

Original Paper

A Phenomenological Study on the Perception of Hearing-Impaired Students Towards Note-Taking Support: in an Effort to Comprehend their Meaning for College Life

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Abstract

With the Convention on the Rights of Persons with Disabilities adopted in Japan in 2014, support systems for students with disabilities are being put into place at colleges nationwide. However, it is reported that the lecture note-taking service is not being received by more than half of hearing-impaired students enrolled in college. The aim of this study is to elucidate the perception of hearing-impaired students towards note-taking support from their own viewpoint.

Semi-structured interviews were conducted with three hearing-impaired students, including one who did not receive note-taking support. The concept of “phenomenological reduction” was applied as a method of valid interpretation based on one’s ‘embodiment’ and ‘desire’, which represent his/her existential situations.

Findings suggest their existential meanings as college students, (1) to achieve autonomy as a person even with a disability, (2) to communicate with others enjoyably, while expressing themselves, and (3) to make a contribution to others as they have hearing impairments themselves.

In conclusion, in order to achieve “reasonable accommodation” regulated by the convention, college staff should have a continuous dialogue with each individual student on their genuine needs, not focusing solely on whether they voice a desire for support.

1. Introduction

The Convention on the Rights of Persons with Disabilities was recently adopted in Japan (Jan. 2014). Reasonable accommodation for hearing-impaired students, the number of whom has reached 1,500 in 2013, is being put into place in colleges¹⁾ nationwide. Note-taking (NT), which is an instant capture of the contents of lectures into texts by handwriting or machine captioning, is the most common form of support for those students. This service has been introduced to almost half of the colleges where hearing-impaired students

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Table 1 Classification of hearing loss

Degree of hearing loss	Hearing loss range (dB HL)
Normal	-10 to 15
Slight	16 to 25
Mild	26 to 40
Moderate	41 to 55
Moderately severe	56 to 70
Severe	71 to 90
Profound	91+

The same classification of hearing loss is used [2]

are registered in Japan [1].

Hearing impairment is a broad term that refers to hearing losses of varying degrees from hard-of-hearing to total deafness (Table 1). Among the conditions that affect the development of communication skills of persons with hearing impairments are personality, intelligence, nature and degree of deafness, degree and type of residual hearing, degree of benefit derived from amplification by hearing aid, family environment, and age of onset. The most frequently used method of communication is a combination of speech reading (lip-reading) and residual hearing, which is often amplified by hearing aids. Also most hearing-impaired students have normal speech organs and have learned to use them through speech therapy. So the students who communicate with speech and speech reading, as opposed to communicating manually with sign language, are referred to as “oral”.

In recent research on hearing-impaired students in Japan, there are two mainstreams. One is to discuss the way of the supporting system for impaired students, which is not only for hearing-impairment but for all kinds of disabilities [3, 4]. The other is a set of studies on technical developments of simultaneous translation such as real-time captioning using automatic speech recognition technology or the mobile-type remote-captioning systems [5, 6]. There have been several phenomenological studies abroad which dealt with experiences of hearing-impaired students regarding their development of identity or relationship with their sign language interpreters [7, 8]. However, there have been few researches that focus on how the students recognize receiving support in college, which is considered a fundamental viewpoint to establish the supporting system.

As social and emotional impact on hearing loss, WHO [9] reports that limited access to services and exclusion from communication can have a significant impact on everyday life, causing feelings of loneliness, isolation, and frustration. Boutin indicates that many deaf students continue to struggle to receive and interact with classroom information while hearing students do not face the same challenges [10]. Hearing loss can have a profound effect on academic performance by the functional impact, yet when communication assistance is provided, impaired students can participate on an equal basis with others [9].

In relation to the assistance, Brooks [11] suggested that it was essential to understand states of “help-seeking” readiness and “help acceptance” through which most people progress in adapting to their hearing loss. In the research, a four-stage framework was proposed; Stage 1 “Unaware of the need for help or behavior change”, Stage 2 “Aware that a problem exists, but unaware that help is available”, Stage 3 “Aware that a problem exists and help is available, but not interested in or ready to accept help”, Stage 4 “Aware that a problem exists and help is available. Interested in and ready to accept professional help”. Yoshikawa also showed the three progressive changes for Japanese hearing-impaired students to use NT support, which are negative reaction, passive request, and active utilization [12].

