
**Iowa Speech-Language Services
ASHA National Outcomes Measurement System (NOMS) Report
1997-1998**

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Iowa Speech-Language Services Data Report ASHA National Outcomes Measurement System 1997-1998

I. Introduction

Iowa speech-language pathologists (SLPs) participated in a field test data collection project, the National Outcomes Measurement System (NOMS), for the American Speech-Language-Hearing Association (ASHA) that began October 1, 1997, and ended April 15, 1998. This project was possible through the combined efforts of SLPs in the field, the supervisor/lead SLPs in each area education agency (AEA), the Iowa state consultant of speech-language services, and ASHA.

The following report indicates the tremendous amount of work Iowa SLPs contributed to this national project. Iowa SLPs should be commended for being the largest group of professionals to provide entry and exit data for this type of treatment outcomes data collection information. Although this was a six-month project, participation has provided many links to expanding Iowa's yearly state data report. The project has answered questions for data that needs to be collected as well as data that does not need to be collected. Looking at the project reflectively, the magnitude of the work required a major contribution of time and effort from many professionals. However, the result of the following data and information indicates the wealth of information that will be used in understanding and improving treatment outcomes for students of communication disorders in Iowa's schools. Thank you Iowa SLPs!

II. Field Test Data Collection Project Procedures

The NOMS project began in Iowa with a trainer of trainers model funded by the Department of Education. A group of SLPs were designated and trained from each AEA during a two-day training seminar lead by an ASHA representative. The training focused on procedures for completing forms, answering project questions, and organizing plans to train home-based AEA SLPs.

Upon completion of the two-day seminar, the trainers completed training within their own AEA. The SLP supervisors/leads provided much needed follow-up with monitoring completion of forms, answering ongoing questions, and mailing completed forms to ASHA to meet set deadlines.

Iowa SLPs completed three "bubble" forms for entry and exit data of the project. The forms included: 1) entrance, 2) Functional Status Measures (FSM), and 3) evaluation of services (see Appendices A, B, and C).

Form one. The entrance form, described background information for each student such as gender, race/ethnicity, grade level, primary communication disorder, and Functional Communication Measures (FCMs). ASHA had developed a series of seven point-rating scales, FCMs, to describe a student's communication disorder. Each scale ranged from least functional (level one) to most functional or independent (level 7). The fifteen

different types of FCMs included ten for speech-language pathology and five for audiology/aural habilitation:

Speech-Language Pathology FCMs

- Articulation
- Augmentative Communication Comprehension
- Augmentative Communication Production
- Cognitive Communication
- Dysphagia
- Fluency
- Language Comprehension
- Language Production

Audiology/Aural Habilitation FCMs

- Hearing Sensitivity
- Hearing Loss
- Gain from Amplification
- Hearing Aid Use
- Hearing Aids/Assistive Listening Devices: Operation and Management

Form two. The FSM was completed at the beginning of the project to gather subjective information regarding student progress. Both SLP and classroom teachers completed the FSM form to compare student progress from the perspective of both professionals.

Form three. The evaluation of services was completed to exit the student from the project. This form included information regarding the reason for dismissal, re-scoring the FCMs to indicate student progress, hours of therapy, type of service delivery model used, etc.

All Iowa SLPs completed the required data forms (bubble sheets) for every student on their caseload (with the exception of one AEA). Some AEAs completed data forms in September or as soon as AEA SLP training was completed. The majority of data was entered October 1, 1997, but students were enrolled in the project up to February 1, 1998. Additional students enrolled in speech-language services were entered in the project up to the February first date.

III. Data Analysis

Although the purpose of Iowa's participation in the NOMS project was to field test the data collection system, an extensive amount of data was generated as a result of project involvement. The following report describes major components of the Iowa data that was collected and analyzed but does not include every aspect.

Interpretation of the data for this report is considered preliminary for several reasons. The data collected was a bi-product of the original intent of the project; to field test the NOMS. It is important to remember the data was only collected for a brief six-month period of time. Another important point is that data provided by ASHA in the tables of

this report show within group differences. Further analysis of data needs to be completed and displayed in tables for between group differences, group age level differences, and statistical significance for within and between group differences. Data represented in graph form would have also facilitated ease of interpreting information for all tables. Overall, interpretation of data is considered guarded for the present report with the limitations previously mentioned.

The following data reviewed in this report was organized by 1) major categories of FCM analyses, 2) treatment time components, and 3) the FSM information as reflected from combined student progress data for kindergarten through twelfth grades. ASHA provided data in four other separate grade level reports, kindergarten to third, fourth to sixth, seventh to eighth, and ninth to twelfth grades. However, this report describes the combined totals for kindergarten to twelfth grades.

A. Functional Communication Measure (FCM) Analysis

The FCMs were considered one of the major components of the NOMS project to study the progress or outcomes of Iowa students receiving speech-language services. An FCM level was assigned to each student upon entry and exit from the project, so progress could be analyzed by change in the FCM. Therefore, the FCM data in this report included: 1) progress within each FCM; 2) gender; 3) race/ethnicity; 4) level change from entry to exit; 5) eligibility for special education/related services; and 6) progress by educational placement.

1. FCM: Progress within each FCM (Table 5)

The data reported in Table 5 reflected the progress levels (by number and percentage) assigned to students in the 15 FCMs. Progress was depicted as no progress (no change in FCM level), increased one FCM level, or increased greater than one FCM level. The purpose of reviewing this data was to determine if the type of progress varied within the FCMs. It should be noted data was not displayed in tables for between group FCM data comparisons.

Results of Data

- Most speech-language services students had FCMs for articulation (8,050), language production (6,266), and language comprehension (4,863).
- Approximately half the students with FCMs in the areas of articulation (59%), fluency (55%) and language comprehension (49%), language production (48%), and voice production (54%) increased one or more FCM levels.
- The balance of students with FCMs in the areas of language comprehension and language production showed no progress (no change in FCM level).
- Almost 60% of the students with cognitive communication FCMs showed no progress (no change in FCM level). This is not surprising as it is assumed these students carry a primary label of “mental disability” in some settings.
- A high percentage of students with augmentative communication (65% to 67%) showed no progress (no change in FCM level). This may reflect the complexity and

the severity of communication problems of students requiring augmentative communication.

- Students with hearing impairments and hearing aids showed the least amount of progress overall compared to other FCM areas. This may reflect the significant impact hearing impairment has on the speech, language, and overall communication skills of students.

Weaknesses of Data

- There was no way to determine the severity or the complexity of students' communication problems and those students who received multiple FCM ratings (e.g. in the areas of articulation and language production) by the reported data format.
- The length of time for the data collection was from October 1, 1997, through April 17, 1998. This represents a maximum of six months including winter and spring breaks. Since February 1, 1998, was the last date to enter new students, the data collection period for some students was a minimum of two and-a-half months. Overall, the length of the data collection project was a relatively short period of time.
- Data in tables should have been figured for each column vertically for number and percent to compare the progress between each FCM. Then statistical analysis of the data should have been completed to indicate significant differences between FCMs and the three levels of progress.
- Data represented in graph form would have facilitated ease of interpreting information.

Summary of the Outcomes

- Over half the students with FCMs in the areas of articulation, fluency, language comprehension, language production, and voice production showed progress by increasing one or more levels.
- The balance of students with FCMs in the areas of language comprehension and language production showed no progress (no change in FCM level).

Potential Implications

- Students with language needs may require more intensive and long term therapy for progress to occur. The length of time for this project did not allow this type of data to be collected.
- Are current language interventions adequate to show gains for FCMs within one academic school year?
- Students with hearing impairments and augmentative communication needs made slower progress in changing FCM levels than students with other FCMs. Are the FCMs sensitive enough to measure change for these students?
- Interpretation of data for this table should be guarded since neither the severity of communication needs nor the intensity of therapy provided to individual students to achieve the progress was indicated.

2. FCM: Gender (Tables 12-17)

Student progress by gender and the most frequently occurring FCM is reported in Tables 12 - 17. The purpose of studying this data was to determine if the type of progress for FCMs varied by gender. Progress was depicted as no progress (no change in FCM level), increased one FCM level, or increased greater than one FCM level. ASHA provided data for the seven most frequently occurring FCMs by gender: articulation, language production, language comprehension, fluency, augmentative communication comprehension, and voice production.

Results of Data

Articulation FCM (Table 12)

- Males (59%) and females (58%) showed similar progress for the articulation FCM by increasing one or more levels.
- Both males (42%) and females (43%) showed similar percent of no progress (no change in FCM level).

Language Production FCM (Table 13)

- Males (47%) and females (50%) showed similar progress for the language production FCM by increasing one or more levels.
- Both males (53%) and females (50%) showed similar percents for no progress (no change in FCM level).

Language Comprehension FCM (Table 14)

- Males (48%) and females (48%) showed the same progress for the language comprehension FCM by increasing one or more levels.
- Both males (51%) and females (52%) showed similar percents of no progress (no change in FCM level).

Fluency, Rate, or Rhythm FCM (Table 15)

- Seventy-nine percent of the fluency, rate or rhythm FCMs were for males. This gender dominance was consistent with past research and literature on dysfluency.
- Males (56%) and females (56%) showed the same percent of progress for the fluency FCM by increasing one or more levels.
- Males (45%) and females (44%) showed similar percents for no progress (no change in FCM level).

Augmentative Communication Comprehension FCM (Table 16)

- More males (60%) than females (40%) had augmentative communication comprehension FCMs.
- Males (31%) and females (38%) showed similar progress for the augmentative communication comprehension FCM by increasing one or more levels.
- Males (69%) and females (62%) showed similar percents of no progress (no change in FCM level).

Voice Production FCM (Table 17)

- More males (65%) than females (35%) had voice production FCMs.

- Females (60%) showed a higher percent of progress than males (50%) for the voice production FCM by increasing one or more levels.
- Males (50%) showed a higher percent of no progress (no change in FCM level) than females (40%).

Weaknesses of Data

- It was difficult to determine the severity or the complexity of the student's communication problems and how these aspects related to progress or change in FCM levels.
- Data was not available for all FCMs. For example, there was not a table depicting progress in augmentative communication production by gender because the number of students was not large enough to report this data (ASHA policy not to report cell size less than 25).
- It was noted the total number depicted in Table 16 for progress in augmentative communication comprehension was not the same as that previously reported on Table 5 (N=308 versus N=310). Since all students should be included in either the male or female gender category, this data appears questionable.
- Data for gender synthesized in one table would have facilitated ease of comparing types of FCMS for Tables 12 through 17.

Summary of the Outcomes

- More than twice as many males as females had articulation and fluency FCMs.
- More males than females had FCMs for language production, language comprehension, augmentative communication comprehension, and voice production.
- Males and females made similar progress for articulation, language production, language comprehension, and fluency FCMs. However, for both males and females, more articulation and fluency FCMs increased greater than one or more levels than the language production or language comprehension FCMs.
- The students with articulation and fluency FCMs were more likely to increase greater than one or more levels for both genders from entry to exit.
- The highest percent of FCMs not progressing or changing levels was for augmentative communication comprehension. It was also the FCM most likely not to increase greater than one or more FCM levels.
- The voice production FCM showed the largest percent of difference (10%) between the male and female groups for no progress and increasing more than one FCM level.

Potential Implications

- Results of FCMs by gender indicated students with language disorders did not increase FCM levels as readily as other types of FCMs. Students with language needs may require longer and more intensive therapy for progress to be measured by the FCM levels.
- It was noted more males than females received FCMs for each area of communication represented; yet, the greatest percentage of SLPs working in the schools are females.
- Does the gender issue have implications for the following?
 - School and social expectation for boys
 - Identification of students receiving speech-language services

- Grouping of students in therapy
- Instructional approaches (recent research shows teachers treat boys differently than girls in the classroom)
- Prevention programs and training for parents
- What was the trend for gender 20 or 30 years ago? How do SLPs impact decreasing the number of males with communication disorders?

3. FCM: Race/Ethnicity (Tables 2, 3, and 18-23)

Three types of FCM data were reviewed for race/ethnicity: 1) frequency of FCMs used; 2) frequency of the primary communication disorder; and 3) progress in FCM levels. The purpose of studying this data was to assess progress by race/ethnicity. However, the number of students for some race/ethnic groups was relatively few in Iowa, limiting interpretations.

3. (a) Race/Ethnic Frequency of FCMs (Table 2)

The most frequently used FCM for each race/ethnic group of Black, Asian, White, Native American, Hispanic, and other is reported in Table 2. The purpose of studying this data was to determine if the type and percent of assigned FCMs varied within different race/ethnic groups.

Results of Data

- The six most frequently used FCMs for any race/ethnic group included: articulation, language production, language comprehension, fluency, augmentative communication production, and cognitive communication.
- FCMs were used more frequently based on the size of the race/ethnic population for the state, as indicated by Table 2. For example, articulation FCMs were used more frequently for White (93%); then Black (3%), Hispanic (1.5%), Asian (1.4%), and Native American (0.5%).
- The types of FCMs used mirrored the prevalency of various types of communication disorders with articulation disorders being more prevalent than language disorders; language disorders being more prevalent than fluency disorders; etc.

