcock Johnson III Broad Written Language (Wolbers et al., 2022). American teachers of deaf students have reported that it is easier to teach concrete writing skills that are easier to measure, such as punctuation and spelling, and suggest more research focused on evaluating students' English productions (Kilpatrick & Wolbers, 2020; Wolbers et al., 2023). All of these studies point to a potential usefulness of a sensitive writing instrument like the SAWL with deaf students who are delayed in their language development and who may be diverse by communication mode and the educational context within which they are served.

Commonalities of Chinese and American deaf students' written language due to sign language

In addition to enduring language delay, Chinese and American deaf students may exhibit similar writing characteristics due to growing linguistic repertoires inclusive of the sign language modality (Cui, 2022; Wolbers et al., 2014). For example, the classifiers “个” /~gè/, “只” /~zhī/, and “辆” /~liàng/ in Chinese commonly appear between numerals and nouns to convey the unit

of calculation for people or things. Deaf Chinese writers frequently omit classifiers (e.g., “个” /~gè/, “只” /~zhī/, and “辆” /~liàng/) (Cui, 2018). There is not an equivalent feature in CSL, which may explain this omission (Cui, 2018). Moreover, Chinese deaf students likewise have a tendency to make mistakes encountering function words (i.e., 的 /~dē/, 了 /~lē/, 着 /~zhē/, 过 /~guò/) which express grammatical relations in Chinese. Such relationships are expressed differently in CSL. Their meanings are also abstract and can change depending on the usage. Chinese deaf students’ writings suggest they may be drawing upon their CSL linguistic knowledge (e.g., when nouns are misused as verbs; Wu, 2005).

Similarly, American deaf students are apt to draw upon all of their linguistics resources during writing as they are growing in their bi-/multi-lingual linguistic competencies. They may make mistakes when writing function words such as articles (Koutsoubou et al., 2007; Singleton et al., 2004) because specific and non-specific nouns are produced differently in ASL and English. Plurality in ASL is often indicated by noun repetition or movement (or a quantity preceding the noun) rather than by a single morpheme. Further, there are syntactic differences between the languages such as the use of rhetorical questions in signed expressions, which may lead to students writing “why?” rather than “because” in the middle of a statement (Wolbers et al., 2014). In the absence of instruction that explicitly builds metalinguistic knowledge of language use across contexts (Wolbers et al., 2023), students apply the linguistic knowledge they have at the time of their writing. While Chinese and English differ, similar linguistic factors seem to influence deaf students’ writing when developing as bi- and multi-lingual individuals.

Teachers of deaf students teach writing to a wide range of writers, from emergent writers to more fluent writers, and need a way to assess students’ written language use to inform their writing instruction, track students’ progress, and assess the effectiveness of their instructional

approach(es). Striving deaf writers who have experienced limited accessibility to language(s) can oftentimes produce extremely flawed written language, and it is critical that their teachers have a tool to evaluate their writing.

Measuring the written language of deaf writers: Structured Analysis of Written Language

Regarding the existing assessment tools, such as standardized measures like the Test of Written Language–Fourth Edition (TOWL-4) and Woodcock Johnson Broad Written Language, language analysis tools like Computerized Language Analysis (CLAN) and Systematic Analysis of Language Transcripts (SALT), and rubric scoring of writing samples like the National Curriculum guidelines-TES (2012), these are primarily used for research purposes rather than classroom progress monitoring, or they do not isolate language development for measurement. Furthermore, many of these instruments are time-consuming, are designed to be used summatively every 6 months to a year, or do not yield values for linguistic skills that allow for quantitative comparisons across the entire school experience. In the context of “diagnostic teaching” and “evidence-based practice,” it is essential to have viable evaluation tools available for classroom use, enabling teachers to objectively monitor their students’ language development and apply research principles to assess the effectiveness of instructional practices.

The SAWL protocol has been developed to assess the written English skills of deaf students and provide detailed measures of growth over time by tracking indicators of language clarity and complexity (White, 2007). This quantitative measure allows teachers to objectively evaluate students’ writing irrespective of their proficiency level in written English (i.e., perfect, flawed, or minimal strings). Additionally, the assessment procedure is efficient as each language sample typically requires an average time of 8 minutes and 15 seconds (Graem, 2003). Studies have examined the usability indicators of SAWL, with results indicating that the protocol

exhibits good interscorer and test-retest reliability ($r > .80$ for all indicators) (White, 2007; Wolbers et al., 2022).

