

A Study on Deaf and Hard-of-Hearing Students' Khmer Language Writing Performance at Public Schools in Cambodia

Samuth Chea

Graduate School for International Development and Cooperation (IDEC), Hiroshima University, 1-5-1 Kagamiyama, Higashi Hiroshima, 739-8529, Japan, Correspondent's email: samuthchea@yahoo.com

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Abstract

Access to education among the school-age population has yet to improve in Cambodia, especially for students with special needs. Deaf and hard-of-hearing (D/HH) students comprise the largest proportion of students with special needs in inclusive public schools. Khmer language writing has not yet been studied on D/HH students. The current sequential mixed-method research study investigated the Khmer language writing performance by D/HH students in inclusive public schools in Cambodia. Results from the writing test revealed a significant difference between D/HH students ($M = 61.81$) and hearing students ($M = 82.70$), $t(75) = 4.98$, $p < .001$; a difference of 20.89 points on a 125-point test. Approximately 67% of D/HH students performed below average. The students exhibited difficulties in all aspects of Khmer language writing, especially vocabulary and grammar. The teachers did not think D/HH students could have good writing abilities, and they did not do enough to support students' writing performance. Similarly, students reported poor writing abilities. They just performed simple writing tasks and perceived their poor writing to have negatively impacted their studies. Having a good understanding of the learning process, language development and effective teaching strategies are crucial for teachers to enhance the writing abilities of D/HH students. Teachers' perceptions would change with proper training and support from peers and other professionals.

Keywords: D/HH students; Writing performance; Writing instruction; Perceptions; Khmer language writing

1. Introduction

There is a growing trend in education research emphasizing equity and inclusiveness in education. Although access to education has improved for the general school-age population in Cambodia in recent years, it remains underreported for students with special needs, whose school performance is often overlooked by the educational system. In the Cambodian context, students with special needs include individuals with disabilities that require additional support, such as specific learning and teaching methods, in a school setting (MoEYS, 2018e; UNESCO, 2018b). By 2018, the Ministry of Education, Youth and Sport (MoEYS) has taken ownership of education for students with special needs. Currently, there are three available educational systems for students with special needs in Cambodia: special schools, progressive/inclusive schools, and inter-graded classes (MoEYS, 2008, 2018e). Lack of teacher support and training is one of the major challenges to inclusive education in Cambodia, while the curriculum goes without sufficient modifications and accommodations. The negative perceptions toward students with special needs exist even from the teachers and school administrators (Kuroda et al., 2016.; MoEYS, 2018a)

Deaf and hard-of-hearing (D/HH) students comprise the largest proportion of students with special needs in inclusive public schools in Cambodia. Having recently assumed the charge of inclusive education in Cambodia, MoEYS has managed to provide inclusive education for students with special needs only partially due to a lack of resources and proper teacher training. Even though the learning performance of D/HH students is not known to the public, previous research studies, have shown evidence of increased dropout and high illiteracy rates among D/HH children and adults (see, e.g., Kalyanpur, 2011; Harrelson, 2019; UNESCO, 2018a). ...

2. Literature review

Scant literature is available on deaf education in Cambodia. No deaf community was studied, nor was sign language recognized as a common medium of communication by D/HH people in Cambodia through the early 1990s. This comes as no surprise, as this developing nation has gone through decades of chaos with many civil wars and conflicts that have affected millions of people, not just D/HH individuals. Most of the D/HH individuals have been isolated or marginalized in society, causing them to lose their identity and fail to develop their language skills (Melamed, 2005; Harrelson, 2019). The term “D/HH” is used to describe varying levels of deafness that has an impact on individuals’ hearing abilities to have full access to spoken

language (Development Assistance Committee [DAC], 2003). Historically marginalized and socially neglected, deaf people's stories and identities have been brought to the attention of the public mostly through the work of non-governmental organizations (NGOs) raising awareness and conducting fundraising campaigns. For example, deaf people used to be referred to as people "without language" in Cambodia (see Harrelson, 2019). NGOs are crucial partners for post-conflict rehabilitation and nation-building in Cambodia. This is the case for the social and educational development of the D/HH people in Cambodia.

