

## The Factors Influencing the Achievement of Hearing Impaired Students in Thailand

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**Abstract:** Hearing disabilities may be significantly limited in their ability to recognize and process information, especially the types of information as it is currently presented in basic educational curriculums in Thailand. They may be slower than normal children in acquiring the knowledge and skills they are expected to learn from the core curriculum of basic education. Hearing impaired children are dependent on specific factors in their environment for successful learning and individual development yourself to reach the same level of achievement as normal children. To identify these factors and propose, a method for teaching the hearing impaired which recognizes these factors and is adapted for the specific learning requirements of the hearing impaired is the purpose of this research. Educational elements and other conditions which affect the achievement of hearing impaired children were studied in a population of students who have defective hearing at the School for the Deaf in Bangkok and its vicinity. A sample of 195 students from grade levels 1-6 was selected. Research approaches included data collection using questionnaires, forms, interviews as well as discussion groups and workshops that included a sign language interpreter. These techniques were used to elucidate and assist in analyzing the collected data related to the factors influencing the learning achievement of the hearing impaired students. The resulting analysis revealed that the main elements that affect the achievement of the hearing could be divided into four categories, namely: characteristics of the teacher, learning environment, quality of family life and educational support.

**Key words:** Hearing impaired, educational method, learning achievement, social environment, family support, Thailand

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### INTRODUCTION

People who are normal persons and those with disabilities are both valuable resources for any country's society and culture. Thailand's Hearing Impaired (HI) children, the same as normal children have the potential for development in all aspects of human virtues and competencies and can be a significant asset to the country (Chaisanit and Suksakulchai, 2011). Education is a means that enables human beings to develop their individual abilities and improve their quality of life so that they can live happily in their culture and participate in their society as they contribute to the overall welfare of the nation. In this way, education also supports the necessary economic and social development of a nation and helps it be progressive and effectively adapt to internal as well global changes that can affect all areas of the country (Anderman and Midgley, 2004). A good education for a country's citizens should be consistent with global and national standards. It should include

advancements in all areas of human endeavor; social, political, economic, cultural and technological (Kaewdeang, 2000). A competent educational process will also need to cultivate the students' learning skills. It will emphasize independent, creative thinking and additionally, a paradigm of collaborative and cooperative, mutual learning and interchange of ideas (Samphan and Suksakulchai, 2007).

At present, Thailand has recognized the importance of developing the abilities and intelligence of those with disabilities. In particular, the nation wants to provide the right to equal educational opportunities to disabled individuals. However, HI persons are a group that is particularly disadvantaged in obtaining education and information in general because of the unique limiting aspects of their disability. The definition of HI in children under 7 years old is a hearing loss at frequencies of 500, 1000 or 2000 Hz of up to 40 decibels or more with the result that human speech is not perceived correctly or not heard at all. Children who are HI cannot use spoken

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language to communicate with others effectively. Students who are severely impaired in their hearing perception cannot be educated or study like normal people and consequently, they have lost an important component of human communication, language and culture.

Children learn much of their knowledge by listening as people speak and read aloud to them. HI children need to learn in a similar way but using an alternative process to hearing in acquiring information. A form of teaching and learning that is successful for the deaf and HI needs to change the information pathway from auditory to visual to communicate information to the brain of the HI child learner. In the same way, we need to change the language from the spoken word and related printed form which is also difficult for the HI to comprehend as the written words are representative of the speech sounds. HI persons are always using symbolic language (sign language) and also reading body language to perceive emotions. Because they are always reading rather than speaking and listening their language development (inner language) is limited as well as communication within the brain (internal communication). They never develop the ability to perceive and communicate abstract concepts. This deficiency severely handicaps their facility for imaginative, conceptual and logical thinking and even affects their memory, especially their capacity to retain information. HI students' intellectual deficits are not easily recognized but are significant and substantially impact their quality of life (Full gaze of the University of York, 2545) (Bat-Chava and Martin, 2002).