In the SAWL, the “t-unit,” an independent clause and its dependent clause counterparts (Hunt, 1965), is the basic unit of analysis. Hunt (1965) explained that students’ number of t-units used per 100 words (TU/100) declines as their writing improves, whereas the words and clauses in a t-unit increase. While other assessments of written English use t-units as a foundation, the SAWL is unique in that it defines criteria for evaluating highly flawed English (White, 2007). An index of measurement embedded in the SAWL is the word efficiency ratio (WER), which includes three levels. WER I is the number of words in perfectly constructed t-units divided by the total words in a sample. A number such as 0.8 (or 80%) indicates that most of a student’s text is grammatically accurate; a sample scored at 0.05 (or 5%) is highly errored. WER II is the number of words in perfect and flawed t-units divided by the total words in a sample. A flawed t-unit contains the required critical structures such as a subject, predicate, and prepositions alongside minor errors (e.g., incorrect verb tense or missing articles). If the student who scored an 0.8 WER I was to achieve a WER II score of 0.95, their writing would consist mostly of perfect t-units and some flawed t-units; nearly all sentences would have the necessary critical structures. WER III consists of the words used in perfect and flawed t-units as well as any grammatically perfect strings that are three or more words long. This sum is then divided by the total words in the sample to provide the highest WER ratio of the three levels. In its original design, the SAWL could be used to additionally calculate morphemes per t-unit for each of the three levels (White, 2007).

Several studies have referred to the SAWL to analyze deaf students’ English writing (Bowers et al., 2018; Cheng & Rose, 2009; Kilpatrick, 2015; Weir & Ayliff, 2014; Wolbers et al.,

2018). Scholars measuring the impact of Strategic and Interactive Writing Instruction (SIWI), a framework for writing instruction with deaf students, have explored students' writing development using SAWL (e.g., Bowers et al., 2018; Wolbers et al., 2018, 2022). Researchers have deemed the SAWL to be a powerful measure of writing maturity given the technique's ability to spotlight even the smallest development in written English texts that are markedly flawed. The instrument can be used with deaf students regardless whether they use spoken and/or signed language. Researchers have also used the SAWL scoring form to derive additional variables such as percentage of complete sentences and a complexity index calculated as words per t-unit (Wolbers et al., 2018). Thus far, the SAWL instrument has been used to analyze English writing of deaf students but may have wider applicability. We, hence, examine whether the SAWL instrument can be used to analyze the written Chinese of deaf students.

Research questions

The purpose of the present study was twofold: 1) to examine whether and how the SAWL could be used to analyze deaf students' Chinese writing and 2) to pilot the SAWL with matched American and Chinese student pairs to further validate the instrument's use for monitoring Chinese students' writing skills. We asked the following two main research questions:

- (1) Can the SAWL be used to analyze Chinese writing, and, if so, are any adaptations needed?
- (2) Are significant differences identified in the written language of matched Chinese and American deaf students with the application of the SAWL?

We hypothesize that some SAWL variables are able to be applied across languages, and that there will not be significant differences in the outcomes of the carefully matched Chinese and American groups. Non-significant outcomes on variables deemed applicable across

languages would indicate there is potential for the SAWL's use with both populations. The procedures and findings are presented in two parts.

Part 1: Can the SAWL be used to analyze Chinese writing?

Procedures

We first needed to determine whether the SAWL could be used to assess Chinese writing. A team of researchers was analyzing deaf American students' writing using the SAWL as part of their research. The team consisted of the three authors and two other members. The first co-author, who is a Chinese native, came to the United States to learn more about how the SAWL is being used. She attended SAWL training, scored English samples, and participated in scoring discussions for those samples. The group was working to increase the inter-rater reliability of their scoring at the time this study was conducted. Team members would independently score writing samples from 10–20 American students and then convene to compare results and discuss discrepancies. The team achieved 99% inter-rater reliability after two months of practice. The first co-author applied SAWL scoring to Chinese writing upon reaching a high level of inter-rater reliability in English. She later concluded that a modified SAWL could be used to analyze written Chinese. Corresponding adaptations and rationale are provided next.

Findings

Applying SAWL to Chinese writing: Defining words

Since word count is needed for calculating WER ratio when using the SAWL, it was an important first step to define what would be considered a “word” in Chinese. Morphemes, words, and phrases can be difficult to distinguish in Chinese. In the present study, we defined a free morpheme as a word. More specifically, if one morpheme could be used independently, it was scored as a word in the SAWL. For example, “家人” [people in the family] contains two free

morphemes—“家” [house] and “人” [person]. It thus was counted as two words. Conversely, “高兴” [happy] was counted as one word because the two morphemes are bound morphemes and cannot be used independently.