Weaknesses of Data

- The data reported in Table 2 represents the race/ethnic group's FCMs only for those receiving speech-language services, not the proportion of students by race/ethnic group. This is important to note when interpreting the data since the total race/ethnic group population for the entire state would be needed to compare proportions of FCMs between each race/ethnic groups.
- The data in Table 2 does not indicate the percent of most frequently used FCMs within each race/ethnic group. For example, the Table column numbers should be added vertically and divided into the FCM totals to determine this information:

Black Race/Ethnicity, N=897

Articulation FCM, N=226 divided by 897 = 25%

Language production FCM, N=325 divided by 897 = 36%

Language comprehension FCM, N=272 divided by 897 = 30%
Fluency FCM, N=26 divided by 897 = 3%
Augmentative communication FCM, N=26 divided by 897 = 3%
Cognitive communication FCM, N=22 divided by 897 = 2%

This data indicated for the Black race/ethnic group, language FCMs were more frequently assigned than articulation FCMs.

Summary of the Outcomes

- FCM data followed trends of state race/ethnic populations with Iowa's largest population being White then Black, Hispanic, Asian, Native American, and other.
- FCMs followed a trend of the larger the race/ethnic group, the higher the number (percentage) of FCMs used within groups.

Potential Implications

- Will the percentage for types of FCMs used within race/ethnic groups change in five or ten years?
- Are FCMs adequately describing different race/ethnic group's communication skills?

3. (b) Race/Ethnicity frequency of primary communication disorder (Table 3)

Table 3 indicates the five most frequently used categories to describe the primary communication disorder for each race/ethnic group of Black, Asian, White, Native American, Hispanic, and other. (See Appendix A, field number 13, for reference of primary communication disorder terms provided by ASHA). The purpose of reviewing this data was to determine if the frequency of the assigned primary communication disorder varied between race/ethnic groups. (It should be noted the primary communication disorder was sometimes SLP judgement, not an assigned "label" since most Iowa AEAs have noncategorical guidelines for special education entitlement.)

Results of Data

- The five most frequently used categories to describe primary communication disorders for all race/ethnic groups included: developmental speech, language production, language comprehension, organization/language/cognition/pragmatics, and cognitive communication (mental disability).
- The White race/ethnic group dominated receiving the highest percentage of most frequently used categories to describe the primary communication disorders, then Black, Hispanic, Asian, Native American, and other.

Weaknesses of Data

- Since Iowa's dominate race/ethnicity population is White, then Hispanic, Asian, Native American, and other, the frequency of the primary communication disorder by this chart has limited value since it reflects the number or size of the race/ethnicity group in the state.

- The data does not indicate the percent of most frequently used primary communication disorder within each race/ethnic group. For example, the table column numbers should be added vertically and divided into the category total:
 Black Race/Ethnicity, N=366
 Developmental speech, N=142 divided by 366 = 40%
 Language production, N=97 divided by 366 = 27%
 Language comprehension, N=129 divided by 366 = 35%
 Organization/language/cognition/pragmatics, N=60 divided by 366 = 16%
 Cognitive communication, N=38 divided by 366 = 11%.

This data indicated for the Black race/ethnic group, that developmental speech was the most frequent occurring primary communication disorder, then language comprehension, language production, organization/language/cognition/pragmatics, and last cognitive communication. This data was not consistent for the frequency for type of FCMs used; language FSMs were more frequently used than developmental speech FCMs.

Summary of the Outcomes

- Data followed predictable trends for categories used to describe primary communication disorders for race/ethnic groups since developmental speech disorders occur more frequently than language disorders.
- The developmental speech category was indicated more often than any language category for all race/ethnic groups, except for Hispanic. Articulation and language categories were indicated similarly. Also, it was noted for the White race/ethnicity group, the developmental speech category was indicated three times as often as any language category.

Potential Implications

- The primary communication disorder category has minimal usefulness in Iowa with AEAs using noncategorical special education guidelines.
- Can the same information be obtained through FCMs and the distinction of speech-language impairment only and special education/related services?

3. (c) Race/Ethnicity progress in FCMs (Tables 18-23)

The level of FCM progress students made within each race/ethnic group is shown in Tables 18-23. Progress was described from entrance to exit as: no progress (did not change FCM levels), increased one FCM level, or increased greater than one FCM level. The data was only compiled by ASHA for the most frequently occurring FCMs (articulation, language production, language comprehension, fluency, augmentative communication comprehension, and voice production) by race/ethnicity. The purpose of reviewing this data was to determine if the level of progress varied within different race/ethnic groups.

Results of Data

Articulation FCM (Table 18)

Progress for the articulation FCM was relatively similar within each race/ethnic group for no progress (no FCM level change), increased one FCM level, or increased greater than one FCM level (see Table 18). Typically, the race/ethnic groups did not change FCM levels (41 to 49%) from entry to exit or increased one FCM level (32 to 44%).

- The White group was the only race/ethnicity that had a larger percent of students increasing one FCM level (44%) in comparison to no change of FCM levels (41%).
- The Native American group was the only race/ethnicity that had similar percents for increased one FCM level (30%) and increased greater than one FCM level (25%).

Language Production FCM (Table 19)

The range of progress for the language production FCM varied more for each race/ethnic group for no progress or no FCM level change (46 to 65%), increased one level (25 to 46%), or increased greater than one level (5 to 10%) as shown in Table 19.

- Each race/ethnic group followed similar trends with the greatest percent of students not changing FCM levels, to only increased one FCM level, and last increased greater than one FCM level.
- The Native American group had the highest percent (65%) for students not changing FCM levels.

Language Comprehension FCM (Table 20)

The range of progress for the language comprehension FCM was relatively similar for each race/ethnic group for no progress or no FCM level change (51 to 61%), increased one level (28 to 41%), or increased greater than one level (7 to 17%) as indicated in Table 20.

- Each race/ethnic group followed similar trends with the greatest percent of students not changing FCM levels, to only increased one FCM level, and last increased greater than one FCM level.

Fluency, Rate, or Rhythm FCM (Table 21)

The range of progress for the fluency, rate, or rhythm FCM was relatively similar for two race/ethnic groups. White and African American groups made no progress or no FCM level change (42 to 45%), increased one FCM level (38 to 39%), or increased greater than one FCM level (17 to 19%) as shown in Table 21. It should be noted that data was only available for two groups; ASHA policy not to report data for cell sizes less than 25.

- Each race/ethnic group followed similar trends with the greatest percent of students not changing FCM levels, to only increased one FCM level, and last increased greater than one FCM level.

Augmentative Communication Comprehension FCM (Table 22)

Progress for the augmentative communication comprehension FCM varied for no progress or no FCM level change (66%), increased one level (28%), or increased greater than one level (6%) (see Table 22). Only the White race/ethnic group data was available for this FCM; ASHA policy not to report data for cell sizes less than 25.

- Sixty-six percent of the students for the augmentative communication comprehension FCM did not change FCMs levels.
- Similar trends were followed with the greatest percent of students not changing FCM levels, to only increased one FCM level, and last increased greater than one FCM level.

Voice Production FCM (Table 23)

Progress for the voice production FCM varied for no progress or no FCM level change (47%), increased one level (34%), or increased greater than one level (19%) as noted in Table 23. Only the White race/ethnic group statistics were available for this FCM; ASHA policy not to report data for cell sizes less than 25.

- Similar trends were followed with the greatest percent of students not changing FCM levels, to only increased one FCM level, and last increased greater than one FCM level.

Weaknesses of Data

- The length of time from entry to exit (October to April) likely contributed to the 40 to 66% range of no change in FCM levels.
- The varying percent of progress for race/ethnicity and the language FCMs may be correlated to social, cultural, or economic issues not addressed in the collection of data. For example, 65% of the Native Americans were noted as not changing language FCM levels but 25% increased more than one level for the articulation FCM.
- The tables needed to have data figured vertically to compare the total race/ethnic between group differences for the three different levels of progress.
- The interpretation of the race/ethnic data is limited for the fluency, augmentative, and voice FCMs since group data was not reported (ASHA policy not to report cell sizes less than 25).
- The data would have been easier to interpret with the use of graphs.
- The data was not reported to indicate significant differences between or within the groups for the various level changes and FCMs.

Summary of the Outcomes

- Race/ethnic groups generally made similar progress for the three levels of no progress (no FCM level change), increased one level, or increased greater than one level for the various FCMs.
- Data followed predictable trends of progress expected for the length of the project from entrance to exit (six month period of time and less for some data entered).

Potential Implications

- Data currently reported by this project indicated there were no major differences between race/ethnic groups changing FCM levels. However, this data was not analyzed to indicate significant differences, so interpretations are limited. This type of data has the potential of indicating whether or not implemented strategies effect FCM level changes specific to race/ethnic groups.

- Would a longer period of time (e.g., two school years) for the project indicate different results and change of FCMs between the race/ethnic groups?
- Are the FCMs sensitive enough to adequately indicate changing FCM levels for race/ethnic groups?

4. FCM: Frequency and change of level from entry to exit

The number of students and the group mean score level change for each FCM is reported in Tables 48-62. The purpose of studying this data was to assess the most frequently assigned FCM level for students and the greatest group mean score level changes. It should be noted each FCM had seven different levels to describe the student's communication skills.

Results of Data

Articulation FCM Frequency and Level Changes (Table 48)

- Most students entered the project at an articulation FCM 5 level (3,369), then FCM 6 (2,110), and FCM 4 (1,557). The least number of students entered at an FCM 1 level (59).
- The most articulation progress was noted for FCM 2 (1.3), FCM 3 (1.3), and FCM 4 levels (1.0), whereby the group mean score increased at least one level.
- The least articulation progress was noted for FCM 6 (0.3) and FCM 5 level (0.7).

Augmentative Communication Comprehension FCM Frequency and Level Changes (Table 49)

- Most students entered the project at an FCM 3 level (83), then FCM 2 (79), FCM 4 (56), and FCM 5 (52). The least number of students entered at an FCM 1 level (16).
- The most augmentative communication comprehension progress was noted for FCM 3 (.05) and FCM 2 levels (0.4); the least change of progress for FCM 4 (0.3) and FCM 5 levels (0.3). No group mean score increased or changed one (1.0) FCM level.

Augmentative Communication Production FCM Frequency and Level Changes (Table 50)

- Most students entered the project at an FCM 3 level (183), then FCM 2 (144), and FCM 4 (100). The least number of students entered at FCM 6 level (15).
- The most augmentative communication production progress was noted for FCM 3 (.05), FCM 1 (0.5), and FCM 2 levels (0.4), however, no group mean score increased one (1.0) level.
- The least augmentative communication production progress was noted for FCM 5 level (0.1).

Cognitive Communication FCM Frequency and Level Changes (Table 51)

- Most students entered the project at an FCM 4 (117) and FCM 5 level (117), then FCM 3 (111), and FCM 2 (74). The least number of students entered at an FCM 1 level (4).
- The most cognitive communication progress was noted for FCM 3 level (.07), FCM 2 (0.6), and FCM 4 (0.5), however, no group mean score increased one (1.0) level.

- The least cognitive communication progress was noted for FCM 6 level; no change was even reported.

Dysphagia FCM Frequency and Level Changes (Table 52)

- Most students entered the project at FCM 3 (7), FCM 4 (2), FCM 6 (1), and FCM 1 (1) levels.
- No other data was available for this table with cell sizes less than 25 (ASHA policy).

Fluency FCM Frequency and Level Changes (Table 53)

- Most students entered the project at a fluency FCM 5 (174), then FCM 4 (153), and FCM 6 level (137). The least number of students entered at FCM 1 level (2).
- The most fluency progress was noted for FCM 2 (1.3) and FCM 3 levels (1.2). Both group mean scores increased at least one (1.0) FCM level.
- The least fluency progress was noted for FCM 6 level (0.2).

Language Comprehension FCM Frequency and Level Changes (Table 54)

- Most students entered the project at an FCM 5 (2035), then FCM 4 (1339), and FCM 3 level (669). The least number of students entered at FCM 1 level (45).
- The most language comprehension progress was noted for FCM 3 level (1.0) and the group mean score increased at least one (1.0) level.
- The least language comprehension progress was noted for FCM 6 (0.2) and FCM 5 levels (0.4).

Language Production FCM Frequency and Level Changes (Table 55)

- Most students entered the project at an FCM 5 level (2,793), then FCM 4 (1,685), and FCM 6 (937). The least number of students entered at an FCM 1 level (56).
- The most language production progress was noted for FCM 2 (0.9) and FCM 3 levels (0.9), however, the group mean score did not increase one (1.0) FCM level.
- The least language production progress was noted for FCM 6 level (0.3).