Teaching and learning occurs in complex ecosystems, dynamic environments where teachers, students, materials and supplies, texts, technologies, concepts, social structures and architectures are interdependently related and interactive. Using the learning record, the teacher (and the student) is actively searching for and documenting positive evidence of student development across five dimensions, confidence and independence, knowledge and understanding, skills and strategies, use of prior and emerging experience and critical reflection. The dimensions of learning model is comprehensive and uses accepted facts about learning from researchers and theorists who are experts in this area to define the learning process. Its premise is that five types of thinking what we call the five dimensions of learning are essential to successful learning. The dimensions framework will help you to maintain a focus on learning; study the learning process, plan the curriculum and instruction, perform an assessment that takes into account the five critical aspects of learning (Marzano *et al.*, 1997). Currently, there exist many tools and methods that aid in teaching and

assist learning for the HI hearing but these are far from sufficient to fulfill the need for an effective education that truly enables the HI child to live normally in society, enjoy the full range of human experience and have the opportunities for personal development that normal people have. A key step forward in solving these problems for the HI and improving their quality of life is a change in educational approach for teaching HI students. These students have a right to learn the same knowledge as normal students.

An approach that has this as a goal combined with an understanding of the factors and conditions that affect HI learner and that will be adapted to the special requirements of the HI learners will result in an equivalent but more effective for HI curriculum. This curriculum will be similar in content to that which is in use today for teaching normal students, the current problem is that using materials and methods for normal people to teach the HI students has resulted in much lower than normal achievement of HI students and has also caused problems with learning (Iam-Khong *et al.*, 2011). Therefore to understand and recognize the various factors involved in the teaching of the hearing is of major importance. It is critical for a successful outcome of HI achievement and learning that educators recognize and adapt their materials and methods to the main factors that directly affect the HI students, the complete educational environment including the teachers' and social factors such as family, friends, peer group, etc. All of these factors affect people with disabilities more than they affect normal students.

Creating an effective HI curriculum is an important achievement and necessary for the effective management of schools that include HI students especially, educational programs that currently do not take into account these factors as they should. Students who have a hearing impairment have learning deficits that lead to lower achievement than normal students have (Iam-Khong *et al.*, 2011). That is caused by not recognizing and compensating for the factors influencing their learning and achievement. It is of utmost urgency to find a solution for this situation. Therefore, this research has focused on identifying and mitigating these factors that affect the learning achievement of the HI students. Additionally, researchers have discussed an educational method and learning conditions that suits the particular needs of the HI student. This method has taken into account the social and family factors that are meaningful components of the HI student's learning environment. This study and model for teaching the HI students provides an opportunity to understand the various factors affecting HI learning achievement and the principals can be applied in various learning

environments. This will affect positively the learning of the HI and could lead to a more effective and efficient educational process for a generation of HI students and result in more social equality as they benefit from their social learning experiences.

## MATERIALS AND METHODS

This research is a population-based study of hearing students who are studying in the school for the deaf in Bangkok and its vicinity. The sample used in the study was a population of hearing impaired students from three schools:

- Setsatian School for the Deaf
- Thungmahamek School for the Deaf
- Nontaburi School for the Deaf

The study was performed by selecting a random sample of 195 students aged 8-13 years who were currently enrolled in grade levels 1-6 for the 2nd semester of the 2010 academic year. Data was obtained for use in this study via questionnaire. The research was to identify and characterize all of the major factors that affect the individual learning achievement of individual HI students as follows to study the role of everyone involved with the students; namely, the roles and interactions of the teachers, advisors, mentors, parents, family members, interpreters and the note-taker (a person who assists the HI students to take notes during classes in Thailand). The information gathered from the study was acquired from five different sources queried at three different phases:

- A general information check list
- A Riker 5 level rating scale measuring the components that affect HI learning achievement
- A questionnaire to evaluate the classroom lecture method

Data collection questionnaire the student sample group is prepared before the class via the assistance of a sign language interpreter to explain the objectives of the project in which they will participate. The sign language interpreter describes the questions to the students and gives them a sign language signal when they should answer the questions. During the course of this study, the researchers are accompanied in their activities by observers who closely monitor the interaction between the researcher and the student subjects. The researcher was required to provide special equipment and materials as follows.

- A room for the project activities large enough for the students to walk around and not feel confined or uncomfortable
- A bell designed for HI to signal the beginning and end of some activity. The vibration of the bell is a frequency that be perceived by HI
- A disclosure is made to the student subjects to clarify the project and the requirements to fulfill the standards of the Commission on Human Rights

This is presented in writing to the HI student sample informing them about the results of this questionnaire they are answering and how the data will be used as well as any affects or consequences to them if the respondents do or do not answer the questions. Additionally, the respondents are free to stop and walk out of the room at any time if they do not want to participate.