Krousar Thmey (KT) is one of the key NGOs that has made a great effort to integrate education for the special needs of deaf or blind students into Cambodia's formal educational system. Established in 1991 in a refugee camp along the Cambodian-Thai border, KT initially provided education for blind students and later expanded to offer education for D/HH students soon after it was repatriated into Cambodia in 1996. KT operated five special schools for D/HH students throughout Cambodia and supported many other segregated classes until 2017 when MoEYS took full responsibility for the education of students with special needs. By 2017, there were 514 D/HH students enrolled in KT's special schools, which included 66 specialized teachers. Additionally, there were 77 D/HH students attending public integrated classes with the support of KT (Hayes & Bulat, 2018; MoEYS, 2017, 2018b). The curriculum for these schools is the same as that of general public schools, with only a few modifications to cater to the students' special needs for sign language translation of some school textbooks, conducted by a special sign language committee. In the absence of a common formal national sign language, KT introduced American Sign Language (ASL) in 1997 for visual-based instruction in special schools, while working toward developing Khmer-based signs in the long term (Hayes & Bulat, 2018). KT released its first version of Khmer Sign Language (KSL) in 2008 and was later renamed Cambodian Sign Language (CSL).

The Deaf Development Program (DDP) is another key NGO operating in Cambodia that provides basic non-formal education to D/HH individuals aged 16 and older. Initially, the DDP was a project of Maryknoll Cambodia, a US-based Catholic organization working in 35 countries (Harrelson, 2019; Hayes & Bulat, 2018). The first year of basic education (though not referred to as basic education by MoEYS) of the two-year program is mainly for teaching and learning CSL, while the second year is for basic literacy classes. In 2017, 67 students were enrolled in the DDP's segregated classes attached to public schools in three locations in Cambodia. Additionally, the DDP provides free sign language lessons to parents within the community.

Language plays an important role in mediating learning both inside and outside school. Hence, having a completely developed first language is a predictor of successful schooling experiences. This is also the case for D/HH children who have a firm foundation in ASL. For example, their literacy development is comparable to that of their peers. Humans use language as a means to experience the surrounding world, which leads to personal development (Easterbrooks, 2011; Luckner et al., 2012; Mayberry & Lock, 2003). Understanding language development is a foundation for teaching D/HH students. The normal development of language, for D/HH, and hearing children, is centered around early language fluency (in both home and classroom settings), supported by social and cognitive development and further language development. While it has been suggested that D/HH children with deaf parents have the same milestones of language development order and rate as hearing children, less exposure to fluent language means fewer opportunities for incidental language learning, which plays a major role in language acquisition. This development is simplified with language acquisition in the critical period hypothesis (Briggle, 2005; Emmorey, 2002; Marschark & Hauser, 2012). Studies on deafness have also revealed that D/HH children learn about writing before formal instruction. The term “emergence literacy” refers to both reading and writing development that enables preschool and kindergarten D/HH students to understand written language even before the acquisition of conventional writing. Children with hearing disabilities develop their (sign) language in a manner similar to that of hearing children developing their (spoken) language within language-rich settings (Teal & Sulzby, 1986, as cited in Briggle, 2005; Lederberg et al., 2013; Marschark & Spencer, 2003).

With the absence or lack of spoken language, written language is the most reliable means of communication between D/HH and hearing people. Many studies have found that D/HH students experience difficulty in written language, and that their writing is relatively poor, compared with that of their peers (Kluwin & Kelly, 1990; Knoors & Marschark, 2014; Marschark & Hauser, 2012; Morere & Allen, 2012; Traxler, 2000). The writing of D/HH students differs from that of their hearing peers in many respects. D/HH students have problems with written expressions and develop weaknesses in syntax and vocabulary. They produce inaccurate sentence structures, incorrect verb tenses, incorrect plural forms, and incorrect pronouns. Relatively short and simple sentences are common among D/HH students (Antia, 2005). This involves the reciprocal process of possessing and expressing knowledge (Moore & Martin, 2006). Having knowledge or being able to solve problems in mathematics, for instance, is not sufficient; they should be able to explain the process of solving these problems

to reflect their knowledge and thoughts. Writing has become even more important in our technology-driven era, in which D/HH learners can enjoy more extensive access to knowledge and establish points of convergence with the hearing world in terms of communication (Mayer, 2016).