However, Cuculick and Kelly revealed that even with the increase of support and access services provided in colleges across the nation for deaf students, there had been no change in persistence and

graduation rates [13]. This research suggests that it would be insufficient only to recommend NT support progressively to the students. Still, in Japan, the lecture NT support is not being received by more than half of hearing-impaired students. It is necessary to understand the support receiving experiences of the students since the analysis of them is vital for improving the supporting services. The aim of this study is to elucidate the perception of hearing-impaired students toward NT support from their own viewpoint.

2. Methods

2.1. Data collection

Three hearing-impaired students at Z University participated in this study, who were selected by snowball-sampling (Table 2). Z University is a middle-scaled local university that trains healthcare professionals. In-depth, semi-structured interviews were thoroughly conducted with the students. The questions were, for example, how they feel when they are receiving NT support, how they want to spend their campus life (interview guide is attached at the end). Each interview took 1-1.5 hours per student. One of the researchers attended the interviews as a simultaneous interpreter to assist our communication.

Besides the individual interviews, field information provided in the coordinator duties of the NT support was referred to in the analysis.

Table 2 Summary of the participants

	Student A	Student B	Student C
Grade	3	2	1
Sexuality	female	female	female
NT support	○	×	○

2.2. Ethical consideration

As two of the researchers were coordinators for the NT support at Z University, there was already a relationship between the participants and each researcher as an interviewer, which made the interviews reflective. On the other hand, there was a possibility that the participants might have thought that they had to be obedient to each researcher or that they would not express a negative opinion for the support under the relationship involving authority or power. Therefore, as the third researcher was an outsider, she was involved in the interviews and its analysis with a neutral and objective viewpoint.

In consideration of the above, we researchers informed the participants of the following contents with oral and written interview guides before undertaking the interviews, and then obtained their consents for each.

- It is not compulsory for them to answer all of the questions as they may leave the questions that they do not wish to answer blank.
- It does not affect their academic performance grading, so they could share their feelings and express their expectations towards the university frankly.
- The research team takes full responsibility for the content of the interview as it is purely used for this research only.
- When the findings of this research are published, all of the data will be kept anonymous. The confidentiality of their information is highly regarded.

2.3. Method and perspective of analysis

To understand the students' existential meanings, a phenomenological approach was adopted to their interview transcripts. The fundamental idea of Husserl, the founder of phenomenology, is mostly simplified that "essence" can be taken from the "phenomenon" through "phenomenological reduction" [14]. Sakugawa et al. proposed that, when applying Husserl's idea in healthcare research, "phenomenon" refers to a subject's

statement, expression, and action we actually perceive, and the word “essence” is considered to represent the subject’s “existential meaning” from the worth for his or her own life [15]. This teleological application of philosophy is considered one of the most existential interpretive variations among phenomenological research methods. As this study was aimed to elucidate existential meanings of the students’ experience, Sakugawa’s method was adopted for the analysis.

The procedure of phenomenological reduction by Sakugawa et al [15], is the following:

1) Bracketing (for researchers to suspend the judgment on the phenomena with their “natural attitude”)

The word “bracketing” refers to the suspension of judgment, which is known as “*epoché*”, to obtain an accurate perception of phenomena. This concept shows a change in the researcher’s attitude from natural to phenomenological. Ingrained “natural attitude” is the way of unconsciously perceiving subjects’ experiences with conventional wisdom, stereotypes, and traditional theories. It will be described in the heading of 4.1. about the concrete “natural attitude” on support for hearing-impaired students. The practice of “bracketing” is not to deny or to remove our “natural attitude”, but to identify and to gain consciousness of our preconceived knowledge on the subject’s phenomena.

2) Considering subject’s existential meanings through his/her “embodiment” and “desire”

In the second procedure, the embodiment and desire are the fundamental elements which explain the subject’s existence (Fig. 1). The “existence” could be best defined as an attitude by which a person wants to achieve the meaning and worth in his or her own life. “Embodiment” represents the subject’s situations, which bind him/her physically, socially, and mentally. “Desire” represents what the subject wants to acquire or to become being released from his or her embodiment, seeking for the meaning and worth in life. This is the understanding scheme of the subject’s existence in this research, which is essential for the valid interpretation of the subject’s phenomena.