**The wheel of learning (FESS wheel):** The researchers have developed a model of for effective teaching and learning conditions for the HI student by studying teaching methods and the learning process of HI students. This study also examined the interaction with the HI students of those involved in teaching or supporting the learning of the HI students including teachers, advisors, mentors, sign language interpreters and note-takers (to assist HI to take notes). Diligent analysis was performed to elucidate the factors associated with HI learning achievement.

The researcher's additionally created a 52 item questionnaire to identify the factors affecting HI learning achievement. The results were analyzed using the SPSS statistical software to perform factor analysis to determine the significant influences that affect HI student achievement. Four major factors were isolated as meaningful for HI students:

- Characteristics of the teacher and teaching methods
- The student's family environment
- The characteristics of the individual student
- Social influences (peers, classmates, etc.)

These factors are shown in Fig. 1. These factors identified and categorized statistically were visualized as a graphical model in cooperating refinements from analysis by five experts in the field of HI learning as shown in Fig. 1. In Fig. 1, the FESS Wheel System Model shows the major factors that affect the academic achievement of HI students divided into four categories: the teacher's characteristics including their techniques

and teaching methods, evaluation and quality of guidance. Included as well in this factor are the features of the learning environment and the teacher's ability to control the classroom and to communicate with the students, the student's family relationships and educational level of the family members along with the degree of emotional support, closeness, nurturing, positive role models and family encouragement and

approval for learning achievement and rewards for good performance in education. The individual student's personality traits, abilities and motivation and educational experiences including such characteristics as a positive attitude toward learning, diligence in doing assigned work, behavior in the class, coming to class prepared, along with the student's acquired and innate learning skills and strategies the social elements that affect the student including internal and external components such as the student's ability to build relationships and friendships, involvement with classmates and the others, acceptance by peers and friends, support of close friends, peers' educational achievement, the amount of assistance and advice from the student's friends will all contribute to the student's positive educational development.

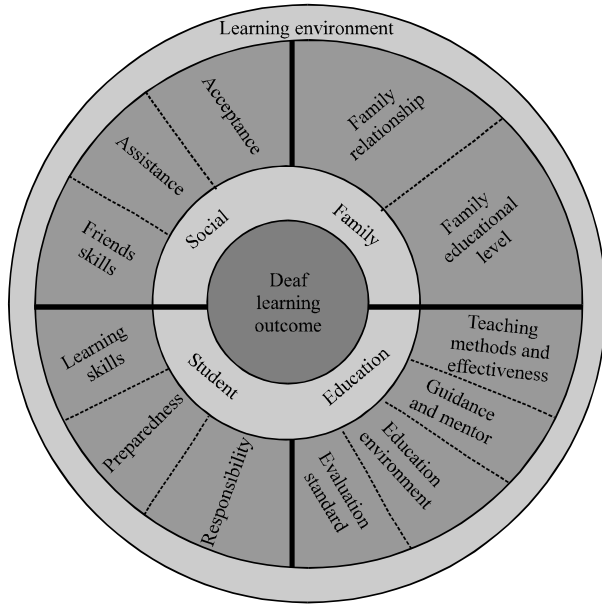


Fig. 1: Fess Wheel System Model

**RESULTS**

In the research of the factors that affect HI learning achievement 195 HI students completed a 52 item questionnaire. Researchers further analyzed the survey questions and removed those questions that had limited relevance or no correlation or were weakly related statistically as established by the factor analysis. The remaining 45 items were organized into 4 groups as shown in Table 1-4.

Table 1-4 show a subset of the data that focused on the teacher/teaching sub-factors. There were 13 items in the questionnaire related to this category. For these 13 items, the factor loading is between 0.738-0.919.

Table 1: FESS Wheel Model sub-factor table related to Teacher/Teaching Method factor

Items	Variables	Factors
51	The teacher has a method of teaching that makes students want to learn	0.919
41	The teacher is accessible to the students after class	0.918
48	The teacher has a friendly demeanor	0.907
50	The teacher gives the students opportunity to ask questions in class and outside the classroom	0.902
42	The teacher reviews the students' homework	0.902
49	The teacher clearly explains the answers to any questions	0.901
52	Teachers use modern teaching materials such as media, the Internet and Facebook	0.900
45	The teacher tracks the students' learning achievement	0.895
43	The teacher has the knowledge and experience to give good advice	0.894
46	The teacher reviews the lessons with students	0.888
47	The teacher has strict control of the class and is rigorous in teaching	0.878
44	The teacher is punctual and begins and ends the class on schedule	0.874
40	The teacher is thoroughly prepared for each class	0.738