When distinguishing free and bound morphemes, the syntactic, phonetic, and semantic properties of a morpheme should be taken into account. First, when you have two morphemes and would like to determine if they are free or bound, you can examine the syntactic properties of the statement. If another morpheme or morphemes can be inserted between the two morphemes you are examining, both can be considered free morphemes and counted as two words. For example, in “读书” [read book], additional morphemes can be inserted as “读/书”—“读/一/本/书” [read one book] and “读/故事/书” [read the story book]. Therefore, “读” [read] and “书” [book] are counted as two free morphemes. In terms of phonology, written Chinese includes five tones (i.e., first, second, third, fourth, and neutral). A morpheme with a neutral tone cannot be used independently; therefore, it is counted as a bound morpheme. The final morphemes in the following examples has a neutral tone and thus cannot be separated from the previous morphemes: “起来” [stand up], and “地上” [on the floor]. In terms of semantics, it also played a role in the scoring of morphemes as either free or bound. When two morphemes are combined to create a compound meaning, such as “白鞋” [white shoes], each morpheme can be counted as a free morpheme, if it retains its meaning upon separation – “白” means *white*, and “鞋” means *shoes*. By contrast, “白菜” [cabbage] is composed of “白” which means *white*, and “菜” which means *vegetable*. “白菜” [cabbage] cannot be divided into two free morphemes. Hence, “白菜” [cabbage] would be considered as one word during SAWL scoring.

Some special notes about the definition of words in the SAWL involve the names of persons and places, as well as numbers. A person's name is counted as one word, such as “韩梅梅” /hán méi méi/ or “猪八戒” /zhū bā jiè/. Place names are divided into several free morphemes; for instance, “北京/聋/人/学校” [The Beijing Deaf School] should be counted as four words. Numbers (e.g., 3.1415) are counted as one word regardless of length. These rules are the same for scoring English samples.

Applying SAWL to Chinese writing: Defining critical structures

When analyzing English t-units using the SAWL, perfect and flawed t-units are distinguished from non-clauses based on whether they contain the “critical structures.” In English, a critical structure includes the subject, predicate, and prepositions; it is important these are included although they may be errored. When adapting the SAWL to analyze Chinese writing, we needed to define critical structures in Chinese. Two types of sentences in Chinese were identified as different in nature from English: 1) linked sentences sharing the same subject and 2) “non-subject-predicate” sentences for which subjects were not required.

Chinese is a topic-prominent language (Li & Thompson, 1989), and many related sentences can share the same topic. The subject does not need to be repeated once it has been addressed in the first sentence. In this study, a Chinese text that included the subject in the first sentence but did not repeat the subject again was not negatively scored solely based on the missing subject. If a student wrote a group of connected sentences where the subject was not established in any sentence, the first sentence would be counted as a non-clause, but the remaining sentences would be considered grammatically appropriate.

Additionally, some sentences, which we call “non-subject-predicate” sentences, do not require a subject. Some examples from the samples include “下雨了” (literal English translation:

Down rain /~le/), meaning *It rains*; and “上课了”(literal English translation: Begin class /~le/), meaning *The class begins*. These “non-subject-predicate” sentences were counted as either perfect or flawed t-units (with minor errors present) when they were analyzed using the SAWL.

After reviewing the different characteristics of Chinese and English, several variables of the SAWL were found to be usable in analyzing the writing of deaf Chinese students. These variables included total word count; total number of t-units; percentage of complete sentences; and WERs I, II, and III. Variables based on number of words per t-unit were not used because Chinese t-units consist primarily of main clauses without dependent clauses, making such variables difficult to compare to English. English and Chinese samples therefore could not be compared on any language complexity variables affected by the presence of dependent clauses.

Part 2: Application of the SAWL to the writing of matched deaf Chinese and American students

Methods

Participants and Settings

The study sample consisted of 22 Chinese and American students who exhibited errored writing and were matched by their language and literacy levels. There were 11 Chinese students (5 female and 6 male) between the ages of 10 and 13 who were born into hearing families and attended a semi-residential school for the deaf in a large city in northern China. Those students who live far from the school have the option to reside on campus during the week and return home once a week, while those who live close to the school commute daily. The children were all fourth graders despite their age differences. The students often used CSL with their peers and a limited number of deaf adults in the building, including a CSL teacher in the first year of their enrollment. Classroom instruction, however, was largely provided by hearing teachers who were

not required to demonstrate proficiency in CSL. In their communications with students, teachers relied heavily on spoken Mandarin with some simultaneously signed Chinese, or sim-com. Three students had initially entered public school and subsequently transferred to the school for the deaf. Families in the homes spoke Mandarin. The extent to which students and family members used CSL with each other is unknown. One student (C2 in Table 1) lived in a welfare agency and received exposure to CSL there. Table 1 presents additional demographic information, including race, disability, hearing level, amplification, amplified hearing level, and whether the students used sign, speech, or both.