Voice Production FCM Frequency and Level Changes (Table 56)

- Most students entered the project at an FCM 5 level (63), then FCM 4 (41), and FCM 6 (36). The least number of students entered at an FCM 1 level (4).
- The most voice production progress was noted for FCM 4 level (0.8), but the group mean score did not increase one (1.0) level.
- The least voice production progress data was not available (cell sizes less than 25 were not reported by ASHA).

Central Auditory FCM Frequency and Level Changes (Table 57)

- Most students entered the project at an FCM 3 level (38), then FCM 5 (16), and FCM 6 (14). The least number of students entered at FCM 1 level (1).
- The most central auditory progress was noted for FCM 1 level (1.4), whereby the group mean score increased one (1.0) level.
- No other group mean change data was reported (cell sizes less than 25 were not reported by ASHA).

Hearing Sensitivity FCM Frequency and Level Changes (Table 58)

- A total of 88 students were reported for the hearing sensitivity FCM.
- Most students entered the project at an FCM 3 level (22 students), then FCM 2 (16 students), and FCM 5 (13 students). The least number of students entered at an FCM 1 level (4 students).
- No group mean change data was reported (cell sizes less than 25 were not reported by ASHA).

Hearing Loss FCM Frequency and Level Changes (Table 59)

- Most students entered the project at an FCM 2 level (20), then FCM 5 (14), and FCM 6 (10). The least number of students entered at FCM 4 (8).
- No group mean change data was reported (cell sizes less than 25 were not reported by ASHA).

Gain from Amplification FCM Frequency and Level Changes (Table 60)

- Most students entered the project at an FCM 5 level (28), then FCM 6 (18), and FCM 4 (7). The least number of students entered at FCM 2 level (2).
- The group mean score did not change for FCM 5 level.
- No group mean score data was reported for the other levels (cell sizes less than 25 were not reported by ASHA).

Hearing Aids: Use/Communication Strategies FCM Frequency and Level Changes (Table 61)

- Most students entered the project at an FCM 5 level (31), then FCM 4 (19), and FCM 6 (14). The least number of students entered at FCM 1 level (1).
- The hearing aid strategies change for FCM 5 level (0.3) was the only reported group mean score.
- No group mean score data was reported for the other levels (cell sizes less than 25 were not reported by ASHA).

Hearing Aids/ALD: Operation and Management FCM Frequency and Level Changes (Table 62)

- Most students entered the project at an FCM 6 level (16), then FCM 5 (13), and FCM 4 (10). The least number of students entered at FCM 1 level (1).
- No group mean score data was reported (cell sizes less than 25 were not reported by ASHA).

Weaknesses of Data

- Group mean score data was often not reported due to the cell size being less than 25. Since the prevalence for some communication disorders decreases with frequency such as for fluency, hearing, etc., it seemed futile to enter such data if it was not analyzed. If an entire state sample had fewer than 25 students for the cell size, it is doubtful this data will be analyzed except at the national level. This does not lend much help in studying treatment outcomes for states, districts or schools.

- Data represented in bar graph form for each FCM with the number of students for each level would facilitate ease of interpreting information. This same information would also need to be duplicated then for the FCM group mean change. Also, it would be beneficial to have the chart data combined in graph form to compare the various FCMs and level changes.

Summary of the Outcomes

Articulation

- Students making the most progress entered the project at an FCM 2, 3, or 4 level; the more severe students.
- The majority of students were entered at an FCM 4, 5, and 6 level.

Augmentative Communication

- There was less group mean progress for both augmentative communication comprehension and production FCMs as compared to other types of FCM data. The most group mean change was 0.5, the lowest reported for any FCM with the exception of the hearing conservation data.
- Most students were entered at FCM 2 and 3 levels for augmentative communication.

Cognitive Communication

- Most students were entered at an FCM 3, 4, and 5 level.
- The most gain for these students was for the FCM 3 level.

Dysphagia

- Iowa has relatively few students in the schools with dysphagia FCMs, a total of 11 were entered.
- Most students entered at an FCM 3 level (progress was not reported by ASHA due to cell size).

Fluency

- Students making the most progress were the more severe or FCMs 2 and 3. In addition, the age range of these students would be important.
- Many students, 24%, entered with an FCM 6 and virtually made no progress. Does this result have implications to discontinue intervention with students reaching FCMs of five for fluency?
- Eighty percent of fluency students had an FCM 4, 5, or 6; the majority of fluency students were not very severe cases.

Language Comprehension

- Students making the most progress had an FCM 3. This was also the second highest incidence group. The age range of these students should be known to increase the interpretation value of this data.
- The groups making the least progress were the students with the least progress to make. The students were already at an FCM 5 and 6 level.
- Students (12%) with an FCM 6 made virtually no progress. Does this mean intervention should be discontinued at an FCM 5 level?

Language Production

- This was the second largest category of students served with the articulation group being first.
- The two groups making the most progress were the FCM 2 and 3 level students.
- No language production FCM made a gain of one level or more during the study.
- The third largest group was the FCM 6 level and these students made the least amount of gain. Does this mean students continue too long in therapy? Does it just take a long time to go from an FCM 6 to 7 level? Are SLPs using appropriate strategies to intervene?

Voice Production

- The total number of students reported for Table 56 is incorrect. ASHA reported 278 students in this group and the correct total number should be 171.
- Of the four major areas of communication (articulation, language, voice, and fluency), voice production was by far the smallest group.
- Eighty-two percent of the students in this category had an FCM 4 or greater, meaning these were very mild students.

Auditory Processing

- This was a very small group with a total of only 91 students statewide. However, it should be noted 53% of these students were rated with an FCM 3 or less indicating a relatively high severity.

Hearing Conservation FCMs (Tables 58-62)

- There were minimal changes for students with any type of hearing disorder as indicated by Tables 58-62.
- The most amount of change, as it occurred, was noted for students entering the project at an FCM 2, 3, or 4 level. These students represented high to moderate levels of severity.
- Do the FCM descriptions and levels represent a learning curve with less room for improvement at the end and more room for improvement in the middle? Do the FCM changes reflect SLP skills and training are better for students at FCM 2, 3, and 4 levels and less productive for FCM 1, 5, and 6 levels?

Potential Implications

- Articulation (FCM 2 and 3), fluency (FCM 2 and 3), and language comprehension (FCM 3) were the only FCMs that made whole group mean level changes across all the data results. What type of interventions, schedule of therapy, age of student, etc. occurred with these students? Why the success with these levels and FCMs?
- Students made minimal or relatively no progress for FCMs in categories relating to hearing conservation. Are therapy strategies utilized with these students effective to warrant change? Are the FCMs sensitive enough to demonstrate change for students of hearing impairment?
- Will the change of FCM levels increase more quickly in five or ten years if interventions improve or provided at younger ages?

- Are FCMs sensitive enough to describe change within a six-month time period? Will data results be different with a longer period of time implemented for two school years instead of one?

5. FCM: Eligibility for special education/related services (Tables 24-30)

The level of progress students made for each FCM by special education/related service groups is shown in Tables 24-30. The special education/related service groups as defined by ASHA included: Autism, deafness, hearing impairment, mental disability, multiple disabilities, orthopedic impairment, other health impairment, serious emotional disturbance, specific learning disability, speech-language impairment only, traumatic brain injury, visual impairment, and other (see Appendix A). The three levels of progress from entrance to exit included: no progress (no FCM level change), increased one FCM level, or increased greater than one FCM level. The data was compiled by ASHA for the most frequently occurring FCMs (articulation, language production, language comprehension, fluency, augmentative communication comprehension, and voice production). The purpose of reviewing this data was to determine if the level of progress varied by groups. It is important to note that all comparisons are within groups, the data was not analyzed in charts between group differences.

Results of Data

FCM: Articulation by Special Education/Related Service (Table 24)

The range of progress for the articulation FCM varied within each special education/related service group for no progress (36 to 77%), increased one level (12 to 46%), or increased greater than one level (8 to 18%) as shown in Table 24.

- Most articulation FCMs were for speech-language impairment only (4,905), specific learning disability (1,383), and mental disability (1,010). Fewer articulation FCMs were noted for students of visual impairment (2), traumatic brain injury (14), other health impairment (14), orthopedic impairment (26), autism (49), and deafness (65).
- Change in FCM level data was not reported for special education services of other health impairment, traumatic brain injury, or visual impairment (ASHA policy not to report data with cell sizes less than 25). This indicated very few students have FCMs for these eligible special education/related services.
- Speech-language only students made the most change by increasing one level (46%) or greater than one level (18%).
- Specific learning disability students made the next greatest amount of change by increasing one level (43%) or greater than one level (11%).
- Deaf (72%) and hearing impaired (57%) students were not as likely to change FCM levels in the six-month project time span. Also, they were less likely to increase one or more levels.
- Special education/related services students for autism (55%), mental disability (51%), multiple disabilities (56%), orthopedic impairment (77%), and serious emotional disturbance (55%) were likely not to change FCM levels for the six-month project time span.

FCM: Language Production by Special Education/Related Service (Table 25)

The range of progress for the language production FCM varied more within each special education/related service group for no progress or no FCM level change (44 to 77%), increased one level (20 to 48%), or increased greater than one level (3 to 15%) as shown in Table 25.

- Each special education/related service group followed similar trends with the greatest percent of students not changing FCM levels, to only increased one FCM level, and last increased greater than one FCM level.
- The hearing impaired had the highest percent (77%) for students not changing within language production FCM levels.
- Most students with language production FCMs were for specific learning disability (1,913) speech-language impairment only (1,708), mental disability (1,517), and autism (245). Fewer students were noted for language production FCMs of visual impairment (3), orthopedic impairment (14), other health impairment (15), traumatic brain injury (30), and deafness (69).
- FCM change data was not reported for other health impairment, orthopedic impairment, or visual impairment (ASHA policy not to report data with cell sizes less than 25). This indicated very few students have language production FCMs for these eligible special education/related services.
- Speech-language impairment only (41%) and specific learning disability students (40%) made the most change by increasing one FCM level.
- Speech-language only (15%), specific learning disability (10%), and serious emotional disturbance (10%) students made the most gain for increasing greater than one FCM level.
- Deafness (77%), multiple disabilities (61%), mental disability (60%), and hearing-impaired (60%) groups were not as likely to change FCM levels in the six-month project time span. Also, they were less likely to increase one or more levels.

FCM: Language Comprehension by Special Education/Related Service (Table 26)

The range of progress for the language comprehension FCM varied more within each special education/related service group for no progress (42 to 69%), increased one level (22 to 44%), or increased greater than one level (2 to 19%) as shown in Table 26.

- Each special education/related service followed similar trends with the greatest percent of students not changing FCM levels, to only increased one FCM level, and last increased greater than one FCM level.
- The deafness group had the highest percent (69%) for students not changing within language comprehension FCM levels.
- Most students with language comprehension FCMs were for specific learning disability (1,547) speech-language impairment only (1,072), mental disability (1,296), multiple disabilities (218), and autism (245). Fewer students were noted for language comprehension FCMs of visual impairment (4), orthopedic impairment (11), other health impairment (16), traumatic brain injury (27), and deafness (68).
- FCM change data was not reported for other health impairment, orthopedic impairment, or visual impairment (ASHA policy not to report data with cell sizes less

than 25). This indicated that very few students have language comprehension FCMs for these eligible special education/related services.

- Serious emotional disturbance (44%), specific learning disability students (40%) and speech-language only (41%) made the most change by increasing one FCM level one.
- Traumatic brain injury (19%), speech-language only (16%), autism (11%), specific learning disability (10%), and serious emotional disturbance (9%) students made the most gain within groups for increasing greater than one FCM level.
- Deaf (70%), hearing impaired (61%), mentally handicapped (60%), traumatic brain injury (59%), and multiple disabilities (57%) students were not as likely to change FCM levels in the six-month project time span. Also, they were less likely to increase one or more levels.

FCM: Fluency by Special Education/Related Service (Table 27)

The range of progress for the fluency FCM varied within each special education/related service group for no progress or no FCM level change (42 to 59%), increased one level (28 to 40%), or increased greater than one level (14 to 18%) as shown in Table 27. It should be noted that data was only available for three groups: speech-language impairment only, specific learning disability, and mental disability (ASHA does not report data for cell sizes under 25).

- Each special education/related service followed similar trends with the greatest percent of students not changing FCM levels, to only increased one FCM level, and last increased greater than one FCM level.
- The group of mental disability had the highest percent (59%) for students not changing within fluency FCM levels.
- Most students with fluency FCMs were for speech-language impairment only (314), specific learning disability (121), and mental disability (80). Less than 10 students were noted for the other groups.
- Fluency FCM change data was not reported for other groups. This indicated very few students have fluency FCMs for these special education/related services.
- Students of speech-language only (40%) and specific learning disability (38%) made the most change by increasing one fluency FCM level. Students of mental disability (28%) increased one fluency FCM level too.
- Students of speech-language only (18%), specific learning disability (17%), and mental disability (14%) made gains increasing greater than one FCM level.