Table 2: The FESS Wheel Model sub-factors related to the family factor

Items	Variables	Factors
38	The family/parents recognize and commend the student's accomplishments in learning	0.917
39	The family/parents and the student have a loving relationship	0.908
35	The family/parents support the student emotionally	0.894
37	The family/parents provide guidance about learning and education	0.876
32	The family/parents support and encourages the student to study and learn	0.863
33	The students are happy in their relationship with their family/parents	0.850
34	The students feel close to their family/parents	0.848
30	The family/parents assist the student with their homework	0.839
36	The family/parents are interested in and care about the student's education	0.826
31	The family/parents provide positive advice and guidance about learning and education	0.816
28	The family/parents have education and ability to help and encourage the student to learn	0.592

In Table 1, the focus is on the FESS Wheel Model factor for the Teachers/Teaching Method and encompasses of all there major elements that affect HI academic achievement. The sub-factors observed to be most important are those that are related to teaching method.

Accessibility of the teacher (office hours being available to the students); friendly demeanor in class, provide opportunities to answer questions in and out of classroom; collecting and evaluating student’s homework; ability to explain a subject clearly; use of current learning media; following and measuring the learning progress of the students; ability, knowledge to provide effective and appropriate advice, reviewing the lessons with students; diligence in training the students and strict control in class and punctuality thorough class preparation.

Table 2 shows a subset of the data that focussed on the family influences that affect the student’s learning achievement, there were 11 items in the questionnaire related to this category. For these 11 items the factor loading is between 0.592-0.917. In Table 2, FESS Wheel Model for a family shows that all the elements that affect academic achievement.

Elements that is most important to recognize their good deeds. The love and the thousands of families. Elements are very important to take care of distress, the joy of the family.

Providing guidance on how to learn. Families to support learning in the higher levels. Creating a happy family to gather and in timely, family commitments. Teaching students to do homework. Care within the family and gives advice and the medium is the knowledge that is important the ability of the family. In Table 3, FESS Wheel Model for learners to show that all the elements that affect academic achievement. Elements are very important and the assignment completed on schedule. Conducting frequent exercises with the physical documents and various school supplies.

Take note of the intention and content of the course. Make learning fun; researchers think that will be useful to the attendees themselves. Leisure time to review the lesson. In Table 4, FESS Wheel Model shows that the social elements, all elements that affect academic achievement. Elements are very important and need sorely on your friends.

To my friends, regardless of their ability to learn; to get help from a friend; copying homework to do better; participation in the exchange of knowledge; understanding of course content; follow-up study of a case of absent friend; homework together and the comment sin the friend. Comparison of the elements that affect the achievement of the hearing. When comparing the average of the elements that affect the achie vement of the hearing showed that the four elements, the average is high (Table 5 and 6).

Table 3: The three components of the FESS Wheel Model, students will have the elements that affect the achievement of the nine elements of the factor loadings 0.674-0.865

Items	Variables	Factors
4	Students will complete homework assignments to meet deadlines	0.865
2	Students thinking of doing the exercises frequently. I will learn	0.855
8	Their health and the body of the school’s students	0.847
9	Students’ papers and school supplies	0.837
7	Students plan and write about the content	0.782
5	Students enjoy learning	0.765
3	Students will be useful to think of themselves	0.763
10	Students spend their time in reviewing the lesson	0.701
1	Students attend regularly	0.674

Table 4: FESS Wheel Model social elements are the elements that affect the achievement of the 12 components of the factor loadings 0.614-0.837

Items	Variables	Factors
23	Students need to rely on your friends	0.837
22	My friends, students, regardless of their ability to learn	0.835
18	Students can get help from friends	0.808
24	Who thought it better not to send a friend's house?	0.798
20	Students and friends together to share knowledge. Understanding of learning content	0.776
19	Students learn better when learning with friends	0.767
21	When necessary, absent students will attempt to learn from	0.766
25	Students to do homework with friends	0.711
17	Friends willing to listen to the opinions of the students	0.706
16	Friends are most important for the students	0.647
14	Students need to have a friend who understands and can discuss person issues	0.637
15	When students feel comfortable being with friends	0.614

Table 5: The comparison of the average of the elements that affect the achievement of the hearing

Factor's FESS Wheel Model	Mean±SD
Education	3.577±0.961
Family	3.893±0.861
Social	4.602±0.701
Student	4.203±0.704

Table 6: The variables of the elements that affect the achievement of the hearing