Eleven deaf American students (6 female and 5 male) of the same ages in grades 4-6 were selected as complementary pairs to the Chinese students. These students were drawn from a larger study sample that included 37 later elementary students. Researchers chose American students who matched the 11 Chinese students based on teacher-reported reading levels, expressive communication skills, and hearing levels. At the time the samples were collected, three of the students attended self-contained classrooms in public schools; the teachers' communication was predominantly spoken language with sign support. The remaining eight students attended residential or day schools for the deaf where the teachers' communication included the separate use of ASL and English (spoken and/or written), and teachers were proficient (although not native-like) in using ASL. Five of these students had transferred from public school programs. All families in the students' homes spoke English; two students were exposed to an additional spoken language (i.e., Spanish and Thai) by at least one family member. Two families used ASL to a large extent (A2 and A7), and two families used ASL at home to some extent (A5 and A10).

Information on the students' and their families' history of early intervention programming was not collected for this study. IRB approval was obtained through the University of Tennessee for the American students, as a part of a larger study. In China, the teacher, students, and families were informed of the aims, procedures, benefits, and risks of the study prior to participating, and consent forms were collected from teachers and guardians.

Table 1*Student Demographic Data*

ID	Age	Gender	Race	Hearing Level (dB)	Amplification	Amplified Hearing Level (dB)	Additional Disability	Sign (S)/ Speech (SP)	Other Home Lang.
C1	16	F	Han	7	CI	4	-	S	-
C2	13	M	Han	5	-	-	Lang. Delay	S	-
C3	12	M	Han	7	CI	3	-	S/Sp	-
C4	12	F	Han	7	CI	4	-	S	-
C5	12	M	Han	7	CI	3	-	S/Sp	-
C6	12	M	Han	7	CI	4	-	S/Sp	-
C7	11	M	Han	6	HA	4	-	S/Sp	-
C8	11	F	Han	7	CI	3	-	S/Sp	-
C9	11	F	Han	7	HA	5	-	S/Sp	-
C10	10	M	Han	7	HA	4	-	S/Sp	-
C11	10	F	Han	6	CI	4	-	Sp	-
A1	13	M	White	7	CI	3	-	S/Sp	-
A2	10	F	White	7	-	8	Lang. Delay	S	-
A3	11	F	Asian	7	CI	3	-	S/Sp	Thai
A4	11	F	Black	7	HA	4	-	S/Sp	-
A5	11	F	White	5	HA	3	-	S/Sp	-
A6	10	M	Black	7	CI	2	-	Sp	-
A7	13	M	Multi	7	-	9	Autism	S/Sp	-
A8	12	M	Black	7	HA	3	-	S/Sp	-
A9	10	F	Black	6	HA	2	-	Sp	-
A10	12	F	White	4	HA	9	-	S/Sp	-
A11	10	M	Latino	7	CI	3	-	S/Sp	Spanish

Note. Hearing level and amplified hearing level are denoted as 1 = Hearing within normal limits (0–15dB), 2 = Slight (16–25dB), 3 = Mild (26–40dB), 4 = Moderate (41–55dB), 5 = Moderately Severe (56–70dB), 6 = Severe (71–90dB), 7 = Profound (91dB+), 8 = No amplification, 9 = Information unavailable. Amplification is indicated as cochlear implant (CI) and hearing aid (HA). Students' communication modes are represented as sign (S), speech (SP), or both (S/SP). Lang. Delay is used for those students reported as exhibiting severe cases of language delay.

Data collection

The researchers had access to two narrative and two informative writing samples from all student participants, which were collected during a 12-week period of the 2017–2018 school year. The genre-specific writing prompts, in Appendix A, were not identical, as they were designed before the researchers began collaborating. Even so, the prompts shared fundamental genre similarities: narrative prompts required students to write about a personal experience, and informative prompts asked students to share information about a specific topic with an audience. All students completed these assignments independently in class with no imposed length or time limits. The groups collectively generated 44 narrative samples and 43 informative samples (one missing American sample).