FCM: Augmentative Communication Comprehension by Special Education/Related Service (Table 28)

The range of progress for the augmentative communication comprehension FCM varied more within each special education/related service group for no progress or no FCM level change (64 to 80%), increased one level (20 to 32%), or increased greater than one level (3 to 8%) as shown in Table 28. It should be noted that data was only available for four groups: multiple disabilities, mental disability, deafness, and autism (ASHA policy not to report data for cell sizes under 25).

- Each special education/related service followed similar trends with the greatest percent of students not changing FCM levels, to only increased one FCM level, and last increased greater than one FCM level.
- The deafness group had the highest percent (80%) for students not changing within the augmentative communication comprehension FCM levels.
- Most augmentative communication comprehension FCMs were for multiple disabilities (90), mental disability (86), deafness (50), and autism (36). This indicated very few students have augmentative communication comprehension FCMs for other special education/related services.
- Multiple disabilities (32%) and autism (31%) made more change increasing one FCM level.
- Mental disability students (8%) made more gain for increasing greater than one FCM level. Fewer students of multiple disabilities (3%) and autism (6%) made more than one FCM level gains.
- All four groups, deafness (80%), mental disability (67%), multiple disabilities (64%) and autism (64%) were not likely to make FCM level changes in the six-month project time span. Also, they were not likely to increase greater than one level.

FCM: Voice Production by Special Education/Related Service (Table 29)

The range of progress for the voice production FCM was similar within each special education/related service group for no progress (44 to 49%), increased one level (30 to 42%), or increased greater than one level (15 to 23%) as shown in Table 29. It should be noted that data was only available for four groups: speech-language impairment only, specific learning disability, multiple disabilities, and mental disability (ASHA policy not to report data for cell sizes under 25).

- Each special education/related service followed similar trends with the greatest percent of students not changing FCM levels, to only increased one FCM level, and last increased greater than one FCM level.
- Most students with voice production FCMs were for speech-language impairment only (115), specific learning disability (48), mental disability (41), and multiple disabilities (27). Fewer than 11 students were noted for voice production FCMs within the other special education/related services.
- FCM level change data was not reported for other special education/related services (ASHA policy not to report data with cell sizes less than 25). This indicated that very few students have voice production FCMs with other eligible special education/related services.
- Specific learning disability (42%), mental disability (37%), speech-language impairment only (36%), and multiple disabilities (30%) increased one FCM level.
- Speech-language only (23%), multiple disabilities (22%), mental disability (15%), and specific learning disability (15%) students made gains within groups for increasing greater than one FCM level.

Weaknesses of Data

- The length of time from entry to exit (October to April) may have contributed to the large percent of groups not changing FCM levels.

- The tables should have data totals vertically to compare between special education/related services group data for the three different levels of progress.
- The interpretation of several special education specific group data was limited because cell size was too small (ASHA policy not to report cell sizes of less than 25).
- The eligible special education/related service of “other” had no value not knowing descriptors of the term.
- The tables were not easily interpreted. The use of double dark lines to separate the columns would have been helpful reading the tables.
- It would have been helpful to have data for each FCM aligned with the specific eligible special education/related service group i.e., autism with FCM data for articulation, language, voice, etc.
- The data was not reported with any statistical analysis to indicate significant differences within or between the groups for the various level changes and FCMs.

Summary of the Outcomes

- Eligible special education/related services generally do not make similar progress for the three levels of no progress (no change in FCM level), increased one FCM level, or increased greater than one FCM level.
- Data followed predictable trends of progress expected for the length of the time of the project from entrance to exit (six month period of time and less for some data entered).

Articulation

- The majority of articulation FCMs were used for speech-language impairment, specific learning disability, and mental disability.
- Most FCM level changes were made by speech-language impairment only, then by specific learning disability students.
- All other special education/related services groups were more than 50% likely not to make FCM level changes within the six-month time period of the project.

Language Production

- The majority of language production FCMs were used for speech-language impairment, specific learning disability, and mental disability.
- Hearing impaired were most likely not to change FCM levels.
- Most FCM level changes were made by speech-language impairment only, then by specific learning disability students.
- All other special education/related services groups were more than 50% likely not to make FCM level changes within the six-month time period of the project.

Language Comprehension

- The majority of language comprehension FCMs were used for speech-language impairment, specific learning disability, and mental disability
- The deafness group were most likely not to change FCM levels.
- Most FCM level changes were made by students of serious emotional disability, specific learning disability, and then by speech-language impairment only.

- All other special education/related services groups were more than 50% likely not to make FCM level changes within the six-month time period of the project.

Fluency

- The majority of fluency FCMs were used for speech-language impairment, specific learning disability, and mental disability.
- Most FCM level changes were made by speech-language impairment only, then by specific learning disability students.
- Students of mental disability were most likely not to change FCM levels.

Augmentative Communication Comprehension

- The majority of augmentative communication comprehension FCMs were used for multiple disability, mental disability, and deafness.
- Students of deafness were most likely not to change FCM levels.
- Most FCM level changes were made by multiple disability, then by autistic students.
- All groups were more than 50% likely not to make FCM level changes within the six-month time period of the project.

Voice Production

- The majority of voice production FCMs were used for speech-language impairment, specific learning disability, and mental disability.
- Specific learning disability and mental disability students made most FCM level changes.
- The groups had a range of 42-49% likelihood not to make FCM level changes within the six-month time period of the project.

Potential Implications

- Those students having multiple or more severe special education needs do not make progress as readily as less severe students. Are the FCMs sensitive enough to show change for all eligible special education/related services students? Do current interventions adequately impact progress?
- More data needs to be collected and studied over a longer period of time for these groups. Generalizations are difficult to make with the limited time frame of the project and newness of the developed FCMs.
- Would a longer period of time of two school years for the project indicate different results and change of FCMs between the special education/related services groups?
- Results of this data indicated the majority of Iowa caseloads provided speech-language services for speech-language impairment only. However, previous state data has indicated this trend has changed over the last ten years with more multiple handicapped special education students being served. This type of data cannot be reflected in this report until more years of data are collected.

6. FCM: Progress by educational placement (Tables 39-44)

The students' FCM progress for six types of educational placement is presented in tables 39 through 44. Educational placement was defined by ASHA as the type of classroom

the student received the majority of her/his education. The six types of educational placement included:

- 1) Regular education with SLP pull-out services;
- 2) Regular education with SLP classroom services;
- 3) Special education with SLP pull-out services;
- 4) Special education with SLP classroom services;
- 5) Home/hospital school; and
- 6) Other.

The level of FCM progress was described as: no progress (no FCM level change), increased one FCM level, or increased greater than one FCM level. The data was compiled by ASHA for the most frequently occurring FCMs (articulation, language production, language comprehension, fluency, augmentative communication comprehension, and voice production). The purpose of reviewing this data was to determine if the type of educational placement influenced increasing of FCM levels. It is important to note that all comparisons are for within group changes, the table data was not analyzed for between group differences.

Results of Data

Articulation Progress by Educational Placement (Table 39)

- The range of progress for the articulation FCM varied within each educational placement for no progress (36 to 55%), increased one level (36 to 50%), or increased greater than one level (9 to 17%) as shown in Table 39.
- Most articulation FCMs were provided for students in regular education (5,834) or special education (1,691) with SLP pull-out services. In comparison, few special education (310) and regular education (143) FCMs were provided with SLP classroom only services.
- Students receiving FCMs in regular education with SLP pull-out and classroom services were more likely to increase within groups one FCM level (45% and 50%).
- Students in regular education with SLP pull-out services made the most within group change by increasing greater than one level (17%).
- Students receiving FCMs in special education with SLP classroom services (55%) were not as likely to change FCM levels in the six-month project time span. Also, they were less likely to increase one or more levels.
- Change in FCM level data was not reported for the home/hospital school educational setting (ASHA policy not to report data with cell sizes less than 25). Only eight students with articulation FCMs were reported in the home/hospital school educational setting.

Language Production Progress by Educational Placement (Table 40)

- The range of progress for the language production FCM varied within each educational placement for no progress (46 to 60%), increased one level (34 to 44%), or increased greater than one level (7 to 13%) as shown in Table 40.

- Most language FCMs for students in regular education (2849) or special education (2313) were provided with SLP pull-out services. In comparison, fewer special education (820) and regular education (213) FCMs were provided with SLP classroom services.
- Students were more likely not to change language production FCMs for any educational placement in reviewing within group comparisons.
- Regular education with SLP pull-out or classroom services were more likely to increase one level (40 and 44%) for within group comparisons.
- Students in regular education with SLP pull-out services were more likely to increase greater than one language production FCM level (13%).
- Students receiving FCMs in special education with SLP classroom services (60%) were not as likely to change FCM levels in the six-month project time span. Also, they were less likely to increase one or more FCM levels.
- Change in FCM level data was not reported for the home/hospital school educational setting (ASHA policy not to report data with cell sizes less than 25). Only two students with language production FCMs were reported in the home/hospital school educational setting.

Language Comprehension Progress by Educational Placement (Table 41)

- The range of progress for the language comprehension FCM varied within each educational placement for no progress (45 to 64%), increased one level (29 to 46%), or increased greater than one level (7 to 14%) as shown in Table 41.
- Most language comprehension FCMs for students in regular education (2008) or special education (1,839) were provided with SLP pull-out services. In comparison, fewer special education (782) and regular education (175) FCMs were provided with SLP classroom services.
- Students receiving FCMs in all educational placements, except regular education with SLP classroom services, were likely not to increase FCM levels. This educational placement was equally likely to increase one level (46%).
- Students in regular education with SLP pull-out services made the most within group change by increasing greater than one level (14%).
- Students receiving FCMs in regular education (39%) or special education (39%) with SLP pull-out services made the next greatest amount of change by increasing one level.
- Students receiving FCMs in special education with SLP classroom services (64%) were not as likely to change FCM levels in the six-month project time span. Also, they were less likely to increase one or more levels.
- Change in FCM level data was not reported for the home/hospital school educational setting (ASHA policy not to report data with cell sizes less than 25). Only three students with language comprehension FCMs were reported in the home/hospital school educational setting.

Fluency Progress by Educational Placement (Table 42)

- The range of progress for the fluency FCM varied within each educational placement for no progress (36 to 55%), increased one level (36 to 50%), or increased greater than one level (9 to 17%) as shown in Table 42.
- Most fluency FCMs for students in regular education (387) or special education (146) were provided with SLP pull-out services. In comparison, fewer special education (28) and regular education (11) FCMs were provided with SLP classroom services.
- Students were more likely not to increase fluency FCMs for the six month period of the project for any educational placement.
- Students receiving FCMs in regular education with SLP pull-out were more likely to increase one level (39%) or greater than one FCM level (19%).
- Students receiving FCMs in special education with SLP classroom services (64%) were not as likely to change FCM levels in the six-month project time span. Also, they were less likely to increase one or more levels.
- There were only 11 students reported with FCMs for the regular education with SLP classroom services. No students were reported with FCMs in the home/hospital school educational setting. Change in FCM level data was not reported for these two educational settings (ASHA policy not to report data with cell sizes less than 25).

Augmentative Communication Comprehension Progress by Educational Placement (Table 43)

- The range of progress for the augmentative communication comprehension FCM varied within each educational placement for no progress (63 to 68%), increased one level (19 to 33%), or increased greater than one level (4 to 13%) as shown in Table 43.
- Most augmentative communication comprehension FCMs were provided for students in special education with SLP classroom services (169) or special education with SLP pull-out services (94). In comparison, few FCMs were provided for students in regular education with SLP pull-out services (31).
- Students receiving augmentative communication comprehension FCMs in special education with SLP pull-out services made the most change by increasing one level (33%). Students receiving FCMs in regular education with SLP pull-out services made the most change by increasing one or greater than one level (13%).
- Students receiving FCMs in special education with SLP pull-out or classroom services were not likely to change FCM levels for the six month project time period.
- Interestingly, students with special education classroom services were more likely to increase one FCM level rather than with SLP pull-out.
- Change in FCM level data was not reported for the home/hospital school educational placement or the regular education with SLP classroom services (ASHA policy not to report data with cell sizes less than 25). There was one student reported with FCMs provided in the home/hospital school educational setting and six students for the regular education with SLP classroom services.

Voice Production Progress by Educational Placement (Table 44)

- The range of progress for the voice production FCM varied within each educational placement for no progress (41 to 61%), increased one level (32 to 37%), or increased greater than one level (7 to 22%) as shown in Table 44.
- Most voice production FCMs were provided for students in regular education with SLP pull-out services (152). In comparison, fewer special education with SLP pull-out services (84) and special education with SLP classroom services (28) FCMs were provided.
- Students were more likely not to change FCM levels within any of the educational placements for the six-month period of the project.
- Students receiving FCMs in regular education (37%) and special education (35%) with SLP pull-out services, and special education with SLP classroom services (32%) made similar progress within groups by increasing one level.
- Students receiving FCMs in special education with SLP classroom services (61%) were not as likely to change FCM levels in the six-month project time span. Also, they were less likely to increase greater than one level.
- Change in FCM level data was not reported for the regular education with SLP classroom services or home/hospital school educational setting (ASHA policy not to report data with cell sizes less than 25).