Writing is generally considered a learned process. This happens in a formal and structured manner that can only be explained through cognitive and social process theories. Working memory, for instance, is widely studied and is proven to be a cognitive process essential for writing (Flower & Hayes, 1981). This has implications for effective classroom practice in process writing. Understanding writing can also be perceived from the socio-environmental factors that define the meaning of our activities (Hayes, 2006).

On the one hand, there has been a call for a process approach to writing from many researchers, while the practice of writing instructions varies widely worldwide. On the other hand, there are still common practices in writing assessment, namely direct assessment methods that focus more on language properties (Luckner & Isaacson, 1990). Writing lays the foundations for oral language use and strengthens language structure with grammar and vocabulary (Weigle, 2002). For example, Graham and Rijlaarsdam(2016) found that teachers' beliefs and practices in writing education played an important role in promoting effective writing education.

Most of the existing studies on the writing ability of D/HH students have been conducted in developed countries with a long history of inclusive education and practices and that have English as their main language (see, e.g., Antia, 2005; Reed et al., 2008; Traxler, 2000). The overall writing ability of D/HH students in inclusive public schools is relatively low, with limited vocabulary size and common syntax and composition errors. Cambodia is no exception. Thus, a study of Cambodian D/HH students' writing ability in the Khmer language is warranted. Students' underperformance in the Khmer language, especially in writing, has been a lingering concern for the quality of learning and teaching. However, there are few studies on this issue (e.g., ...), which justifies the need for the present study. Existing theories and studies have suggested common characteristics of language acquisition and literacy processes in D/HH and hearing students. Hence, studying the writing skills of D/HH students will support all students in inclusive classrooms.

Academically, Khmer language classes serve as the main medium of instruction in reading and writing, enabling students to study other school subjects. In light of the national

core curriculum framework, MoEYS also states some of the expected learning outcomes for the Khmer language subject for the primary education level. From the early grades of primary education, students are expected to manage their writing movements with clear calligraphy. Gradually, they develop their basic knowledge of lexical convention and abilities to form letters or characters and write words and phrases. By the end of the primary education level, students will be able to produce short and simple paragraphs to describe things and events in their daily lives. They will also be able to use their writing abilities to learn other things. They can use writing to take notes in class, pose questions, give presentations, and solve problems (MoEYS, 2016, 2018a).

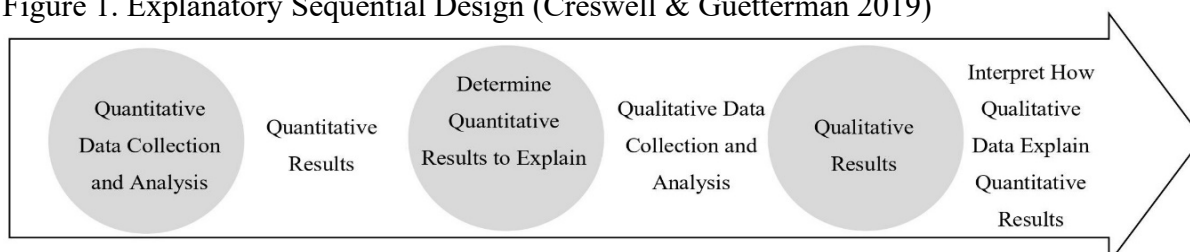
The purpose of the current study was to examine the Khmer language writing performance of D/HH students from inclusive public schools in Cambodia. To achieve this purpose, an explanatory sequential mixed-method design was conducted to answer the following three research questions:

1. How do D/HH students perform in Khmer language writing?
2. How do D/HH students perceive their Khmer language writing performance?
3. How do students' perceptions of their Khmer language writing performance differ from their teachers' perceptions of their performance?