Scoring

Each of the students' writing samples were divided into attempted t-units and entered into a SAWL scoresheet (see Appendix B for example scoresheets of Chinese and English samples). In regards to the attempted t-units, we counted complete sentences and non-clauses. When preparing students' samples to be examined using the SAWL, the full sample must be broken into t-units. This does not mean that each t-unit at this point is considered a complete sentence containing the critical grammar structures such as subject, verb, and prepositions. It is, however, the student's attempt to write a sentence, and this may contain critical errors. A complete sentence indicates the attempted t-units were considered complete (i.e., having the critical structures). A non-clause is an attempted t-unit with missing critical grammatical structures that could be evaluated for word strings (i.e., three or more words in perfect order). The number of words in a word string was tallied; all other words not counted were entered in the "dump" column. Complete sentences were scored as either flawed or perfect, and the number of words

was counted and recorded under the associated column. Once a full sample was scored, the scoresheet automatically tabulated scores for six variables: total words; attempted t-units; percentage of complete sentences; and WERs I, II, and III.

The authors and other team members double-scored all English samples; inter-rater reliability was .987 on the six focal variables. All Chinese samples were double-scored by the first co-author and a trained colleague in China, and inter-rater reliability was .94. Scores for the six focal variables were derived for narrative and informative writing by averaging the students' performance across the two writing attempts per genre. SAWL data were subsequently input into SPSS 24.0 for analysis. Independent samples *t*-tests were then performed to detect any statistically significant differences by group.

Results

After analyzing the full dataset, we found that deaf Chinese and American students did not vary significantly on most of the validated SAWL variables. Measures of central tendency, variability, and range of scores on the variables (reported in Tables 2 and 3) were similar between the groups. Upon running the independent sample *t*-tests, two statistically significant differences emerged for informative writing (i.e., WER I and the number of complete sentences). Results are outlined below by variable.

Table 2

Descriptive Statistics for Narrative Samples Across Groups

	Chinese			American		
	<i>M</i>	<i>SD</i>	Min-Max	<i>M</i>	<i>SD</i>	Min-Max
Total Word Count	105.22	54.7	69-229	78.5	42.1	38-185
Total T-units	15.7	7.4	8-32	12.5	5.6	8-27

Complete Sentences	.59	.22	.19-.9	.78	.23	.36-1
WER I	.40	.24	.04-.74	.26	.23	0-.86
WER II	.58	.24	.12-.86	.64	.26	.16-.96
WER III	.87	.11	.61-1	.75	.22	.31-1

Table 3

Descriptive Statistics for Informative Samples Across Groups

	Chinese			American		
	<i>M</i>	<i>SD</i>	Min-Max	<i>M</i>	<i>SD</i>	Min-Max
Total Word Count	88.4	47.7	36-190	90.4	39.7	31-159
Total T-units	13.4	6.11	5-26	13.4	5.4	7-22
Complete Sentences	.52	.24	.9-.94	.78	.26	.25-1
WER I	.43	.26	.06-.95	.20	.23	0-.64
WER II	.52	.25	.09-.95	.68	.24	.22-.94
WER III	.78	.17	.41-1	.83	.17	.4-.98

Total word count

Whereas deaf Chinese students wrote more words on average than deaf American students for narrative writing (Chinese: $M = 105.22$, $SD = 54.7$, min-max = 69-229); American: $M = 78.5$, $SD = 42.1$, min-max = 38-185), the opposite was true for informative writing (Chinese: $M = 88.4$, $SD = 47.7$, min-max = 36-190; American: $M = 90.4$, $SD = 39.7$, min-max = 31-159). These differences were not statistically significant for either genre [narrative: $t(20) = 1.28$, $p = .21$; informative: $t(19) = -.10$, $p = .92$].

Total attempted t-units

All samples were deconstructed into the number of attempted t-units. Deaf Chinese and American students both wrote an average of 13 attempted t-units in informative texts (Chinese: $M = 13.4$, $SD = 6.11$, min-max = 5-26; American: $M = 13.4$, $SD = 5.4$, min-max = 7-22). During narrative writing, deaf Chinese students attempted more t-units on average ($M = 15.7$, $SD = 7.4$, min-max = 8-32) than deaf American students ($M = 12.5$, $SD = 5.6$, min-max = 8-27). No statistically significant differences were identified across genres [narrative: $t(20) = 1.15$, $p = .26$; informative: $t(19) = .004$, $p = .997$].

The comparable results in total word count and attempted t-units indicates that the matched deaf Chinese and American students produced texts of similar length, and the rules used to classify the counting of Chinese free morphemes appears to parallel the counting of English words for the SAWL analysis.