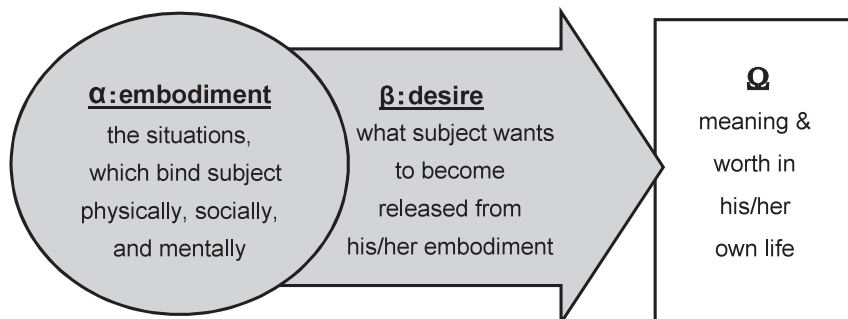


Fig. 1 Understanding scheme of subject’s existence

3) Rewriting the phenomena according to 2).

Finally, the existential meaning of the phenomenon (subject’s statement, expression, and action) revealed by the reduction was described according to the second procedure. This is, in other words, the refining process of the researcher’s certainty of the phenomena, and therefore, procedure 2) indicates the conditions of the researcher’s interpretation for validity in this method.

3. Results and analysis

3.1. Statements of the hearing-impaired students on experiences in college life

It would be useful to understand the hearing-impaired students’ general experiences in college life before examining their perception on NT support. Their representative statements are presented in chronological order before and after entrance to college to the present (Table 3). Five common themes in the students’ experiences were found; (1) the hope to enjoy college life and the will to challenge themselves (before entrance), (2) frequent problems due to their hearing impairment, (3) sometimes worried whether their

Table 3 Experiences in college life found to be common among the three students

themes of experience	representative statements (Student #)
(1) the hope to enjoy college life and the will to challenge themselves (before entrance)	<ul style="list-style-type: none"> • I was looking forward to attending clubs and events, having a part-time job and making friends. (A) • I wanted to challenge new things, especially sign language. (B) • I desired to be a speech therapist despite others' opinions that it's difficult for me. (C)
(after entrance)	<ul style="list-style-type: none"> • Missing notices for class cancellation or a make-up class made me aware of my disability. (A)
(2) frequent problems due to their hearing impairment	<ul style="list-style-type: none"> • I often have trouble because of my hearing-impairment. (B) • I can't join group work as expected because of the mobility of the NT setting. (C)
(3) sometimes worried whether their present ways are all right or not	<ul style="list-style-type: none"> • I wonder if I will be able to survive in society. (A) • I don't know if my way of studying with text & slides is sufficient. (B) • I need NT, but I feel I stand out when I get support. (C)
(4) enjoying their campus life including classes	<ul style="list-style-type: none"> • I have an enjoyable time with friends. I also enjoy lectures on social work. (A) • I'm looking forward to my field practice and play with sign language. It's fun to use sign language because I can talk by myself. (B) • I have enjoyed myself a lot after entering university. (C)
(5) the will to think, decide, and act by themselves	<ul style="list-style-type: none"> • I feel a sense of responsibility as a college student. One of my goals is to acquire ability to act by myself. (A) • I can do it by myself if I do my best. When I get into trouble, I think (to resolve it) by myself. (B) • Although the faculty told me it would be very hard for me to study and to get a job, I thought I would do my best. (C)

present ways are all right or not, (4) enjoying their campus life including classes, (5) the will to think, decide, and act by themselves.

3.2. Experiences to achieve self-determination on NT support

In carrying out reasonable accommodation, the subjective needs of each impaired student should be the most important basis. The statements of the three students in this study on the use of NT support are shown in Table 4. The experiences to determine if they should use NT support or not are the following.

Student A, who had continued to use NT support since college entrance, stated, "I was shy and reserved before. I was willing to manage on my own. But I found that other people were thinking of me, and accepting me as I was, and that I may rely on them". This statement means that she was relieved and glad to know the existence of the people who accepted her forthrightly with her hearing impairment, which became the opportunity for her to go forward for support.

Student B stated the situation in which she had once requested NT support for more than 10 subjects. "It was when the second semester had just begun and I was afraid that I alone might be troubled in a lecture". However, she appeared again two weeks later and said she did not need any support after all. After several classes, she found she was able to manage on her own. "I didn't know whether I needed support or not until I was used to the way of the lectures."