3. Methodology

The purpose of this study is to examine how D/HH students from inclusive public schools in Cambodia perform in Khmer language writing. To achieve this purpose, this study employed an explanatory sequential mixed-method design. Figure 1 illustrates the explanatory sequential mixed-method design. First, it collected quantitative data; second, it gathered qualitative data to explain the quantitative results (Creswell & Guetterman, 2019; Gay et al., 2009). Quantitative data was obtained from the Khmer language writing test performance as well as from a survey questionnaire for teachers. Qualitative semi-structured interview data from a smaller sample of teachers and students were used to contextualize and explain students' Khmer language writing performance.

Figure 1. Explanatory Sequential Design (Creswell & Guetterman 2019)



3.1 Research sites and participants

Based on the school profiles provided by MoEYS, a dozen inclusive public schools were attended by students with special education needs across the country. However, only four schools reported that their special education required services for D/HH students. Therefore, four inclusive public schools from four different provinces in Cambodia were purposively selected.

In the Khmer language test, the participants were 76 sixth grade students from four inclusive public schools (37 D/HH students). The demographic information of the students is shown in Table 1. While the sample of D/HH student participants was small and was purposively selected, hearing participants were randomly selected using the student lists provided by the school administrators to ensure equal group sample sizes.

3.2 Instruments

3.2.1 The Khmer language writing test

The Khmer language writing achievement test was developed by the author, based on the objectives and expected learning outcomes illustrated in the detailed national curriculum of the Khmer language for sixth-grade students. The benchmark goal for sixth-grade students is to complete writing performance tasks that cover vocabulary building, simple sentence construction, and short paragraph writing. Students are also expected to use their knowledge and skills in writing for their studies and real-life communicative purposes, such as completing application forms, describing events, expressing themselves, taking notes, and writing letters (MoEYS, 2018c).

The Khmer language writing test is a 125-point test comprising three main sections: lexical content of vocabulary and spelling, syntactic content of grammar and sentence construction, and compositions. In addition to writing compositions, multiple-choice questions were designed to increase the accuracy of the test (Brown, 2003). The content was revised three times and evaluated by three experts in Khmer language, deaf education, and in teaching D/HH students. Content scoring was used to ensure scoring consistency for the subjective sections of the writing test.

3.2.2 Teacher survey

The researcher decided to develop and use a survey questionnaire for teachers. This decision was made because surveys and interviews are common tools used in mixed-methods studies, especially in educational research on perceptions and assessment. Additionally, teachers are well-suited to judge whether learning is taking place, given their privileged role in the class (see Harris & Brown, 2010.; Knoors & Marschark, 2014). Thus, a survey questionnaire was used to collect data from special and inclusive public education teachers. The questionnaire was aimed to gather data regarding teachers' overall perceptions of D/HH students' writing ability and classroom writing instruction practices. The questionnaire was divided into two parts. The first part collected participants' demographic information. The second part comprised 24 items adapted from previous studies on teachers' perceptions of the ability of the D/HH students and teachers' classroom writing instruction practices (Ferede et al., 2012; Olufemi & Emmanuel, 2015). The researcher adapted the questionnaire based on the literature review and the context of teaching writing in Cambodia. All items were scored on a 5-point Likert scale; they were used to examine teachers' perceptions and classroom practices. The reliability of the questionnaire was checked for internal consistency for each subscale in a pilot study.

3.2.3 Student interviews

Semi-structured interviews, which lasted 10–13 minutes, included various questions and prompted D/HH students to describe their perceptions regarding their Khmer language writing performance. The key features of the questions were challenges, practices, and support received from their teachers. Since the communication was via sign language and this is beyond the researcher's ability and to avoid bias in the interpretation, two experienced sign language teachers from different classes were asked to assist the researcher in the communication and interpretation. One teacher acted as a sign interpreter and the other as an observer.

