

Functional Listening Evaluation

Using the Recorded FLE

Objectives of this Presentation

Participants will be able to:

1. Use the Recorded FLE to estimate functional listening ability in the classroom
2. Set up to perform the Recorded FLE Using Sentences, including student instruction
3. Interpret the FLE results in a way that assists teachers, parents and other staff in understanding how the hearing loss impacts communication effectiveness in the classroom.
4. Learn where and how to purchase the Recorded FLE

Purpose of the Functional Listening Evaluation (FLE)

- The purpose of this evaluation is to determine how listening abilities are affected by noise, distance, and visual access in an individual's natural listening environment.
- The FLE can also be used as a validation tool to demonstrate the benefits of the student's hearing assistance technology.
- The FLE can also be useful in justifying other accommodations, such as sign language, note taking, captioning, minimize background noise and special seating.

How do children without HL perform in noise?

- Children without hearing loss can understand:
 - 95% in Quiet
 - 90% in Noise
- How do we know what our students can understand in the typical classroom environment?
 - Only 39% of the ability to understand speech in noise can be predicted from hearing thresholds. (Yoon, Allen & Gooler (2012))
 - We need to collect DATA to determine their individual strengths and weaknesses in the area of functional listening

What is the Recorded FLE?

- 15 lists of 10 sentences, 5 words each in length
- Hearing in Noise Test (HINT) sentences used, controlled for vocabulary so that the material is appropriate to use for students age 5 and older
- Lists are presented in quiet and in noise
- Classroom noise is 5dB quieter than targeted speech
- Sound files can be downloaded to phone, iPad or computer (we have district license, so all assessment staff can download files.)
- Scoring form can be printed or a computer fillable form can be used- you will need to save the form to your computer prior to filling out.

What is the Recorded FLE?

THE RECORDED FUNCTIONAL LISTENING EVALUATION USING SENTENCES

Student: _____ Grade: _____ Date: _____ School: _____ Evaluator: _____

Using the practice sentences on page 2, set the volume at a comfortable "teacher loudness" for the student listening at the close distance (control gain) recommended. Repeat conditions in noise. Do not change volume level. Consider that noise levels in speech with recording for AN conditions. Check words omitted or said incorrectly. Acceptable alternate forms have been indicated.

ACQ: Auditory only in quiet close ANQ: Auditory only in noise far Check if the student uses HINT/CI device.

ACN: Auditory only in noise close ANN: Auditory only in noise far Note: 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

List #	Condition	ACQ/	HNT/CI/Name	Total of SD	n = 100 N	List #	Condition	ACQ/	HNT/CI/Name	Total of SD	n = 100 N
1	The	dog	can	be	delicious	1	There	is	not	enough	to
2	The	young	people	are	interested	2	There	is	not	enough	to
3	The	young	people	are	interested	3	There	is	not	enough	to
4	The	young	people	are	interested	4	The	book	tells	about	the
5	The	young	people	are	interested	5	The	book	tells	about	the
6	The	young	people	are	interested	6	The	book	tells	about	the
7	The	young	people	are	interested	7	The	book	tells	about	the
8	The	young	people	are	interested	8	The	book	tells	about	the
9	The	young	people	are	interested	9	The	book	tells	about	the
10	The	young	people	are	interested	10	The	book	tells	about	the
11	The	young	people	are	interested	11	The	book	tells	about	the
12	The	young	people	are	interested	12	The	book	tells	about	the
13	The	young	people	are	interested	13	The	book	tells	about	the
14	The	young	people	are	interested	14	The	book	tells	about	the
15	The	young	people	are	interested	15	The	book	tells	about	the
16	The	young	people	are	interested	16	The	book	tells	about	the
17	The	young	people	are	interested	17	The	book	tells	about	the
18	The	young	people	are	interested	18	The	book	tells	about	the
19	The	young	people	are	interested	19	The	book	tells	about	the
20	The	young	people	are	interested	20	The	book	tells	about	the

What materials do I need to do the FLE?

- You will need to gather the following materials:
 - Listening tube- I listen to hearing aids and do Ling 6 Sound Test prior to testing
 - Either printed FLE form or computer to mark the form on electronically
 - Audio files- either on phone, iPad or computer
 - External speaker and cord (unless it is BlueTooth)
 - Tape measure or knotted string- to measure your distances for close and far
 - Tape- to mark distances
 - Speech Hoop- to use if you are utilizing Lists 9-12 for the benefit of FM/DM System (optional)
 - Sound Meter App- Decibel X, dB Meter... (optional)

The different listening conditions

AVCQ - Auditory + visual in quiet close	AVFN - Auditory + visual in noise far
ACQ - Auditory only in quiet close	AFN - Auditory only in noise far
AVCN - Auditory + visual in noise close	AFQ - Auditory only in quiet far
ACN - Auditory only in noise close	AVFQ - Auditory + visual in quiet far

- There are 8 different listening conditions:
 - AVCQ- Auditory + Visual in quiet close
 - ACQ- Auditory only in quiet close
 - AVCN- Auditory + visual in noise close
 - ACN- Auditory only in noise close
 - AVFN- Auditory + visual in noise far
 - AFN- Auditory only in noise far
 - AFQ- Auditory only in quiet far
 - AVFQ- Auditory + visual in quiet far
- This order balances for difficulty across conditions so that the final task is the easiest of the far conditions.