Table 4 The students' statements on the use of NT support

Student A	<p>"I was shy and reserved before. I was willing to manage on my own. But I found that other people were thinking of me, and accepting me as I was, and that I may rely on them." "I think it is necessary to receive NT support."</p> <p>"I would like non-hearing-impaired students to have the experience of support while note-taking for me."</p>
Student B	<p>"It was when the second semester had just begun and I was afraid that I alone might be troubled in a lecture" "I didn't know whether I needed support or not until I was used to the way of the lectures."</p> <p>"I don't need NT. I can manage by myself, because I'm already a university student."</p> <p>"I think it unnecessary to be overly polite (to note-takers)."</p> <p>"I don't know if my way of studying with text and slides is sufficient."</p>
Student C	<p>"I need NT, but I feel I stand out when I get support." "I can't join group work as expected because of the mobility of the NT setting."</p> <p>"I initially thought that there would be only one or two subjects that I need NT support in, but the faculty advised me to get the support in all lectures I took. They are specialized in hearing disability, so I would do as they said."</p> <p>"I now want to decide which lectures I receive NT support in."</p>

For Student C, her major greatly influenced her experience. "I initially thought that there would be only one or two subjects that I needed NT support in, but the faculty advised me to get the support in all lectures I took. They are specialized in hearing disability, so I would do as they said." Yet she also stated later, "I feel like I would like to decide by myself in which lecture I will use the support."

From the above, it is understood that the three students each had different processes in which they determined whether or not to use NT support. Their attitude toward the support has changed by various chance experiences. The students sometimes went through months of indecisiveness about the support, which showed the importance of college staff complying to their decision-making process while remaining resolute.

3.3. Existential meanings of the hearing-impaired students

Using the method of phenomenological reduction, the existential structure and meaning of the students who participated in this study were shown in Fig. 2. Their embodiment (a) was different individually, depending on the degree of hearing, the way of their communication, whether their hearing impairment is congenital or acquired and whether they use a hearing aid or not. Thereby so was their desire (β) particularly about the NT support. Although there was a difference of their factual situation as well as their statements, three common denominators with their existential meaning and worth (Ω) were derived; (1) to achieve autonomy as a person even with a disability, (2) to communicate with others enjoyably, while expressing themselves, and (3) to make a contribution to others as they have a hearing impairment themselves.

These meanings suggests that none but the students with experience of hearing impairment could have such challenging purposes in life. Each of them has a strong will to manage her life while experiencing inconvenience and bitterness with their hearing impairment, and sometimes worrying whether their present way is all right or not. Precisely, they would rather explore the significance of their existence and the way in which they could contribute to others and society as a hearing-impaired person than simply being students just receiving the support.