3.2.4 Teacher interviews

Additionally, semi-structured interviews were conducted to collect teachers' data. A semi-structured interview protocol was developed based on both empirical and theoretical grounds regarding classroom practices in the subject matter: the preliminary results from the students' Khmer language writing test and the review of concepts related to effective teaching practices in inclusive classrooms, teacher self-efficacy, and evidence-based writing instruction strategies discussed in the literature. The interviews lasted for 15–20 minutes.

3.3 Validity and reliability

The validity of a research instrument is defined in terms of its appropriateness, correctness, meaningfulness, and usefulness (Fraenkel et al., 2012). The Khmer language writing test's content and construct validity have been assessed based on the guidelines for developing standardized tests for student learning assessment purposes, especially for Khmer language learning assessment. The national subject curriculum provides the overall content and test items. Feedback and suggestions from Khmer language teachers, inclusive teachers, and special education teachers guided the test development process. The results of the students' performance were analyzed (based on the concept of IF) to represent the percentage of items that were correctly answered by the students (Brown, 2003), while the concept of internal consistency reliability of the test items was represented by Cronbach's alpha. Internal consistency reliability values are acceptable when Cronbach's alpha is greater than 0.60 (Creswell & Guetterman, 2019; Morgan et al., 2011). The item difficulty values for the test were between 0.18 and 1.0. Brown (2003) defined appropriate test items as having an IF between 0.15 and 0.85. Regarding students' responses for objective multiple-choice test items and guided response items, the Cronbach's alpha was 0.67, indicating moderate reliability.

3.4 Data analysis

Before starting the data analysis, data cleaning was performed to identify any missing or invalid data. Numerical and categorical quantitative data obtained from the Khmer language writing test were analyzed descriptively. Descriptive data analysis produces summary data for interpretation based on these variables, while descriptive statistics reveal overall trends or tendencies in the data to obtain an understanding of how varied the scores are and how they compare to one another (Creswell & Guetterman, 2019).

In this study, students' writing performance was scored by three sixth-grade teachers from different public schools, using an adapted rubric (which they were previously taught how to use) for the composition writing section. Next, the results of the quantitative data were analyzed using SPSS software. Descriptive statistics were used to reveal the frequency and central tendency of the data. Additionally, an independent sample t-test (a commonly used statistical analysis tool) was used to compare the mean scores of the students from the two main groups (Morgan et al., 2011) as well as to compare the mean scores found in the teachers' survey.

Data obtained from the semi-structured interviews with the teachers and students were transcribed into themes and categories based on the analysis of the qualitative data. The qualitative data were first organized and prepared with transcriptions; subsequently, they were sorted into different types based on their sources. The researcher then read all the findings and manually coded them to generate themes for final interpretation (Creswell & Guetterman, 2019). The data were analyzed using a phenomenological approach, which allowed the researcher to gain insight into the perceptions, understanding, and feelings of people who have already experienced or lived in a particular phenomenon (Creswell & Creswell, 2018). Qualitative data were used to triangulate and contextualize the status of the D/HH students' writing performance.

4. Results and findings

1. How do D/HH students perform in their Khmer language writing?

With the results from students' Khmer language writing tests, an independent sample t-test was used and revealed a significant difference between D/HH students ($M = 61.81$) and hearing students ($M = 82.70$), $t(75) = 4.98$, $p < .001$; indicating a difference of 20.89 points on a 125-point test. Approximately 67% of D/HH students performed below average on the Khmer language writing test.

D/HH students exhibited difficulties in all aspects of the Khmer writing test, including vocabulary limitations, especially for abstract words and words with multiple meanings. In Vocabulary 7 ($p < .001$), for example, the means of the two groups indicates that the average score of D/HH students ($M = 6.16$) is lower than the score ($M = 8.82$) of hearing students. The difference between the means was 2.66 on a 10-point test. The effect size d of 0.78 is typically large (Cohen, 1988).

Additionally, the students did not know how to properly use sentence connectors to make their writing more cohesive. In Grammar 3, D/HH students did not perform well in an application-level task when they were asked to rewrite sentences by placing words in the correct grammatical order. The mean score ($M = 4.46$) of D/HH students was significantly lower than that of hearing students ($M = 8.23$). The difference between the means was 3.77 on a 10-point test. The effect size d of 1.09 was very large (Cohen, 1988).

