* Recognize that students who are D/HoH may use a variety of different communication methods and strategies.
* Speak to/address them directly, not the interpreter.
* Pre-teach technical vocabulary to student(s) and/or interpreter.
* Utilize access services on campus (C-print, notetaker, FM).
* Encourage interaction amongst all group members.
* Establish roles, responsibilities, and expectations in group interactions.
* Developing communication rules or ‘communication courtesy’ within a group.
  + - acknowledge speaker
    - one person speaks at a time
    - limit interjections and distractions
    - utilize a note taker in the group
    - consider environment and lighting

1. For Instructors

Working with a Deaf/HoH student will be a new experience for many professors. Historically, Deaf students have been most often taught by teachers who specialize in teaching those who are Deaf/HoH. This is a specific subset of teachers who abide by their own standards for teaching and have been taught how to best present information to Deaf/HoH students. Professors at the university level, unlike teachers at the highschool level, do not need to have a background in teaching philosophies or in best practices for teaching students of varying levels. Because of this, Professors entering a university where they may have students of mixed backgrounds, learning styles or abilities may feel unprepared for differentiating their instruction style. They may also be unaware that small accommodations in the classroom can make for a much different communication and learning environment. In this section we will discuss some measures instructors can take to communicate and teach more effectively to any class, but specifically a class of both hearing and Deaf/HoH students.

1:1 interactions and Interpreters

* ­When speaking to a Deaf/HoH student, look at and speak to the individual not toward the interpreter.
* Clarify/repeat messages and/or give examples if the student or interpreter is having difficulty with the translation of information. Do not say ‘never mind’ if the information was missed.
* Allow for and account for lag time with interpreters. Although most skilled interpreters are extremely fast and efficient at relaying information, there will always be a bit of a lag time when interpreting. Consider the situation where – an instructor may call on a hearing student to answer a posed question before the interpreter has finished signing the original question (Long, Marchetti, & Fasse, 2011).
* Pre-teach vocabulary if possible. Discuss vocabulary terms with interpreter prior to the lecture to ensure that the terms will be explained clearly.
* Many Deaf/HoH students have access to auditory information via a hearing aid, cochlear implant and/or FM system. Each student will be different in their ability to utilize the auditory avenue for communication.

Lectures

- Talk with the Deaf/HoH student(s) about their communication preferences and needs. Determine which services (if any) they will be using throughout the course (C-print, note taking, interpreting, etc).

- Allow for all information to be accessed visually, (put everything up on the board, access slides on course website, etc.)

- Dual or multi directional attention is a huge barrier in a classroom. Dual attention refers to the attention needed to attend to two stimuli simultaneously. Hearing people often do this with little effort (you may listen to a teacher while taking notes or looking at a handout). “In contrast to hearing students who use dual channels—auditory and visual—for the input of classroom information deaf and hard of hearing students tend to rely primarily on a single channel – the visual channel.”[2]. A classroom is full of auditory and visual channels that Deaf/HoH learner must process through a mostly visual sense. -- Watch an interpreter, see information on the board, take notes, and look at hand outs. For those with some auditory access—they must also try to process the spoken message from the professor and filter out extraneous conversations and noises. All of this can be overwhelming to try to focus on at the same time. This is often results in the Deaf/HoH student missing information in one of these areas. To account for this, try to:

* Speak first –then write on the board – try not to speak while facing away from the class or writing information that the student will need to see at the same time.
* Account for interpreter lag time
* Ask students to raise their hand and say who they are before speaking –this is helpful for the interpreter to be able to indicate who is speaking and to interpret only one message at a time.
* Provide notes and new vocabulary in advance
* Document the goings on of the class and publish on class website
* Design lesson plans in an organized, sequential manner
* Using a chat program for discussions outside of class can help with communication process-google docs, gchat, question forums,

Groups

Group work can be one of the biggest challenges in software engineering courses. Working in a mixed hearing and Deaf/HoH groups makes group communication more challenging.

 - Faculty need to take the lead by setting up clear guidelines and follow up. Make comments on interaction with clear reinforcement.

-One option to do this could be to create a point system for group involvement- assign bonus points based on collaborative accomplishments. If groups are happening in the classroom, wander around and assign extra points to those teams that are working collaboratively.

- Establish roles, responsibilities, and expectations in group interactions. Encourage students to take on specific roles in the group and stick with the roles.

- Based on some of the responses from our surveys, some recommendations are to –

-Encourage Deaf/HoH students to take Leadership roles in the group.

-get to know your group mates- do team building exercises to encourage communication.- Maintain the same group for the semester- once students set up working relationships with their group and develop communication strategies that work for them encourage them to use the developed relationships to their advantage.

- Deaf/HoH students should advocate for themselves as much as possible to

- Research shows that although giving communication strategies (turn taking, eye contact, facing toward communication partner, etc.) is important and useful for group work, it doesn't seem to be as powerful as using an overriding open/transparent way of communicating through technology. (i.e. g-chat, white board, google docs, question forums, etc) [1].

- The use of a chat program can help with communication process by allowing each student the time to process the information and clearly communicate responses while working collaboratively. The level of complexity of communication goes up when everyone is involved and able to fully participate. [1].

1. For Deaf or Hard of Hearing Students

Advocate for yourself in lectures and groups by:

* Informing the interpreter if you do not understand their signing, a term presented or parts of the material.
* Going to office hours, emailing, or virtual chatting with your professors and discuss any questions, concerns you may have

1. For Hearing Students
2. Overall
3. Long,G.L., Marchetti,C., & Fasse,R.( 2011)—The Importance of Interaction for Academic Success in Online Courses with Hearing, Deaf and Hard-of-Hearing Students. The International Review of Research In Open and distance Learning, 12, 6, 2-19
4. Mather, S. M., and Clark, M.D. (2012) An Issue of learning the effect of Visual split attention in classes for deaf and hard of Hearing students. Odyssye, 20-24, retrieved from <http://www.gallaudet.edu/Images/Clerc/articles/Odyssey_SPR_2012_MatherClark.pdf>
5. Marchetti, C., Foster, S., Long, G., Stinson, M., (2012) crossing the communication barrier:Facilitating communication in mixed groups of deaf and hearing students. Journal of postsecondary education and Disability, 25(1), 51-63
6. Long, H. G. (2002) Higher Education for Deaf Students: Research Priorities in the New Millennium, Journal of Deaf Studies and Deaf education, 7:4 267-280
7. Pliner, S.M., Julia, J.R., (2004) Historical, Theoretical, and foundational Principles of Universal instructional design in Higher Education, Equality & Excellence in Education, 37:105-113
8. Powell, D., Hyde, M., Punch, R. (2014) Inclusion in Postsecondary Institutions with Small Numbers of deaf and Hard-of-Hearing Students: Highlights and Challenges. Journal of Deaf studies and Deaf Education. 19:1, 127-140
9. Schick, B., Williams, K., Kupermintz, H. (2006) Look Who’s Being left behind: educationional Interpreters and Access to Education for Deaf and Hard-of-Hearing Students. Journal of Deaf Studies and Deaf Edcucation11:1, 3-20