Weaknesses of Data

- The interpretation of specific group data was limited because cell size was too small (ASHA policy not to report cell sizes of less than 25).
- The tables were not easily interpreted. The reader needed to tabulate percents to make numerical comparisons. The educational placement categories should have been ranked from highest to lowest percent to facilitate interpretation of data. In addition, the use of graphs would have facilitated ease of interpreting data.

Summary of the Outcomes

Articulation

- Most articulation FCMs were provided for students in regular and special education with SLP pull-out services.
- Students receiving FCMs in regular and special education with SLP pull-out services were more likely to increase, within groups, one FCM level.
- Students in regular education with SLP pull-out services made the most within group change by increasing greater than one level (17%).
- Students receiving FCMs in special education with SLP classroom services were not as likely to change FCM levels in the six-month project time span. Also, they were less likely to increase one or more levels.

Language Production

- Language production FCMs were not as likely to change within any educational placement for the six month period of the project.
- FCMs were more likely to increase one level with regular education students and SLP pull-out or classroom services.

- Students in regular education with SLP pull-out services were more likely to increase greater than one language production FCM level.
- Students receiving FCMs in special education with SLP classroom services were not as likely to change FCM levels in the six-month project time span.

Language Comprehension

- Language comprehension FCMs were not as likely to increase for any educational placements, with the exception of regular education with SLP classroom services,
- Students in regular education with SLP pull-out services were more likely to increase one language comprehension FCM.
- Students in regular education or special education with SLP pull-out services were most likely to increase greater than one FCM level.
- Students receiving FCMs in special education with SLP classroom services (64%) were not as likely to change FCM levels in the six-month project time span.

Fluency

- Students with fluency FCMs were not as likely to change FCM levels for the six month period of the project for any educational placement.
- Students with fluency FCMs in regular education with SLP pull-out were more likely to increase one or greater FCM levels.
- Students with fluency FCMs in special education with SLP classroom services were not as likely to change FCM levels in the six-month project time span.

Augmentative Communication Comprehension

- Augmentative communication comprehension FCMs were provided more often for students in special education with SLP classroom services than for SLP pull-out services.
- Students with FCMs in regular education with SLP pull-out services are more likely to increase one or greater than one FCM level.
- Greater than 60% chance, students within any educational placement, were not likely to change FCM levels for the six month project time period.
- Students with special education placement were more likely to increase one FCM level rather with classroom services rather than with SLP pull-out.

Voice Production

- Students with voice production FCMs were not likely to change levels within any of the educational placements for the six-month period of the project.
- Students increased one voice FCM level similarly within groups for all the educational placements.
- Students with special education and SLP classroom services were not as likely to change FCM levels in the six-month project time span.

Potential Implications

- Those students having multiple or more severe special education needs were obviously in special education classroom educational placements. Including the severity level of the student and service delivery model with the educational placement was confusing to understand the implications. This appeared to be an unnecessary data source with the other fields available for data comparisons.
- It was not a surprise to find pull-out with special education or general educational placement would increase FCM levels. The student building a skill usually requires individual instruction no matter the type of communication disorder. The important factor is figuring out generalization of the skill in the most efficient way for the student's educational placement; this was not studied.

B. Treatment Time

A second major component of the data collected was for treatment time issues. The treatment time data analyses included: 1) average therapy time by special education/related services group; 2) progress in FCMs by mean number of therapy hours; 3) progress in FCMs by previous years of therapy; 4) primary reason for dismissal or break in services; 5) average therapy time by service delivery model; 6) Limited English Proficient students; 7) enrollment by month of year; and 8) students changing schools during treatment.

1. Average therapy time by special education/related service group (Table 4)

The mean number of hours of treatment the Speech-Language Pathologist (SLP) provided for each special education disability is provided in Table 4. The special education disabilities defined by ASHA included: autism, deafness, hearing impairment, mental retardation, multiple disabilities, orthopedic impairments, other health impairment, serious emotional disturbance, specific learning disability, speech-language impairment only, traumatic brain-injury, visual impairment, and other (see Appendix A). The purpose of reviewing this data was to determine if the type of special education disability varied for the number of treatment hours provided.

Results of Data

- The number of students for each special education disability varied widely from six students (visual impairment) to 5,938 (speech-language impairment only).
- The group mean number of treatment hours varied widely from 13.3 (speech-language impairment only) to 30.4 (deafness).
- The highest group mean number of treatment hours was for deafness (30.4) and hearing impairment (22.5).
- The lowest group mean number of treatment hours was for speech-language impairment only (13.3) and specific learning disability (14.3).

Weaknesses of Data

- Table 4 needs to include a reference for the amount of time (months or calendar days) the data was collected.
- Data represented in graph form would facilitate ease of interpreting information.

- The data was not analyzed to indicate significant differences between the speech-language impairment only and other groups for the group mean number of hours of treatment.

Summary of the Outcomes

- Speech-language impairment only students received fewer group mean hours of treatment than other special education students. Those students of hearing impairment received the most group mean hours of treatment.
- The largest special education groups receiving speech-language services included speech-language impaired only, then specific learning disability, mental disability, etc.

Potential Implications

- It was difficult to identify students with ASHA's defined primary disability group categories since most of Iowa's AEAs have progressed to a noncategorical system rather than categorizing special education students. It remains more feasible for Iowa to track speech-language impairment only and other related special education services students than by "primary disability."
- Does the group mean hours correlate to the longevity of speech-language services and number of years?

2. Progress in FCMs by mean hours of therapy (Table 30)

The group mean number of treatment hours Speech-Language Pathologists (SLP) provided for six FCMs were analyzed for three levels of progress (no change in FCM level), increased one FCM level, or increased greater than one FCM level). The FCM progress and number of therapy hours is provided in Table 30. The purpose of analyzing this data was to determine if the number of treatment hours varied for the FCM level change.

Results of Data

- The total group mean number of treatment hours varied widely from 13.5 (fluency) to 21.5 (augmentative communication comprehension).
- Overall, the group mean therapy hours for the FCMs did not vary much within levels from no change in FCM level to increased one or more levels.

Weaknesses of Data

- Data needs to be represented for between group differences to make other comparisons.

Summary of the Outcomes

- The group mean hours of therapy varied minimally within each FCM.
- Results of the data suggested it was not the number of hours in therapy changing within group FCM levels.

- The augmentative communication comprehension students received the greatest amount of group mean therapy hours (21.5).
- The language production (15.8) and language comprehension (15.9) FCMs received the next highest mean number of therapy hours.

Potential Implications

- Results of the data indicated the number of hours of therapy a student receives does not vary widely within FCMs. The daily school schedule, number of students on the caseload, and any other number of factors likely influence the amount of time a student is scheduled for therapy rather than the level of the FCM.
- Does the similar group mean number of hours for student therapy indicate a need for staff development to consider “potential for change” issues and general education environment considerations?
- When increases do occur for FCMs changing one or more levels, what are the factors contributing to the increased levels?

3. Progress in FCMs by previous years of therapy (Table 31-36)

The number of previous years in therapy results for six FCMs were provided for three levels of progress: no progress (no change in FCM level), increased one FCM level, or increased greater than one FCM level. The categories for the number of previous years in therapy included: none, one year or less, two years, three to five years, and more than five years. The FCM progress and previous years of therapy is provided in Tables 31-36. The purpose of reviewing this data was to determine if previous years of therapy influenced FCM level change. It should be noted data provided in Tables 31-36 were for within group comparisons, however, further analyses of data was computed by hand for between group comparisons (see Appendix E).

Results of Data

Articulation (Table 31)

- A total of 7,886 students had articulation FCMs.
- Most students had either one year or less previous therapy (2,191 students or 28%) or three to five years previous therapy (2,176 or 28%), then two years previous therapy (1,747 or 22%), more than five years previous therapy (912 or 12%), and no previous years of therapy (860 or 11%).
- Only 5% of the total students had articulation FCMs for seventh grade and older (reference ASHA Data Report Card, 7-8 and 9-12 grades).
- Seventy percent of the total students had articulation FCMs for kindergarten through third grades (reference ASHA Data Report Card, K- 3 grades).
- Twenty-five percent of the total students had articulation FCMs for fourth through sixth grades (reference ASHA Data Report Card, 4-6).

Within group differences

- Students with no previous years, one year or less, and two previous years of therapy were similar for making no change in FCM levels (range of 35% to 38%), to

increasing one FCM level (range of 45 to 46%), to increasing greater than one FCM level (range of 16 to 19%).

- Students with three to five years of previous therapy were as likely to make no progress (45%) as to increase one FCM level (43%). Few of these students increased greater than one FCM level (11%).
- Students with greater than five previous years of therapy were more likely not to change FCM levels (55%) than to increase one FCM level (38%), or increase greater than one FCM level (7%).

Between group differences (Appendix E, Table 31a)

- The percent of students not changing articulation FCM levels was 41% (whether students had no years to more than five years of previous therapy). Specifically, 66% of kindergarten to third grades, 28% of fourth through sixth grades, 4% of seventh to eighth grades, and 3% of ninth to twelfth grades did not change FCM levels.
- The percent of students increasing one FCM level was 44% (whether students had no years to more than five years of previous therapy). Specifically, 72% of kindergarten to third grades, 24% of fourth through sixth grades, 3% of seventh to eighth grades, and 1% of ninth to twelfth grades increased one FCM level.
- The percent of students increasing greater than one FCM level was 15% (whether students had no years to more than five years of previous therapy). Specifically, 77% of kindergarten to third grades, 22% of fourth through sixth grades, 1% of seventh to eighth grades, and 0% of ninth to twelfth grades increased greater than one FCM level.
- Students were more likely not to increase articulation FCM levels with three to five years' previous therapy (31%).
- Students made similar progress between groups for increasing one FCM with one year or less (29%), two years (23%) or three to five years of previous of therapy (27%).
- Students increased greater than one FCM level more often with one year or less previous therapy. Similar progress was noted for between groups increasing greater than one FCM with two years (24%) or three to five years of previous therapy (21%).

Language Production (Table 32)

- A total of 6,022 students had language production FCMs.
- The language production FCM results indicated most students (2,015) had three to five years of therapy, then one year or less of therapy (1,316), two years of therapy (1,304), more than five years of therapy (1,059), and no previous years of therapy (328).
- Sixty-four percent of the students had language production FCMs for kindergarten through third grades (reference ASHA Data Report Card, K- 3 grades).
- Twelve percent of the students were above sixth grade for language production FCMs (reference ASHA Data Report Card, 7-8 and 9-12 grades).

Within group differences

- Students with no previous years, one year or less, and two previous years of therapy were similar for making no change in language production FCM levels (range of 42%

to 50%), to increasing one FCM level (range of 37 to 42%), to increasing greater than one FCM level (range of 12 to 15%).

- Students with three to five years or more than five years of previous therapy were as likely to make no progress (52 - 58%) as to increase one FCM level (35 - 40%). Few of these students increased greater than one FCM level (7 - 8%).

Between group differences (Appendix E, Table 32a)

- The percent of students not changing language production FCM levels was 51% (whether students had no years to more than five years of previous therapy).
- The percent of students increasing one FCM level was 39% (whether students had no years to more than five years of previous therapy).
- The percentage of students increasing greater than one FCM level was 10% (whether students had no years to more than five years of previous therapy).
- Students with three to five years of previous therapy were more likely between groups not to change FCM levels (34%), to increase one FCM level (34%) and increase greater than one FCM level (26%).
- Students were more likely not to change language production FCM levels with one year or less (20%), two years (21%), or more than five years previous therapy (20%).
- Students made similar progress between groups for increasing one FCM with one year or less (23%) and two years (21%) of previous therapy.
- Students increased greater than one FCM level more often with one year or less (25%), two years (28%), or three to five years (26%) previous therapy.

Language Comprehension (Table 33)

- A total of 4,647 students had language comprehension FCMs.
- Most students had three to five years of therapy (1,560 or 34%), then one year or less therapy (1,025 or 22%), two years of therapy (946 or 20%), more than five years of therapy (872 or 19%), and no previous years of therapy (244 or 5%).

Within group differences

- Students with three to five years (51%) and more than five years of previous therapy (63%) were more likely not to change language comprehension FCM levels.
- Students from no previous years to five years of previous therapy were similar in likelihood to increase one language comprehension FCM level (range of 39% to 43%).
- Students with no previous therapy (17%) were more likely to change within the group, greater than one language comprehension FCM level.