Percentage of complete sentences

Deaf American students wrote a greater number of complete sentences for narrative ($M = .78$, $SD = .23$, min-max = .36-1) and informative writing ($M = .78$, $SD = .26$, min-max = .25-1) than deaf Chinese students on average (narrative: $M = .59$, $SD = .22$, min-max = .19-.9; informative: $M = .52$, $SD = .24$, min-max = .9-.94). Our analysis revealed no significant differences between groups for narrative writing [$t(20) = -1.97$, $p = .06$]. A statistically significant result manifested regarding complete sentences for informative writing [$t(19) = -2.4$, $p = .03$].

WER I

WER I represents how many total words in a writing sample reside in perfect t-units. Deaf Chinese students had higher WER I scores for both genres on average (narrative: $M = .40$, $SD = .24$, min-max = .04-.74; informative: $M = .43$, $SD = .26$, min-max = .06-.95) than deaf

American students (narrative: $M = .26$, $SD = .23$, min-max = 0-.86; informative: $M = .20$, $SD = .23$, min-max = 0-.64). Significant differences were found between groups for informative writing [$t(19) = 2.2$, $p = .04$] but not for narrative writing [$t(20) = 1.3$, $p = .20$].

WER II

WER II indicates the number of words from perfect and flawed t-units in a sample compared to the total words. Deaf American students' WER II scores (narrative: $M = .64$, $SD = .26$, min-max = .16-.96; informative: $M = .68$, $SD = .24$, min-max = .22-.94) were slightly higher although within the same range as those of deaf Chinese students (narrative: $M = .58$, $SD = .24$, min-max = .12-.86; informative: $M = .52$, $SD = .25$, min-max = .09-.95) in both genres. The between-group differences were not statistically significant [narrative: $t(20) = -.59$, $p = .56$; informative: $t(19) = -1.46$, $p = .16$].

WER III

WER III reflects how many words are in perfect and flawed t-units as well as perfect word strings compared to the total sample words. Deaf Chinese and American students did not differ significantly for either narrative writing [$t(20) = 1.32$, $p = .20$] or informative writing [$t(19) = -.59$, $p = .56$]. Chinese students' average WER III scores (narrative: $M = .87$, $SD = .11$; informative, min-max = .61-1: $M = .78$, $SD = .17$, min-max = .41-1) were similar to those of American students (narrative: $M = .75$, $SD = .22$, min-max = .31-1; informative: $M = .83$, $SD = .17$, min-max = .4-.98).

Discussion

The purpose of this study was twofold: (1) to consider whether the SAWL variables could be applied to Chinese writing and whether adaptations or specialized instructions were necessary, and (2) to pilot the use of the SAWL with carefully matched deaf Chinese and

American students, whereby similarities in outcomes further validated use of the instrument with deaf Chinese writers. Firstly, the researchers determined that six SAWL variables (i.e., total word count; total number of t-units; percentage of complete sentences; and WERs I, II, and III) could be applied to the analysis of Chinese writing. Necessary adaptations included the defining of words and critical structures. SAWL variables the researchers determined could not be applied to Chinese writing included any language complexity variables affected by the presence of dependent clauses because Chinese t-units primarily consist of main clauses without dependent clauses.

In applying the six SAWL variables to analyzing the writing of deaf Chinese and American pairs, outcomes were observed to be highly similar as predicted. Although a small pilot study, the results suggest that the SAWL may be an adequate measure for use with deaf children who write Chinese. On two variables associated with the informative genre, there were statistically significant differences between groups. The discussion that follows provides a deeper examination of the similarities and differences between groups, and offers interpretations and limitations.

Similarities: Language delay in the writing of both populations

The results from the SAWL suggest that deaf Chinese and American students' writing appeared to share many similarities in written language variables, especially for narrative writing. Variables conveying length (i.e., total number of words and t-units), sentence writing (i.e., percentage of complete sentences), and grammatical accuracy (i.e., WERs I–III) were largely comparable across groups. It is worth noting that the results demonstrated students in both groups exhibited written language requiring further development for clear communication; more

than one-third of t-units were missing critical structures (as evidenced by WER II data), indicating the presence of significant language delays in both groups.