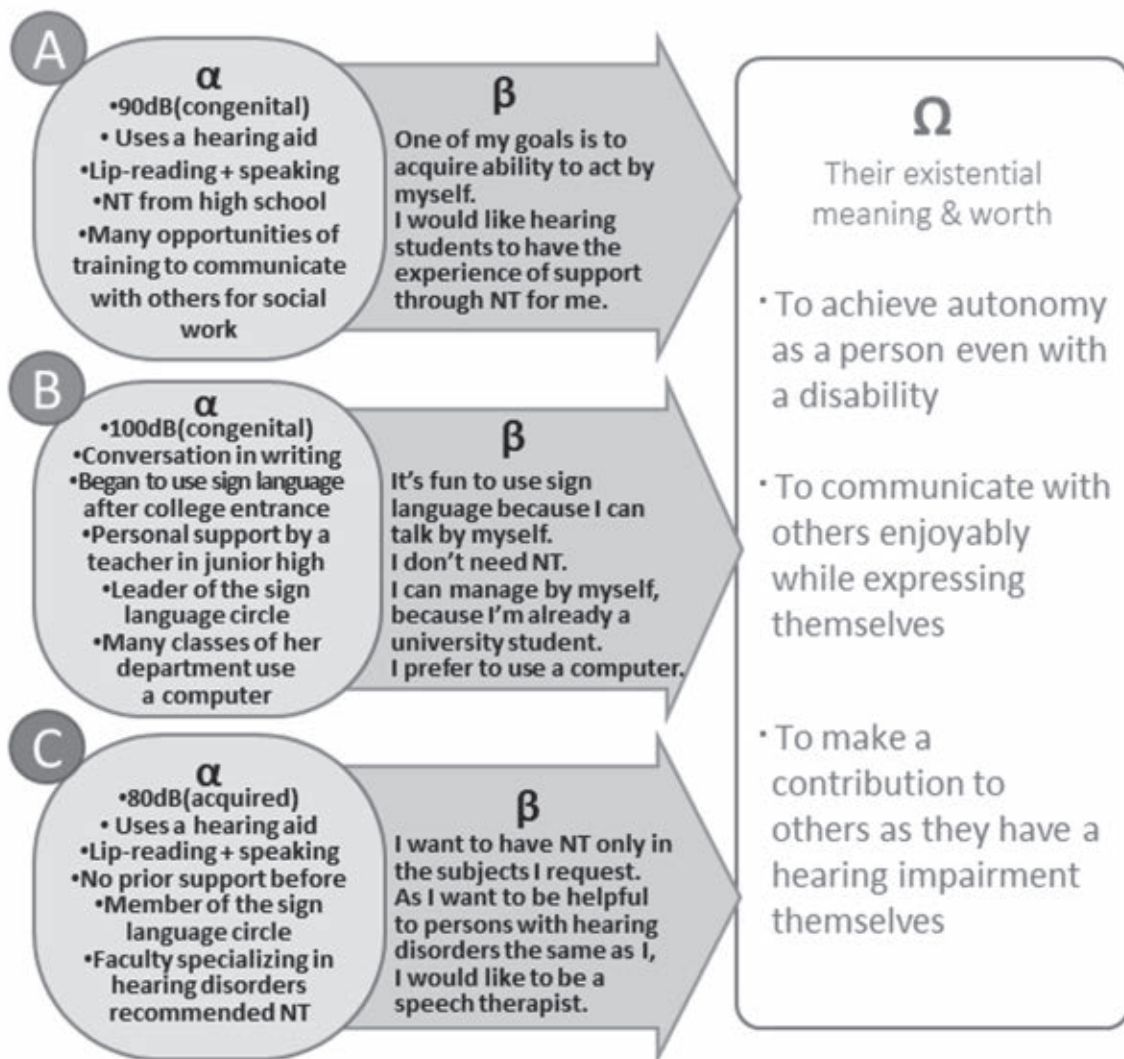


Fig. 2 Existential structures of the three hearing-impaired students

4. Discussion

4.1. Shift of viewpoint by phenomenological reduction: methodological discussion

As Brooks and Yoshikawa suggested the progressive changes for hearing-impaired students to use their support [11, 12], college staff are likely to consider that those students who reject formal assistance like NT support as immature because they haven't fully accepted their own disability or are ignorant of the utility of the support. In this study, however, Student B had known the availability of the NT support at college and already made use of it for some subjects. She also heard from some of her friends from the Japan Deaf Student Association that it was their right as handicapped students to get lecture support. Moreover, she recommended the support to Student C as Student C was a new student.

In addition, Student B embraced her role as leader of the college sign language circle, and also joined the activities of the Japan Deaf Student Association. With these activities, she demonstrated a concern to make a contribution as a hearing-impaired student. It is reasonable to see that she has accepted her handicap to a certain extent.

On the other hand, Student B didn't require NT support, even though she had sometimes worried if her way of studying with textbook and slides was sufficient. Actually, the classes of the Department of Health Information Student B was taking were primarily computer-based learning. More of these classes had lecturers' typing simultaneously displayed on the students' computers during the lectures, which was easier

to grasp than all-spoken lectures at college.

From the above, Student B should not be regarded as immature in accepting her handicap nor as ignorant to the utility of support. Her reason not to receive any NT support was that her learning environment using computers would have helped her catching information and that she had decided she was adult enough to manage by herself. She also stated in her interview that she thought it unnecessary to be overly polite to note-takers as if this would make them sorry for her. This statement would refer to her strong desire to be independent to study and to have an equal relation to other students as note-takers. Her rejection for support should not be seen at the graded development stage, but from her individual situation and her autonomous desire. It shows that it is necessary for researchers, certainly for college staff, to shift the viewpoint from objective (based on example; "It is natural to receive NT support. Why doesn't she request it?") to existential ("What situation made her not use the support? How does she desire to live?"). The method of phenomenological reduction could enable us to be aware of our ingrained "natural attitude".

4.2. The essence of information support from the impaired students' viewpoint

It has been said that information support is necessary for hearing-impaired students especially in lectures. Thereby the improvement of the simultaneous interpretation systems such as sign language and NT has been systematically and technically advancing.