Identify Student Amplification and Distance/Loudness

Check if the student uses HA/CI/FM/none.
Close distance = _____ or _____ dB HL
Far distance = _____ or _____ dB HL
Noise +5 S/N (voice is 5 dB above noise)

- You will need to circle if the testing will be done with hearing aids, cochlear implants or no amplification. You will do Lists 1-8 with amplification only and then Lists 9 -12 with FM (if testing the benefit of the FM/DM System)
- Close distance= 3 feet
- Far distance= 12 or 15 feet, depending on how large the classroom is that the student is typically in
- It is important to document what distances you use the first time and have the same setup each administration of the test

Physical set-up of the testing environment

- The student's typical classroom should be observed to determine maximum listening distances.
- When setting up for the close conditions, measure the distance from the student's ear to the examiner's mouth.
- Record the far and close condition distances on the Summary and Interpretation Form.
- You can either use a tape measure or a knotted string for the setup.

Physical set-up of the testing environment (cont)

- Close: Sound source and examiner are 3 feet in front of the student.
- Far: Sound source and examiner are 12 or 15 feet in front of the student. The sound source stays next to the examiner.



Determining Loudness of the Recorded FLE

- Set the volume of the sound source so that the voice in quiet, at 3 feet away is at a "comfortable teacher loudness" level for the student.
 - Once you set the volume, it will stay at that volume throughout the remainder of the test
 - Record the volume parameters- I turn my volume on my phone all the way up and then mark how many "clicks" on my speaker. I write this down and use it every time I give the test

AV condition requires speechreading

- During the portions of the test that are auditory + visual, you will need to mouth the words as the speaker says them.
- You will need to practice your timing on these sentences to get your "lip-synching"
- **DO NOT OVER ENUNCIATE OR GESTURE**

You are ready to give the test!

- Make sure your testing room is set up beforehand
- You will need around 20 minutes to administer the test
- Give the instructions to the student:
 - He will be hearing sentences.
 - He should repeat exactly what he hears.
 - If he is not sure what he heard, it is okay to guess
 - Reassure student that everyone has more difficulty understanding in noise and not to worry if it seems harder
- Play the Practice Sentences- first in AVCQ and then in AVCN conditions
- Be prepared to pause audio, if needed
- Use scanning motion when scoring of all sentences to reduce student anxiety

Performing the Recorded FLE

- Combined lists 1-8 will present each of these lists one after another. There are 10 seconds between lists. (List 3 and 4 are reversed)
- The first 4 conditions are all at 3 feet; once they are done then you move your desk and where you stand so that you are at the far distance.
- If using the FLE for the determination of FM/DM benefit:
 - Use lists 9 - 12
 - These lists only have 5 second intervals of noise
 - During this part of the test, you will speak the sentences, mimicking the same cadence as that of the FLE audio file
 - List 9 & 12 are with auditory + visual input
 - List 10 & 11 are auditory only- you can either use a speech hoop or have the student look at their desk while listening

Class participation

- Now we will do a class demonstration
- We will do the first 3 sentences under each section
- You can respond with what you hear... I obviously cannot score all of you
- Practice Sentences (Practice doing the mouthing with me)

AVCQ	AVCN
The fruit came in a box.	The milk is by the front door.
A boy ran down the path.	The new road is on the map.
The match fell on the floor.	A broom is in the corner.

Scoring the test

- On the fillable response form, you will click on the words that the student got wrong
- Each word clicked as an error will reduce the percent total by 2%

List 1	Condition	AVCQ	HA/CI/none	Total of 50:	= 84 %	List 2	Condition	ACQ	HA/CI/none	Total of 50:	= 92 %
1	Big	dogs	can be dangerous			1	The/A	tub	faucet	was/is	breaking
2	Her	shoes	were/are very dirty			2	They	heard	a/the	funny	noise
3	The/A	player	lost a/the shoe			3	He	found	his	brother	hiding
4	A/The	fire	is/was very hot			4	A/The	book	tells	a/the	story
5	Flowers	grow	in the/a garden			5	She	lost	her	credit	card
6	The/A	shop	closes for ✓ lunch			6	The/A	team	is/was	playing	well
7	The	police	helped a/the driver			7	The/A	little	boy	left	home
8	She ✓	looked	in her mirror			8	He	wore	his	yellow	shirt
9	He	really	scared his sister			9	A/The	lady	packed	her ✓	bags
10	The/A	wife	helped her husband			10	The/A	boy	did ✓	a ✓	handstand

Summary & Interpretation Form

- The fillable form will automatically calculate the results
- You will need to fill in the Audiometric Results and the Conditions portion of the form
- There is an Interpretation and Recommendation section for you to expand on the results and make additional comments about the test results

Show finished Summary & Interpretation!

[Sample Form](#)

A word of caution:

If you have a hearing loss and have difficulty listening in background noise, it may be difficult to do the Auditory Visual parts of this test.

Where do I get the Recorded Functional Listening Evaluation?

- Go to the Supporting Success for Students with Hearing Loss: successforkidswithhearingloss.com
- Search for the Recorded Functional Listening Evaluation
- The Recorded FLE Using Sentences CD or downloadable files are intended as a license for unlimited use by one teacher for the purpose of supporting his/her caseload.

How much does it cost?

- The Recorded Functional Listening Evaluation- CD- \$20 (unlimited use for 1 teacher)
- The Recorded Functional Listening Evaluation Digital Download- \$18 (unlimited use for 1 teacher)
- The Recorded Functional Listening Evaluation for your whole district or Regional Day School Program for the Deaf- \$99