Between group differences (Appendix E, Table 33a)

- The percent of students not changing language comprehension FCM levels was 51% (whether students had no years to more than five years of previous therapy).
- The percentage of students increasing one FCM level was 38% (whether students had no years to more than five years of previous therapy).
- The percentage of students increasing greater than one FCM level was 11% (whether students had no years to more than five years of previous therapy).

- Students with three to five years of previous therapy were more likely as a group not to change FCM levels (34%), to increase one FCM level (34%) and increase greater than one FCM level (32%) for between group comparisons.
- Students made similar progress between groups for increasing one FCM with one year or less (23%) or two years of previous of therapy (22%).
- Students made similar progress between groups for increasing greater than one FCM with one year or less (24%) or two years of previous therapy (24%).

Fluency, Rate, or Rhythm (Table 34)

- A total of 565 students had fluency, rate, or rhythm FCMs. Fifty percent of the students were in grade kindergarten to third, 27% were in grades fourth to sixth, and 33% were above sixth grade.
- Most students had three to five years of therapy (162 students), more than five years of therapy (132), one year or less therapy (128), two years of therapy (110), and no previous years of therapy (33).

Within group differences

- Students with three to five years (47%) and more than five years of previous therapy (55%) were more likely not to change fluency FCM levels.
- Students with no previous years to five years of previous therapy were all likely to increase one fluency FCM level (range of 39% to 41%).
- Fewer students were likely to change greater than one voice FCM level.

Between group differences (Appendix E, Table 34a)

- The percentage of students not changing fluency FCM levels was 45% (whether students had no years to more than five years of previous therapy).
- The percentage of students increasing one FCM level was 38% (whether students had no years to more than five years of previous therapy).
- The percentage of students increasing greater than one FCM level was 17% (whether students had no years to more than five years of previous therapy).
- Fifty-eight percent of the students not changing FCM levels had three to five years (30%) or five or more years (28%) of previous therapy.
- More students had FCMs increase one level with three to five years' previous therapy (30%).
- More students had FCMs increase greater than one FCM level with one year or less previous therapy.

Augmentative Communication Comprehension (Table 35)

- A total of 272 students had augmentative communication comprehension FCMs.
- Many cells had less than 25 students, so outcomes data are based only on three to five and five or more years of previous therapy.
- Most students had more than five years of therapy (151), then three to five years of therapy (87), two years of therapy (23), one year or less therapy (9), and no previous years of therapy (2).

- Half the students (57%) did not change FCM levels for no previous years of therapy to more than five years.
- Students with three to five years (33%) or more than five years of previous therapy (27%) were more likely to change one FCM level.
- Students with three to five years (59%) or more than five years of previous therapy (69%) were more likely not to change FCM levels.
- Students with three to five years (8%) or more than five years of previous therapy (5%) were not likely to increase greater than one FCM level within a six month period of time.

Voice Production (Table 36)

- A total of 269 students had voice FCMs.
- Many cells had less than 25 students, so interpretations of outcomes are based on low numbers.
- Most students had three to five years of therapy (88 students or 62%), then two years of therapy (52), more than five years of therapy (51), one year or less therapy (48), and no previous years of therapy (30).
- Students with three to five years (48%) and more than five years of previous therapy (64%) were more likely not to change voice FCM levels.
- Students with one or less years (48%) or two years of previous therapy (40%) were more likely to change one voice FCM level.
- Students with no previous therapy (30%) were more likely to change greater than one voice FCM level.

Weaknesses of Data

- Total student group numbers for the articulation FCMs (Table 31) were not the same for the kindergarten to twelfth grade data as for the combined totals of the kindergarten to third, fourth to fifth, seventh to eighth, and ninth to twelfth grade data. An ASHA representative explained this occurred since some entrance forms did not have the grade level information marked and therefore totals were not accurately reflected in comparison to the kindergarten to twelfth grade totals.
- Data represented in graph form would have facilitated ease of interpreting information.
- The data was not statistically analyzed to indicate significant differences within or between FCM group level changes and number of years of previous therapy.
- Charts with data for between group FCM differences and previous years of therapy should be computed.

Summary of the Outcomes

Articulation FCMs

- Results of the articulation data indicated FCM levels increased more with younger children.
- The data suggested students plateau after sixth grade if they have been in articulation therapy for more than five years.

- Generally, the more years of therapy, the less likely a student was to change articulation FCM levels.
- Students progressed similarly within groups for no previous therapy, one year or less, and two years of previous therapy.

Language Production FCMs

- Most students with language production FCMs had three to five years of therapy.
- Students were equally likely not to change FCM levels, increase one FCM level, or increase greater than one FCM level with three to five years of previous therapy.
- Language production FCMs are not as likely to increase with more than five years of previous therapy.
- Years of therapy and FCM level changes were similar for within and between group data comparisons for kindergarten to twelfth grade comparisons.

Language Comprehension FCMs

- Most students with language comprehension FCMs had three to five years of therapy.
- Students were equally likely not to change FCM levels, increase one FCM level, or increase greater than one FCM level with three to five years of previous therapy.
- Language comprehension FCMs were not as likely to increase with more than five years of previous therapy.
- Years of therapy and FCM level changes were similar for within and between group data comparisons for kindergarten to twelfth grade with one exception. Students with three to five years of therapy were more likely to increase one FCM level.

Fluency, Rate, or Rhythm FCMs

- Within the more than five years of therapy group, it was more likely students would not change fluency FCM levels.
- The greatest percent of students increasing one FCM level had three to five years of therapy, however, one and two previous years of therapy were relative similar for increasing one fluency FCM level.
- Students were most likely to increase greater than one fluency FCM level with one year or less previous therapy.

Augmentative Communication Comprehension

- Students with augmentative communication comprehension FCMs take three to five years of therapy to get one FCM level change.
- The majority of these students continue in therapy more than five years making no progress as described by the current ASHA FCMs.

Voice Production

- Students were most likely to increase voice FCMs greater than one level within the first year of therapy.
- Students were most likely to increase voice FCMs one level with two years of therapy.
- Students were most likely not to change voice FCMs after three years of therapy.

Potential Implications

- If students make more progress in articulation therapy at younger ages, does this mean that by using Iowa developmental articulation norms that students are habituating errors and remediation takes longer?
- It usually takes three to five years of previous therapy to impact changing language comprehension FCMs. Will story retelling interventions and standard task monitoring impact increasing FCM levels with future data?
- Data suggested students older than sixth grade do not change language comprehension FCM levels and the number of FCMs decrease after five years of previous therapy. So it appears SLPs are dismissing students either not making progress or meeting language comprehension goals.
- The number of years of therapy does not appear to impact increasing fluency FCMs. In fact, the more years of therapy, the greater the likelihood the student will not increase fluency FCM levels. Are the most effective therapy interventions being provided to students at an early enough age?
- The first two years of therapy are most effective for increasing a student's voice production skills. An SLP should seriously consider the benefit of therapy beyond two years of intervention because no change in progress was likely to occur.
- When increases do occur for FCMs changing one or more levels, what are the primary factors contributing to the increased FCM levels?

4. Primary reason for dismissal/break in services (Table 37)

Results of the primary reason a change occurred in speech-language services are provided in Table 37. The primary reason students had a change in speech-language services was described by the following ASHA project guidelines: the data collection project ended/summer recess, goals were met, family moved, change in special education eligibility, student withdrew from school, the Individualized Education Plan (IEP) team moved the student from the school, illness/medical, and other. It was important to study the primary reason for change of services to determine influences for students changing or not changing FCM levels.

Results of Data

- The primary reason 82% of the students had a change in speech-language services was that the data collection project ended/summer recess started. This data supported the range of students not changing FCM levels
- Thirteen percent of the students met goals within the October to April time period for the project.
- Three percent of the families moved.
- All other reasons that students had a change in speech-language services were reported at a less than one percent occurrence level.

Weaknesses of Data

- The length of time from entry to exit of student data was limited as reflected by the percent of students meeting goals. To get a better representation of the data, a number of other factors needed to be considered to determine the influence of students increasing FCM levels; the monthly minutes/hours the student was in therapy; the number of years of previous therapy; etc.

Summary of the Outcomes

- The change of services was primarily noted for the project ending, for students meeting goals, and families moving.
- Only 13% of the students met IEP goals from entry to exit of the project.
- The other reasons for change of services (change in special education eligibility, student withdrew from school, the IEP team moved the student from the school, illness/medical) did not occur very frequently for the state data, less than 1%.

Potential Implications

- The length of time for the project likely influenced the number of reported students meeting IEP goals. Currently, there is no data available to compare this data to indicate if this was typical or not.
- If data were reported by the number of years in speech-language services, more accurate information may be available to study student progress. For example, goals were primarily met with an average of so many years/months in treatment for a particular FCM.
- The primary reason for change in services, as defined by ASHA, may not be an effective method to describe large groups making or not making progress over time. This type of data may be of more benefit in studying an individual student's progress.

5. Average therapy time by service delivery model (Table 38)

Results of the number and average hours of treatment provided for students by the type of service delivery model are provided in Table 38. Ten service delivery models were described by the ASHA project guidelines and included: collaborative consultation, classroom-based, community-based, pull-out, self-contained program, training/consultation-teacher, training/consultation-family, training/consultation-other, evaluation/re-evaluation, and other. The purpose of reviewing the type of service delivery model used and the average hours implemented was to determine influences for students changing or not changing FCM levels. Studying the service delivery models also provided a baseline of models used in Iowa as described by ASHA project guidelines. It should be noted, data represented students receiving multiple services rather than one primary type.

Results of Data

- The four more prevalent types of service models used included pull-out (11,413), collaborative consultation (3,137), evaluation/re-evaluation (2,875), and classroom-based (2,558).

- The highest average hours were indicated for the self-contained program (15.7), pull-out (11.9), classroom-based (8.4), and community-based (7.6) service delivery models.

Weaknesses of Data

- Service delivery models did not align with the problem solving approach used throughout the state.
- Data represented in graph form would facilitate ease of interpreting information.

Summary of the Outcomes

- The most prevalent type of service delivery model in Iowa was pull-out.
- Other types of service delivery models frequently used include collaborative consultation, evaluation/re-evaluation, and classroom-based.
- The highest average number of hours were indicated for self-contained programs

Potential Implications

- It is still unknown the way the data was analyzed, if one service delivery model facilitates change of FCM, meeting goals, etc., better than another does.
- Current research indicates an array of service delivery models are recommended to best meet students needs rather than solely using one model. Iowa data would indicate staff development training and follow-up needs to be provided to expand more frequent use of the other models.

6. Limited English Proficient students (Table 45)

Results are provided in Table 45 for the number and percent of Limited English Proficient (LEP) students in Iowa. The purpose of reviewing this data was to study the number of speech-language services LEP students.

Results of Data

- Speech-language services were provided for 207 LEP students or 1.6% of the total 12,553 students reported for this project.

Weaknesses of Data

- Data would have more meaning knowing statistics for the total number of LEP students in the state.

Summary of the Outcomes

- There are few LEP students receiving speech-language services in Iowa.

Potential Implications

- This data does not have a lot of potential implications without other statistics on student populations.

7. Enrollment by month of year (Table 46)

Results are provided in Table 46 for the month, number, and percent of students entering the project. The purpose of reviewing this data was to study the highest frequency month for students entering the project.

Results of Data

- The majority of students entered the project the month of October. Seventy-nine percent of the students were entered this month.
- The next highest frequency of students entering the project was for the month of September. Fourteen percent of the students were entered for this month.
- Fewer students were entered for the project in November (3%), December (2%), and January (2%).

Weaknesses of Data

- This data has minimal value since the project started in the fall, most data would be entered in September and October.

Summary of the Outcomes

- Ninety-three percent of the data was entered for the NOMS project in September and October.

Potential Implications

- This data does not have a lot of potential implications other than Iowa SLPs entered data as they were requested.

8. Students changing schools during treatment (Table 47)

Results are provided in Table 47 for the number and percent of students changing schools during treatment. The purpose of reviewing this data was to study the number of students changing schools for speech-language services.

Results of Data

- For the 12,509 students entered for the project, 95 or less than one percent (0.8%) transferred or changed schools.

Weaknesses of Data

- This data would have more meaning specifically studying those 95 students' changing schools during treatment. Were these students more likely to not change or increase FCMs levels with the factor of changing schools?

Summary of the Outcomes

- There were few students that changed schools during treatment in Iowa.

Potential Implications

- It is likely changing schools does not impact the student as much as the other social, emotional, and economic issues effecting these students. The school may be the only consistent routine of the student's day.

C. Functional Status Measures

Teachers and speech-language pathologists (SLPs) completed questionnaires referred to as Functional Status Measures (FSMs) to describe change in a student's communication skills at entry and exit of the project. Results of the data are provided in Tables 6, 7, 8, 9, 10, and 11. The purpose of reviewing this data was to compare the teachers' and SLPs' perceptions of rating and answering questionnaire statements.