2. How do the D/HH students perceive their Khmer language writing performance?

As described in the previous part on the student interviews, the main themes go around the challenges that the D/HH students are having in their studies, especially regarding the Khmer language writing, their teacher's instructions and supports, and perceptions of the communication with hearing peers and people at school.

Students reported that they did not have good enough writing abilities. They just managed to pass the exams. The public-school teachers did not know sign language, and the students often did not understand the writing instructions by the teachers. The D/HH students just performed simple writing tasks, and they needed good writing to communicate with the teachers and their hearing friends. They did not have enough support in the classroom, and they reported toughness in the classroom. The students reported that they did not have good vocabulary knowledge, either in signs or written forms, and in meanings. They also thought that they did not have a good memory.

Additionally, D/HH students experienced academic struggles in inclusive public schools. They had to deal with language and communication barriers. They felt the needs for writing in most lessons of different school subjects. They did not have as good vocabulary knowledge as that of their hearing peers and found it difficult to communicate with their teachers, even in writing. They were unable to understand teachers' writing or that of their hearing friends, while they reported that they did not have enough support in the classroom. Even in special schools, most lessons involved reviewing lessons or working on tasks assigned by inclusive public-school teachers. However, the students had a good perception of inclusive public schools. The following quotes illustrate this point:

...my writing is mainly about copying the lessons to my notebooks, from the board, textbooks, or even from my friends' notebooks, writing in by copying lessons from my friends. I can write some sentences on my own. I can do little. I can do little paragraph writing; my friends sometimes help me to write.... writing/copying lessons to the notebooks is fine. Performing other writing tasks is hard... (Student 2)

...my studies go with many challenges at the inclusive public school. I get nothing listening to the teachers. The teachers do not use signs. This makes it hard for me to learn the lessons, such as science lessons. I can't discuss the lessons with other students or ask them questions from the lessons... (Student 1).

...at the inclusive public school, I find it difficult. Math is difficult. I can hear very little. Khmer language is difficult; I can do little. For other subjects, my hearing friends help me to answer the questions... it is difficult to do exercises, to answer the questions. I can do little reading and little for writing... I use writing to communicate with the teachers. The teachers can understand some.... hearing friends help me, but very little. The teachers write a lot. For other subjects, the teachers talk a lot. I can't write fast enough to copy the lessons to the books... I work in groups... I help friends work on questions. My friends like me. I am pleased. (Student 6)

3. How different are the students' perceptions from the teachers' perceptions regarding the students' Khmer language writing performance?

The teachers thought that the D/HH students did not have good writing abilities. The teachers did not use enough strategies to support the students' writing performance, although the teachers could talk about the difficulties the students have in their writing. The students' poor writing ability has also impacted their studies of other subjects. The teachers reported that the D/HH students could not perform well in math tasks of problem-solving that require their explanation of language writing. Social studies were also challenging. Special schoolteachers seemed to use fewer variable strategies, as they did not think about the students' differences. Both special and inclusive teachers did believe that bilingualism was important for D/HH students. These findings revealed that students' perceptions were on par with the teachers' perceptions of the writing performance of their D/HH students. The teachers held a negative perception of the students' writing performance. Although the teachers were able to identify difficulties in teaching writing to D/HH students, as well as the difficulties the students faced in their writing, the teachers did not do enough to support students' learning. The teachers used no specific teaching strategies to cater to their students' different needs. Surprisingly, special teachers did not think there were differences between D/HH students. They reported using few strategies in teaching students' writing (Teachers 3, 5, and 7).

...I do not know sign language. I just use writing to communicate with deaf and hard-of-hearing students and to tell them what they are expected to do. Often, they are unable to understand the writing. They usually perform writing tasks to find spelling and correct mistakes from an extract. (Teacher 1)

...writing starts with vocabulary. Thus, having good knowledge of vocabulary, a good understanding of a particular topic, and sufficient information input are important aspects of writing. We do not really do that; we often have to rush to reach the tightly scheduled syllabus' goals. In the Khmer language subject, for example, there are many skills that students must work on—grammar, listening, writing, among others.