The outcomes are consistent with those of prior work in which either Chinese or English deaf students displayed great difficulty with vocabulary or syntax (e.g., Antia et al., 2005; Cui, 2018; Kilpatrick & Wolbers, 2020). As Antia et al. (2005) argued, deaf American students struggled most with contextual language, including measures of vocabulary and syntax compared to contextual conventions (punctuation and spelling) and story construction. When provided with a range of writing skills from generating ideas to organizing one's ideas to punctuating appropriately, Deaf Education teachers score their students lowest on accurate use of grammar and revising their writing (Wolbers et al., 2023). Studies involving deaf Chinese students have unearthed common writing-related characteristics, namely low lexical diversity, short words, and few syntactically complex statements (Cui, 2018; Wang et al., 2018).

The parallel found in deaf Chinese and American students' written language may be attributed to a lack of accessible expressive/receptive language during early childhood development causing significant language delays. Given that early language access and development are essential to later literacy development (Marschark et al., 2002), reading and writing can present as a struggle for deaf students who do not have full access to language—whether Chinese, English, CSL, or ASL (Allen et al., 2014; Newman, 2019; Wang & Andrews, 2017). Furthermore, the convergence of societal beliefs and educational policies regarding deaf students in China and America intrinsically influences the later process of language acquisition (Andrews & Jones, 2021; Hult & Compton, 2012; Reagan, 2020) and contributes to the presence of similar outcomes across both groups.

In addition, similar findings across groups could also be due to both groups of students developing linguistic competence in the signed modality, as suggested in Wolbers et al. (2014). As indicated in the Participants and Settings section, the majority of participants, both from China and America, possessed the ability to use both sign languages and spoken languages. However, few were proficient in each mode of communication due to the insufficient access to the languages. Deaf students who are not fluent in signed or written languages may not yet have the linguistic competence nor the metalinguistic knowledge to distinguish the languages and select language features appropriate to communicative context and audience (Hoffmeister et al., 2022; Wolbers et al., 2014). As a result, deaf students draw on their full linguistic repertoire (including sign language) without discrimination for meaning making purposes. (Wolbers et al., 2023). With Chinese and American sign languages sharing grammatical similarities based on visual and spatial linguistic features (Fischer & Gong, 2011), it is unsurprising that similar writing characteristics present, such as the omission of function words (e.g., “的, 着, 了” in Chinese and articles in English; Wolbers et al., 2012). Hence, without explicit instruction on language use across different communicative contexts, students may not possess sufficient metalinguistic knowledge to avoid grammatical errors in their writing. Additionally, when students have not yet attained fluency in a language, they are able to communicate more of their intended meaning when enacting all of the linguistic resources they have. In summary, there may be similar factors contributing to unique written language outcomes among Chinese and American students, which can be detected and measured by the SAWL instrument.

Differences: Writing-related risk-taking of deaf Chinese and American students

Our findings indicated that between-group differences occurred with the informative genre but not the narrative genre. This outcome is somewhat anticipated with studies

demonstrating that narrative writing is distinct from other genres (Antia et al., 2005). Children intuitively develop a “sense of story” during their preschool years through early experiences with literacy materials (Roth, 2000), and they demonstrate development of narrative structure in signed and spoken languages at early ages (Rathmann et al., 2007). Greater familiarity with this genre can influence students’ ideation, organization, and use of common phrases (e.g., “Once upon a time”). In contrast, students have less experience prior to school with academic language associated with other genres of writing, and such language can be even more of a reach for students experiencing language deprivation (Dostal et al., 2021). Our results, therefore, underscore the importance of examining language use across genres, and having an assessment tool that is sensitive to capturing language differences by genre.

In terms of the informative genre, two differences were found between deaf Chinese and American students’ written language: the percentage of complete sentences and the WER I. The percentage of complete sentences reflects the proportion of sentences containing critical grammatical structures; WER I refers to the total number of words used in perfect t-units versus the total words in the sample (White, 2007). Interestingly, Chinese students outperformed their American counterparts on WER I (43% to 20%) by presenting more than twice as many perfect t-units in informative writing. At the same time, American students outperformed their Chinese peers in the percentage of complete sentences (78% to 52%). The significant group-based differences in sentence accuracy may be explained by students’ willingness to use less familiar linguistic forms. For developing writers, simple sentences are less likely than complex sentences to display errors. Close examination of the writing samples in this study revealed that students who wrote short, simple, and repetitive sentences were more likely to have higher WER I scores. Additionally, students were more apt to make critical grammatical errors when sentences were

longer and more varied, leading to fewer complete sentences overall. This trend among deaf developing writers echoes that uncovered by Koutsoubou (2010), who analyzed a writing sample from a deaf Greek student. Koutsoubou (2010) asserted that even though the student's writing contained all essential information, sentence variety and complexity were limited. Therefore, simple perfect t-units at a higher rate in deaf Chinese samples may explain these students' WER I scores. Meanwhile, the lower percentage of complete sentences in Chinese writing may imply a higher level of errors among the more complex sentences that students attempted.