1. FSM Question 5a: "Student communicates wants, needs, ideas, and concepts to others either verbally or by use of an augmentative/alternative communication system." (Table 6)

Results of the teacher and SLP's perception of the student communicating wants and ideas is provided in Table 6. This question had a range of responses to select: No basis for rating; does not do; does with maximal assistance, does with moderate to maximal assistance; does with moderate assistance; does with minimal to moderate assistance; does with minimal assistance; and does without assistance.

Results of Data

- The number of ratings selected progressively increased from "no basis for rating" to "does without assistance" for both teachers and SLPs for entry and exit data. Both teachers and SLPs similarly agreed more students communicated their wants and ideas than not.
- SLPs similarly selected the ratings selected by teachers for entry and exit data.
- There was a noted change for the number of ratings used at the time of exit by the teachers and SLPs. Students were described as changing from "does with minimal assistance" (23%, teacher and 26%, SLP) to "does without assistance" (41%, teacher and 41%, SLP) by the time of exit or end of the project.
- There was not a lot of change described by teachers or SLPs from entry to exit for each of the levels. An exception was noted for the rating "does without assistance" (ratings changed from 26% to 41% for the SLPs and from 30% to 40% for the teachers) from entry to exit.

Weaknesses of Data

- It is difficult to compare the teachers' and SLPs' ratings without having data analyzed to show statistical differences.
- Data needs to be arranged differently for the chart to facilitate interpretation. The teacher and SLP entry data should be placed side by side followed by a column showing the difference between the teacher and SLP results. The same arrangement should be followed for the exit information.
- The terms "enter/exit" would be preferred for school use rather than "entrance/discharge."

Summary of the Outcomes

- The teachers and SLPs generally assigned similar ratings from both entry and exit.

- Students showed the most change from entry to exit for the highest rating that could be assigned, “does without assistance.” This was not expected to occur.

Potential Implications

- The highest rated students at entry make the most gain by the time of exit. Are SLPs spending more time at lower levels with less potential for change to occur? Is this a bias among educators? Are SLPs providing appropriate interventions to get change at the lower levels?

2. FSM Question 5b: “Student demonstrates appropriate listening skills within the educational environment.” (Table 7)

Results of the teacher and SLP’s perception of the students’ use of appropriate listening skills are provided in Table 7. This question had a range of responses to select as described on the previous page.

Results of Data

- A number of SLPs (465 or 4%) indicated having “no basis for rating” this question at the time of entry. This suggested minimal involvement in the student’s educational environment to make this judgement. However, fewer SLPs (123 or 1%) indicated having “no basis for rating” this question at the time of exit. This data indicated the SLPs involvement in the educational environment increases after entry.
- Some teachers (42 or 3%) indicated having “no basis for rating” this question. This seemed unlikely since the teacher would be a part of the students’ everyday educational environment. The number of teachers (47 or 4%) also increased for indicating “no basis for this rating” at the time of exit. Once again it is difficult to understand a teacher not having a basis to rate a student’s listening skills in the educational environment.
- The number of ratings selected progressively increased from “does not do” to “does without assistance” for both teachers and SLPs for entry and exit data. Both teachers and SLPs similarly agreed more students demonstrated appropriate listening skills in the educational environment without assistance than not for both the beginning and end of the year.
- The ratings selected by teachers and SLPs varied for entry and exit data. Generally, those students needing more assistance were rated lower more often by the teachers than the SLPs. Those students needing less assistance were rated higher more often by the teachers than the SLPs. This may have reflected the amount of teacher involvement with the student rather than the student’s listening skills.
- There was a noted change for the number of ratings used at the time of exit by the teachers and SLPs. Students were described as changing from “does with minimal assistance” (23%, teacher and 26%, SLP) to “does without assistance” (32%, teacher and 36%, SLP) by the time of exit or end of the project.
- There was not a lot of change described by teachers or SLPs from entry to exit for each of the levels. An exception was noted for the rating “does without assistance” (ratings changed from 27% to 36% for the SLPs and from 24% to 32% for the teachers) from entry to exit.

Weaknesses of Data

- The majority of students receiving interventions do not change ratings from entry to exit for demonstrating appropriate listening skills.
- It is difficult to compare the teachers' and SLPs' ratings without having data analyzed to show statistical differences.
- Data needs to be arranged differently for the chart to facilitate interpretation. The teacher and SLP entry data should be placed side by side followed by a column showing the difference between the teacher and SLP results. The same arrangement should be followed for the exit information.
- The terms "enter/exit" would be preferred for school use rather than "entrance/discharge."

Summary of the Outcomes

- The teachers and SLPs generally assigned similar ratings from both entry and exit.
- Students showed the most change from entry to exit for the highest rating that could be assigned, "does without assistance." This was not expected to occur.

Potential Implications

- The highest rated students at entry make the most gain by the time of exit. Are SLPs spending more time at lower levels with less potential for change to occur? Is this a bias among educators?
- Listening is one of the most valued educational environment skills, according to teachers. However, it is doubtful many IEPs address listening skills in the classroom.
- What interventions are SLPs providing to get change in listening skills at the higher end of the ratings as compared to the lower levels?

3. FSM Question: "Student speaks without frustration." (Table 8)

Results of the teacher and SLP's perception of the student speaking without frustration is provided in Table 8. This question had a different range of responses to select: strongly agree, agree, neutral, disagree, strongly disagree, and not applicable.

Results of Data

- Teachers and SLPs similarly agreed students either spoke without frustration (41%, teachers and 43%, SLPs) or with frustration (26%, teachers and 28%, SLPs) at the time of entry.
- Teachers and SLPs similarly agreed students either spoke without frustration (47%, teachers and 51%, SLPs) or with frustration (19%, teachers and 17%, SLPs) at the time of exit.
- Students were judged to improve speaking without frustration for all rating levels as assessed by both teachers and SLPs.
- There was not a lot of change described by teachers or SLPs from entry to exit for any of the levels.

Weaknesses of Data

- It is difficult to compare the teachers' and SLPs' ratings without having data analyzed to show statistical differences.
- Data needs to be arranged differently for the chart to facilitate interpretation. The teacher and SLP entry data should be placed side by side followed by a column showing the difference between the teacher and SLP results. The same arrangement should be followed for the exit information.
- The terms "enter/exit" would be preferred for school use rather than "entrance/discharge."

Summary of the Outcomes

- The teachers and SLPs generally assigned similar ratings for both entry and exit.
- According to results of this data, 50% of the students do not speak with frustration having a communication disorder, as judged by teachers and SLPs.
- Two percent of teachers and SLPs judged the question not applicable to students and nine to 12% of teachers and SLPs remained neutral answering the question.

Potential Implications

- University training programs emphasize the importance of gathering assessment information regarding a student's level of frustration, speaking with a communication disorder. Is this a part of assessment overlooked once in the educational setting? Are students less frustrated with speaking and communication than 20 or 30 years ago? Does intervention in itself reduce the student's frustration?

4. FSM Question: "Student's speech does not call attention." (Table 9)

Results of the teacher and SLP's perception of the student's speech does not call attention to itself is provided in Table 9. This question had the same range of responses as indicated for Table 8.

Results of Data

- Teachers and SLPs agreed the student's speech did call attention to itself for entry (37%, teacher and 51%, SLPs) and exit data (33%, teacher and 40%, SLP).
- The teachers usually indicated the student's speech called less attention to itself than the SLPs for entry and exit data.
- There was small improvement noted for ratings changing and speech not calling attention to itself from entry to exit as judged by the teachers and SLPs.
- Some teacher (263 or 2%) and SLPs (273 or 2%) indicated the rating response was "not applicable" for this question. One wonders the type of communication disorder that does not call attention?

Weaknesses of Data

- It is difficult to compare the teachers' and SLPs' ratings without having data analyzed to indicate statistical differences.

- Data needs to be arranged differently for the chart to facilitate interpretation. The teacher and SLP entry data should be placed side by side followed by a column showing the difference between the teacher and SLP results. The same arrangement should be followed for the exit information.
- The terms “enter/exit” would be preferred for school use rather than “entrance/discharge.”

Summary of the Outcomes

- The teachers and SLPs typically agreed the student’s speech did call attention to itself.
- The teachers and SLPs generally assigned similar ratings from both entry and exit data.
- The teachers judged the student’s speech to call less attention than the SLP.

Potential Implications

- If a student’s speech calls attention, does s/he receive more time in intervention?
- What type of communication disorder does not call attention to itself?

5. FSM Question: “Student speaks loudly enough.” (Table 10)

Results of the teacher and SLP’s perception of the student speaking loudly enough is provided in Table 10. This question had the same range of responses as indicated for Table 8.

Results of Data

- The teachers (52%) and SLPs (60%) generally agreed students spoke loudly enough at entry of the project. As noted by the data, SLPs typically responded with higher ratings for students than the teachers.
- The teachers (54%) and SLPs (64%) generally agreed students spoke loudly enough at the time of exit and the project. As noted by the data, the SLPs typically responded with higher ratings for students than the teachers.
- The ratings selected by teachers and SLPs varied at each level for entry and exit data.
- There was little noted change for ratings used at the time of entry to exit by the teachers and SLPs.

Weaknesses of Data

- It is difficult to compare the teachers’ and SLPs’ ratings without having data analyzed to demonstrate statistical differences.
- Data needs to be arranged differently for the chart to facilitate interpretation. The teacher and SLP entry data should be placed side by side followed by a column showing the difference between the teacher and SLP results. The same arrangement should be followed for the exit information.
- The terms “enter/exit” would be preferred for school use rather than “entrance/discharge.”

IV. Conclusions

The ASHA NOMS project was considered successfully field tested by Iowa SLPs. ASHA established it was possible to efficiently enter and analyze a large volume of data with a number of participants. Iowa met expectations of receiving an extensive amount of data to study treatment outcomes. Also, participation in the project generated ideas to expand future statewide treatment outcomes reporting needs. The following general implications were concluded upon completion of the ASHA NOMs project.

Results of treatment outcomes data should be reported in tables for statewide trends using AEA data for combined kindergarten through twelfth grades. It is also valuable to have this data separated for various age levels (kindergarten to third, fourth to sixth, seventh to eighth, and ninth to twelfth grades) to study communication disorders specific to student development. Individual AEA reports are also needed so each AEA can make comparisons to overall state data trends. In addition to the table data, graphs should be provided to facilitate visual interpretation of trends. The data should be analyzed and displayed in charts and graphs for within and between group differences with statistical analyses completed. In order to study all speech-language disorders within the state and AEA, data needs to be reported for all cells, even though less than 25 participants were counted. Otherwise, only the more frequently occurring disorders are studied whereas services are provided for all children and students.

The Functional Communication Measures (FCMs) were considered useful for studying progress and eligibility for special education/related services but data will need to be analyzed differently in the future. Since many AEAs in Iowa use noncategorical for entitlement of special education, future data will need to be analyzed for speech-language services and “other special education services.” Overall, the FCMs were considered useful for studying progress by:

- 1) Determining the number and percent of students not changing an FCM level, increasing one FCM level, or increasing greater than one FCM level;
- 2) Gender;
- 3) Race/ethnicity group (data needs to be analyzed with state race/ethnicity group data for meaningful interpretation); and
- 4) Group mean scores and level changes from entry to exit.

The data for FCMs by educational placement was not considered as useful in Iowa since ASHA definitions mixed educational placement with service delivery models. This data analysis will be replaced with Iowa’s recently developed Service Delivery Model.

The treatment time data was considered useful for studying:

- 1) The average amount of therapy time for special education/related services groups;
- 2) The student progress by FCMs and mean number of therapy hours;
- 3) The student progress for FCMs and previous years of therapy;
- 4) The primary reason for dismissal or break in services; and
- 5) The average therapy time by service delivery model (use Iowa Service Delivery Model in future).

Summary of the Outcomes

- The teachers and SLPs generally judged students to speak loudly enough.
- Small change occurred for any rating from entry to exit.

Potential Implications

- Is this a valuable statement or question for teachers and SLPs to answer?
- It is doubtful many IEPs address speaking loudly in the classroom, especially since this in itself would be considered a voice communication disorder.

6. FSM Question: “Student demonstrates improved social and educational skills due to intervention by the SLP.” (Table 11)

Results of the teacher and SLP’s perception of the student demonstrating improved social and educational skills due to intervention by the SLP is provided in Table 11. This question included the same choices as previously described for Table 8.

Results of Data

- More SLPs (63%) than teachers (55%) agreed the students had improved social and educational skills due to the SLP’s intervention.
- Teachers and SLPs similarly disagreed students had improved (3%, teachers and 2%, SLPs).
- Many SLPs (2,234 or 18%) and teachers (2,274 or 18%) selected the “neutral” rating to not judge this statement.
- Some SLPs (156 or 1%) and teachers (214 or 2%) indicated the choice “not applicable” for the student.