(Teacher 2)

...Personally, I think deaf and hard-of-hearing students attend inclusive public schools merely for social integration purposes; they learn better from special education schools. (Teacher 3)

5. Discussion

D/HH students did not perform well in Khmer language writing. Only 33% (compared to 90% of hearing students) exhibited average or above performance in Khmer language writing. This finding corroborates with Antia et al. (2005) who found that the writing scores of D/HH students were lower than those of their hearing counterparts. D/HH students' poor writing performance has also been reported in previous research (Geers, 2003; Malik, 2019; Marschark et al., 2002; Schirmer & McGough, 2005; Traxler, 2000). Students reported being unable to understand the teachers' written instructions.

Composition writing samples from D/HH students provided further evidence of writing performance beyond the lexical level, namely the syntactic level. D/HH students produced relatively short and simple sentences, which frequently contained syntactical errors. Additionally, they rarely used sentence connectors in their writing. Concerning this problem, Easterbrooks and Beal-Alvarez (2013) argued that there are wide gaps between functional and lexical vocabulary knowledge among hearing-impaired and hard-of-hearing learners. Additionally, Albertini and Schley (2011) analyzed D/HH students' writing, confirming that these students wrote shorter structures, compared with hearing students, and adding that they had a tendency to repeat words and phrases. A similar argument on low academic status of D/HH students in public schools in Cambodia is also supported by previous studies such as Long et al. (1991) and Reed et al. (2008).

5.1 Conclusion

The main objective of this study was to examine how deaf and hard-of-hearing students in inclusive public schools in Cambodia performed in Khmer language writing. The data revealed that 37 sixth-grade D/HH students from four inclusive public schools in Cambodia did not perform well in the Khmer language writing test. The writing performance of most D/HH students in inclusive public schools was below average. The students did not have sufficient vocabulary knowledge, while their sentence structures were relatively short, characterized by incoherent sentences using a few linguistic devices. Consequently, the students did not perform well in paragraph writing. They felt the need for writing in most lessons of different school subjects. While students have voiced their negative perceptions towards their writing performance, the teachers also expressed negative perceptions of the students' writing performance. Although the teachers were able to identify difficulties in teaching writing to D/HH students, as well as the difficulties the students faced in their writing; the teachers did not do enough to support students' learning.

Overall, the academic status of D/HH students attending inclusive public schools in the study was relatively low given their performance in the inclusive public schools, unless special references of assessment were considered for students with special needs. This has been perceived by the immediate stakeholders, such as teachers and students whose roles are directly involved in teaching and learning, that D/HH students were only average learners.

5.2 Limitations

This study has some limitations. First, the study explored how D/HH students performed in their Khmer language writing. However, it is possible that the results were affected by factors other than student's actual ability. While most of the students' demographic information was not accessible to outsiders, the demographics may have influenced the results. Second, the research was only conducted in four inclusive public schools in Cambodia; therefore, the results do not represent the population of D/HH students from other areas of Cambodia. Finally, students' writing performance could be affected by the level of difficulty of the test itself.

A more reliable research study on the writing abilities of D/HH students should be conducted by looking at other related data that can increase the validity and reliability of the results. Classroom observations may also provide better information and insight into students' performance. Students' portfolios should also be studied in future studies. Although this study

provides answers to the research questions, further research should be conducted in collaboration with classroom teachers to make the information more comprehensible.

5.3 Implications

Even though the study results were limited to some of the inclusive public schools in Cambodia, it is a good reflection of the classroom practices. Having good writing abilities is important for the whole population of students. teachers should have more training on teaching writing. Understanding the learning process and how language development either for hearing or D/HH learners works are crucial for effective teaching and learning adaptation, given the theoretical and practical implications in the context of inclusive settings in Cambodia. Teacher education institutions should, therefore, do more to offer students teachers with better preparation for inclusive classroom practices. Teachers will have a positive perception if they are well trained and enjoy support from peers and other professionals.

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