Q. No.	Variables
1	Who attend regularly?
2	Who think that doing the exercises frequently? I will learn
3	Who think that learning is beneficial to you?
4	Students will have homework assignments completed on deadline
5	The students enjoy learning
6	Students get help from a friend
7	The willingness to learn and write about the content
8	The availability of health and physical education
9	The learning materials and school supplies
10	Who spend their time reviewing the lessons learned?
11	You can find answers quickly in a limited time
12	Who have a friend who understands and can discuss personal issues?
13	Who frequently meets with the class teacher?
14	Who want to have a friend who understands and can discuss personal issues?
15	Who feel uncomfortable when being with friends?
16	Friends are important for students
17	Who are willing to listen to the opinions of the students?
18	Students get help from a friend
19	Students learn better when learning with friends
20	Students and friends together to share knowledge. Understanding of learning content
21	On the need to miss school. Students will attempt to learn from
22	Like my friends, regardless of their ability to learn
23	Who wants to rely on your friends?
24	Who think that the homework does not get better than this?
25	Who want to do homework with friends?
26	Parents took care of people-your people
27	Instructor is friendly with everyone
28	The family is the knowledge and abilities
29	You feel warm when they are with their parents
30	Parents teach their homework.
31	Who provide advice about learning?
32	Family support for students to study in class higher
34	Students have the intimacy/commitment with their parents
35	The parents take care of distress the joy of the students
36	Family care/contact the school on a regular basis
37	Parental guidance about learning
38	Parents to recognize their good deeds
39	They love and thousands of parents
40	I have to prepare to teach
41	Teachers and students have free time
42	I see a student's home
43	I have the knowledge to counsel
44	Teachers who quit teaching and learning time
45	I keep track of grades
46	I review the lessons with students
47	I have a severe learning
48	Teachers to teach in a friendly
49	I can clearly explain or answer any questions
50	I give you the opportunity to ask questions and problems in the classroom and outside the classroom
51	I have a way of teaching makes students want to learn
52	I like teaching a mule up Internet Facebook

**DISCUSSION**

The researchers found that the relationship is important for the learning of students with disabilities

have many elements. This is consistent noted that the composition of achievement for students, hearing that three elements are the elements of the teachers (teachers) component of the parents (parents) and the composition of the student (students). Research indicates that the student's impaired hearing has four components the composition of the teachers (Education), the family (Family), the composition of the student (Student) and the social (Social) elements of teaching: teaching methodology makes students want to learn and when they met and to allow a reasonable time teaching, providing opportunities for students to question the whole issue in the classroom and outside the classroom, the traditional home of the student, explaining or answering questions clearly, using the media to teach modern mule for Internet Facebook, a follow-up study, the knowledge to counsel.

The review of collaborative learning and rigorous learning, to teach and not teach you on time be prepared to teach pre-school. Elements of the family to recognize the successes, the love of warm, caring, giving guidance on how to learn to gain the support of the family to educate the homework. Elements of the course: homework assignments to be completed by the deadline, the skills by doing the exercises frequently, their health.

And the body of the school, the availability of materials and supplies and have fun learning, to be useful in the study. The social aspect is just a friend to my friends, get help from a friend, copying a friend's house, the exchange of knowledge among friends to discuss matters with their friends to see if the education. For the hearing to be effective, it must have a social element added to an element may have a range of family and friends. Family is the basic institutions of society and is of paramount importance.

The family serves as an educational institution, economic institutions and institutions of government or explain, family functioning, education and knowledge. And duty to discipline members of the family as a citizen. But now the institution has come to represent the family's role in providing education to the society. HI students who will take time and activities with friends as much as possible. The HI students have been assigned to work together to give students an incentive to learn more. The development of ideas and learning, the better. Competition in education is declining the acceptance of differences among colleagues and their ability to express more. Reduce dependence on the teacher less. Fontenot (1995) and Holliday (1995), so the hearing was a social friend. That they have meaning and importance of this group. The selection of students who are hearing they will have to learn to work and succeed in life. In the words of

the proverb that says KOB KON HAI DOO NAR SUE PAR HAI DOO NURE to be careful of my people they are going to bully my graduate students have taken to find the means to my wicked evil people doing evil to convince us with stones. If they have good knowledge, we can get better or get better knowledge of them, so if the education for the hearing shall have the following. This model queries about the elements that affect academic achievement.

### **CONCLUSION**

After using the method of this model, the researchers observed that the hearing impaired children felt secure, cared for, emotionally encouraged that the teachers understood them and were concerned about them.

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