The repeated use of familiar language forms may be explained by students' willingness to take risks. In our sample, Chinese students seemed to repeat sentence structures with which they were familiar; American students did so less frequently. As Argawati and Suryani (2017) argued, students who took greater risks achieved better writing development than those who took fewer risks. Risk-taking thus helps students improve their writing, since it allows them to explore new and more complex structures in grammar and language and to then receive feedback. Emphasis on academic performance and assessment scores, for example, may hinder students' writing-related risk-taking.

Taken together, the difference in performance of informative writing may be attributed to the differences in writing-related risk-taking of deaf Chinese and American students. Even though we matched the student pairs carefully, we still cannot account for all possible variables that may result in differences. It is worth mentioning that the SAWL captures this difference very acutely, which gives us greater confidence in the instrument.

Limitations and future directions

Despite the informative results, several limitations leave room for future work. First, our use of pre-existing samples represents constraint. Students were assigned writing prompts in the

same genre that featured many similar characteristics; however, the exact topics differed. Second, the study was exploratory and included a small number of students. Larger numbers of students and writing samples should be analyzed in the future. Third, there are gaps in the demographic data collected such as the students' experiences with early intervention programming and the extent to which the participants used and managed their hearing technologies.

This study provides pedagogical and theoretical implications for future research. First, the SAWL can be used to identify deaf Chinese students' writing strengths and needs, similar to its application to deaf American students' writing. Consequently, the implementation of SAWL can aid Chinese educators in accurately identifying "language targets" and documenting measurable progress. Additionally, the SAWL can facilitate direct grammatical comparisons between a child's Chinese language production and the Chinese language found in published textbooks, utilizing the same measurement index. Such direct comparisons have the potential to assist teachers in selecting suitable reading materials for their students, be it at the group or individual level. Second, language delays and accessibility seemed to impact deaf Chinese and American students' writing. Providing deaf students instruction using accessible language (i.e., spoken, written, or sign languages) and providing instruction to promote metalinguistic awareness may contribute to more complex and accurate written expressions, which can be measured in future studies using the SAWL.

Conclusions

The present study was a preliminary investigation regarding the potential of the SAWL for analyzing Chinese writing. It was demonstrated that six variables of the SAWL (i.e., total attempted t-units, total sample words, percentage of complete sentences, WER I, WER II, and WER III) can be utilized to analyze Chinese writing of deaf students. The instrument appears to

identify language development in both populations from nonsensical to word phrases, flawed t-unit and perfect t-unit. Upon comparing deaf Chinese and American students' writing using six variables, no significant differences were found on most variables, with the exception of percentage of complete sentences and WER I in informative writing. The similarity in language delay and differences in risk-taking of deaf Chinese and American students may contribute to the results. This pilot study provides support for the use of six validated SAWL variables as sensitive measures of both written languages.

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Appendix A. Writing prompts given to each group

Chinese Students:

Recount Prompt

Please describe an experience that happened to you. It may be an activity that you participated in, a wonderful show that you watched, an interesting thing that you remembered. It should be a story about your personal experience. Please write your experience down and let me know more about your experience.

Info Report Prompt

There will be a visiting group coming to our school next week. You are expected to be a tour guide. Please write down the important information and facts of our school as much as possible to help the visiting group learn about the school.

American Students:

Recount Prompt

I would like you to write a story about yourself. Everyone has done something special, such as visited a special place or played with special friends. You may think back to something you did this summer, last year, or long ago. For example, you might have gone to the fair, a family reunion or a basketball game. Perhaps you went to a sleepover at a friend's house. This story is about you and your personal experience. It's a true life story about something that has happened to you. It could be about a time when you had an accident, learned something new, or became ill. It should be a story about you that is interesting to other people.

Info Report Prompt

Your class will be visiting a kindergarten class next week to teach them about animals and insects. Choose 2-4 different animals or insects to write about for the kindergartners. You can pick any insects or animals you want—the largest, funniest, most interesting, most colorful, or strongest. Tell the kindergartners all the important information and facts you know about each animal or insect so they can choose one to read more about. Be sure to include information, facts, and details you know that will help the kindergartners learn about the animals or insects.

Appendix B.

Figure B1. SAWL Scoresheet for Chinese writing

[illegible]

[illegible]