However, is it the only issue of the support for hearing-impaired students? Student A stated that she would usually ask her friends in the same department or a faculty member when there was something she could not understand. In contrast, Student B would instead ask her friends of the sign language circle to help her if she had any troubles at college. Student B also stated, "It's fun to use sign language because I can talk by myself."

Hearing-impaired students might have a trying experience both in giving and receiving information, yet it would not be an individual difficulty of each action. It should be attributed to the fact that they cannot have a flow of communicative verbal interaction in which we ordinarily exchange information, or express feelings for one another.

When we (hearing) obtain information, it is finished when we hear it. However, if we cannot hear it clearly and do not know the meaning, we can ask and confirm it, because the words have not only general meanings in the dictionaries but also the message characteristics of the speaker. Moreover, if we have an agreeable or opposite opinion to it, a discussion might occur.

With hearing-impaired students, it is much more complicated to communicate as they have many more obstacles, even if communicating orally. In the interview with Student A, she stated "I used to hesitate to ask for help. I didn't want to trouble others". Student B chooses to write to communicate with those who do not do sign language. Both students feel that, when communicating, if they dare to ask for confirmation, they could misinterpret the response or worry that they may bother the person by asking them to repeat what they said. These experiences would make it harder for them to express themselves to others. To express oneself may include expecting a reaction from the other, so it requires one to realize one's own response.

This suggests that 'information support' for hearing-impaired students would require more than just conveying a lecture. It should also be a means for the students to express themselves in order to fully engage in their studies and actively participate in class. This would ensure the meaning and accuracy of the information they finally receive, enhancing their sense of self-existence in class.

5. Conclusion

In order to achieve "reasonable accommodation" regulated by the convention, it is necessary to assure the opportunity and process of self-determination of hearing-impaired students. It suggests that college staff should have continuous dialogue with each individual student on their genuine needs, not focusing solely on whether they voice a desire for support.

In this study, it was suggested that a right the students execute on their own means to decide by themselves how to overcome their difficulty occurring from their own hearing impairment, in their situations (the extent of their disability, ways of communication, the characteristics of the lecture at the department they belong to), being informed of the existence of NT support and having an experience of it, also including their hearing of opinions of friends with similar disabilities, their parents, or their faculty.

Therefore, the awareness of disabled persons' rights would not be the consciousness that they take for granted to be supported because of their disabilities, but self-awareness that they are able to determine if they require the assistance or not. Acceptance of one's own disability concerns not only recognizing (affirming) oneself as hearing impaired, but thinking it is worthwhile to willingly contribute to others.

College might play a role to cultivate both the awareness of disabled person's rights and their existential way of life.

Note

- 1) The college in this paper is a generic name, including the university.

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Appendix Interview Guide

Purpose of the interview

The objective of this interview is to examine the supporting facilities provided by the university for those students who have a hearing impairment, and the personalized arrangements being made to accommodate their circumstances.

In order to achieve this aim, we would like to interview those students who require assistance for note taking. If you could please share your feelings with us, such as your expectations and concerns before the commencement of university, your experience so far with the assistance that you have received from university, as well as the note taking supporting arrangement. It is not compulsory for you to answer all of the questions as you may leave the questions that you do not wish to answer blank. It does not affect your academic performance grading, so you could share your feelings and express your expectations towards the university frankly.

The research team takes full responsibility for the content of the interview as it is purely used for this research only. When the findings of this research are published, all of the data will be kept anonymous. The confidentiality of your information is highly regarded.

Questionnaire

[About the present situation]

1. What do you think about having or not having assistance for note taking?
2. Have you consulted with your friends, lecturers or your parents etc. regarding having note taking assistance?
3. Please tell us if you have had any difficulties in lectures (If you have been receiving note taking assistance, please also tell us your expectations for note taking assistance).
4. Please tell us if you have had any difficult times in university life other than lectures, such as managing your relationships with your friends, lecturers, etc.
5. Have you changed your thinking about note taking assistance since you enrolled in university?

[About the situation before and after the entrance to college]

6. What kind of support did you receive during your study in high school (junior and senior high school)?
7. Did you have any expectations or concerns before going to university? Did you talk to your parents or teachers about it and did you receive any advice from them?
8. How did you hear about the assistance from university? What kind of information did the university provide to you?
9. When was the most joyful/enjoyable moment for you in your university life so far?
10. When was the most difficult time for you in your university life so far? Was it related to your hearing impairment?

[About the future]

11. How would you want to spend your university life?
12. As a student with a hearing impairment, please comment on note taking assistance and your expectations on university services?

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