Weaknesses of Data

- It is difficult to compare the teachers’ and SLPs’ ratings without having data analyzed statistically.
- Data needs to be arranged differently for the chart to facilitate interpretation. A column showing the difference between the teacher and SLP results would facilitate interpretation.

Summary of the Outcomes

- Fifty-five percent of teachers and 63% of SLPs judged improvement of students’ social and educational skills due to the SLP’s intervention.
- Eighteen percent of teachers and SLPs remained “neutral” in responding to this statement.

Potential Implications

- Results of this data suggested SLPs and teachers believe speech-language services improve social and educational needs of students in the schools. However, SLPs as well as teachers have not identified the impact speech-language services have on improving the student’s social and educational services in the schools. It is apparent inservices or data will be needed for both teachers and SLPs.

Appendices

Appendix A: Entrance Form

Appendix B: Functional Status Measure

Appendix C: Evaluation of Services

Appendix D: ASHA Tables (1-62)

Appendix E: Tables (31a - 34a)

**RATING OF FUNCTIONAL
COMMUNICATION MEASURES (FCMs)**

[Faint, illegible handwriting on lined paper]



FUNCTIONAL STATUS MEASURES

1. Student ID									
A	A	A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E	E	E
F	F	F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K
L	L	L	L	L	L	L	L	L	L
M	M	M	M	M	M	M	M	M	M
N	N	N	N	N	N	N	N	N	N
O	O	O	O	O	O	O	O	O	O
P	P	P	P	P	P	P	P	P	P
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
R	R	R	R	R	R	R	R	R	R
S	S	S	S	S	S	S	S	S	S
T	T	T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U	U	U
V	V	V	V	V	V	V	V	V	V
W	W	W	W	W	W	W	W	W	W
X	X	X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

2. Facility ID									
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

3. Who completed this form?	
<input type="radio"/> SLP	<input type="radio"/> Teacher

4. Behavioral Observation Period	
<input type="radio"/> Behaviors observed at the beginning of the SLP Services or the beginning of the school year.	
<input type="radio"/> Behaviors observed at the end of the SLP Services or the end of the school year.	

5. Status Measures	
<p>a. The student communicates wants, needs, ideas, and concepts to others either verbally or by use of an augmentative/alternative communication system.</p> <p><input type="radio"/> No basis for rating</p> <p><input type="radio"/> Does not do</p> <p><input type="radio"/> Does with maximal assistance</p> <p><input type="radio"/> Does with moderate to maximal assistance</p> <p><input type="radio"/> Does with moderate assistance</p> <p><input type="radio"/> Does with minimal to moderate assistance</p> <p><input type="radio"/> Does with minimal assistance</p> <p><input type="radio"/> Does without assistance</p>	
<p>b. The student demonstrates appropriate listening skills within the educational environment.</p> <p><input type="radio"/> No basis for rating</p> <p><input type="radio"/> Does not do</p> <p><input type="radio"/> Does with maximal assistance</p> <p><input type="radio"/> Does with moderate to maximal assistance</p> <p><input type="radio"/> Does with moderate assistance</p> <p><input type="radio"/> Does with minimal to moderate assistance</p> <p><input type="radio"/> Does with minimal assistance</p> <p><input type="radio"/> Does without assistance</p>	

6. Other Measures		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Applicable
a. The student speaks easily without apparent frustration.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. The student's speech does not call attention to itself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. The student speaks loudly enough for small groups or cooperative learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. The student demonstrates improved social and educational skills due to intervention by the speech-language pathologist.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



EVALUATION OF SERVICES

1. Student ID

A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
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P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
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X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
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8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

2. Facility ID

0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

3. Date of Dismissal/ Evaluation of Services

	Mo.	Day	Year
1	Jan		9
2	Feb		9
3	Mar	0	0
4	Apr	1	1
5	May	2	2
6	Jun	3	3
7	Jul	4	4
8	Aug	5	5
9	Sep	6	6
10	Oct	7	7
11	Nov	8	8
12	Dec	9	9

4. Indicate the primary reason for dismissal/break in services.

- Goals met and no further intervention needed
- Summer recess and continued intervention next year
- Family moved
- Illness or medical complications
- Eligibility for special education and related services changed
- Student withdrew from school
- IEP team has moved the student from the school
- Data collection project ended
- Other

5. Was the course of intervention interrupted?

- Yes
- No

6. Functional Communication Measures (FCMs)

Score only those FCMs which apply to the student's treatment plan.

	N/A	CNT/DNT	Least Functional						Most Functional
Articulation/Phonology	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Augmentative Communication Comprehension	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Augmentative Communication Production	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Cognitive Communication	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Dysphagia	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Fluency, Rate, or Rhythm	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Language Comprehension	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Language Production	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Voice Production	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Central Auditory Processing	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Hearing Sensitivity	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Hearing Loss: Awareness/Understanding Management	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Gain from Amplification	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Hearing Aids: Use/Communication Strategies	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Hearing Aids/ALD: Operation and Management	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7

7. Is this student Limited English Proficient (LEP)?

- Yes
- No

*Section III
Definition*

If yes, select the statement that best describes the SLP services

- SLP services provided in English only
- SLP services provided in other language only
- SLP services provided in both English and other language

8. On average, how many times per week did the SLP have direct intervention with the student?

- One
- Two
- Three
- Four
- Five

9. What was the average length of the direct SLP intervention session(s)?

- ≤ 20 min.
- ≤ 30 min.
- ≤ 45 min.
- ≤ 60 min.
- >60 min.

10. What model of direct SLP services did you provide to the student?

- Individual pull-out
- Group pull-out **If group, indicate the average group size**
 - 2 - 4 students
 - 5 - 6 students
 - 7 - 9 students
 - 10 or more students
- Individual and group pull-out
- Individual pull-out and classroom
- Group pull-out and classroom
- Both individual/group pull-out and classroom
- Classroom only
- Other

11. What was the total number of hours that the student received SLP intervention during this period?

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Based on IEP

12. Based on the total amount of SLP intervention, approximately what percentage of time did the student participate in SLP services in any of the following service delivery models?

	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
a. Collaborative Consultation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Classroom-Based	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Community-Based	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Pull-Out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Self-Contained Program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Training/Consultation Only	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Teacher <input type="radio"/> Family <input type="radio"/> Other										
g. Evaluation/Re-Evaluation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Indicate the educational placement where the student received the majority of his/her education.

- Regular education class with SLP pull-out services
- Regular education class with SLP services in the classroom
- Special education class with SLP pull-out services
- Special education class with SLP services in the classroom
- Home/Hospital school *IEP*
- Other *Home school by choice*

K-12 (Education) Treatment Outcomes Form



AMERICAN
SPEECH-LANGUAGE-
HEARING
ASSOCIATION

ENTRANCE

National Center for
Treatment Effectiveness
In Communication Disorders

1. Student ID									
A	A	A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E	E	E
F	F	F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K
L	L	L	L	L	L	L	L	L	L
M	M	M	M	M	M	M	M	M	M
N	N	N	N	N	N	N	N	N	N
O	O	O	O	O	O	O	O	O	O
P	P	P	P	P	P	P	P	P	P
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
R	R	R	R	R	R	R	R	R	R
S	S	S	S	S	S	S	S	S	S
T	T	T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U	U	U
V	V	V	V	V	V	V	V	V	V
W	W	W	W	W	W	W	W	W	W
X	X	X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

2. Facility ID									
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

5. Race/Ethnicity	
<input type="radio"/>	Black (not of Hispanic origin)
<input type="radio"/>	Asian/Pacific Islander
<input type="radio"/>	White (not of Hispanic origin)
<input type="radio"/>	Native American
<input type="radio"/>	Hispanic
<input type="radio"/>	Other

3. Date of Birth		
Mo.	Day	Year
① Jan		
② Feb		
③ Mar	<input type="text"/>	<input type="text"/>
④ Apr	<input type="text"/>	<input type="text"/>
⑤ May	<input type="text"/>	<input type="text"/>
⑥ Jun	<input type="text"/>	<input type="text"/>
⑦ Jul	<input type="text"/>	<input type="text"/>
⑧ Aug	<input type="text"/>	<input type="text"/>
⑨ Sep	<input type="text"/>	<input type="text"/>
⑩ Oct	<input type="text"/>	<input type="text"/>
⑪ Nov	<input type="text"/>	<input type="text"/>
⑫ Dec	<input type="text"/>	<input type="text"/>

6. Grade Level					
<input type="radio"/>	K	<input type="radio"/>	5	<input type="radio"/>	10
<input type="radio"/>	1	<input type="radio"/>	6	<input type="radio"/>	11
<input type="radio"/>	2	<input type="radio"/>	7	<input type="radio"/>	12
<input type="radio"/>	3	<input type="radio"/>	8	<input type="radio"/>	Ungraded
<input type="radio"/>	4	<input type="radio"/>	9	<input type="radio"/>	Other

4. Gender	
<input type="radio"/>	Male
<input type="radio"/>	Female

7. Eligibility for Special Education and Related Services	
<input type="radio"/>	Autism
<input type="radio"/>	Deaf-Blindness
<input type="radio"/>	Deafness
<input type="radio"/>	Hearing Impairment
<input type="radio"/>	Mental Retardation
<input type="radio"/>	Multiple Disabilities
<input type="radio"/>	Orthopedic Impairment
<input type="radio"/>	Other Health Impairment
<input type="radio"/>	Serious Emotional Disturbance
<input type="radio"/>	Specific Learning Disability
<input type="radio"/>	Speech-Language Impairment Only
<input type="radio"/>	Traumatic Brain Injury
<input type="radio"/>	Visual Impairment
<input type="radio"/>	Other (Please specify) _____

8. How many hours of SLP services are specified on the IEP?	
<input type="radio"/>	≤ 1 hour per week
<input type="radio"/>	> 1 hour and ≤ 2.5 hours per week
<input type="radio"/>	> 2.5 hours per week

9. How many years of speech-language intervention has the student previously received in the schools?			
<input type="radio"/>	None	<input type="radio"/>	6
<input type="radio"/>	1 year or less	<input type="radio"/>	7
<input type="radio"/>	2	<input type="radio"/>	8
<input type="radio"/>	3	<input type="radio"/>	9 years or more
<input type="radio"/>	4	<input type="radio"/>	Unknown
<input type="radio"/>	5		

10. Does the student have/use any of the following? (Select all that apply)	
<input type="radio"/>	Augmentative/Alternative Communication Device
<input type="radio"/>	Hearing Aid or Personal Listening Device
<input type="radio"/>	Cochlear Implant
<input type="radio"/>	Sign Language/Sign System

11. Date the FCMs were scored

Mo.	Day	Year
1 Jan		9
2 Feb		
3 Mar	0 0	0 0
4 Apr	1 1	1 1
5 May	2 2	2 2
6 Jun	3 3	3 3
7 Jul	4 4	4 4
8 Aug	5 5	5 5
9 Sep	6 6	6 6
10 Oct	7 7	7 7
11 Nov	8 8	8 8
12 Dec	9	9

12. Functional Communication Measures (FCMs)

Score only those FCMs which apply to the student's treatment plan.

	N/A	CNT/ DNT	Least Functional						Most Functional
Articulation/Phonology	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Augmentative Communication Comprehension	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Augmentative Communication Production	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Cognitive Communication	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Dysphagia	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Fluency, Rate, or Rhythm	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Language Comprehension	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Language Production	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Voice Production	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Central Auditory Processing	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Hearing Sensitivity	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Hearing Loss: Awareness/Understanding Management	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Gain from Amplification	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Hearing Aids: Use/Communication Strategies	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7
Hearing Aids/ALD: Operation and Management	<input type="radio"/>	<input type="radio"/>	1	2	3	4	5	6	7

13. Communication Disorders

Please mark **only one** primary communication disorder and as many additional communication disorders as applicable.

Primary
Additional

Language Comprehension Disorders

- 121.2 Aphasia/Dysphasia (Acquired)
- 121.3 Developmental
- 121.4 Dyslexia
- 121.5 Dyscalculia
- 121.6 Mixed, undifferentiated, or unspecified

Language Production Disorders

- 122.2 Aphasia/Dysphasia (Acquired)
- 122.3 Developmental
- 122.4 Dyslexia/Dyscalculia
- 122.5 Dysgraphia
- 122.6 Mixed, undifferentiated, or unspecified

Augmentative (primarily nonverbal) Communication

- 123.0 Augmentative (primarily nonverbal) Communication

Cognitive Communication Disorders

- 124.4 Mental Retardation
- 124.5 Unspecified

Disorders of Organization/Language/Cognition/Pragmatics

- 125.0 Disorders of Organization/Language/Cognition/Pragmatics

Motor Speech Disorders

- 131.1 Dysarthria
- 131.2 Apraxia
- 131.3 Dysarthria and Apraxia (Mixed)

Structurally Based Speech Disorders

- 132.1 Dental
- 132.2 Lingual
- 132.3 Palatal
- 132.4 Facial *paralysis*
- 132.5 Mixed

Developmental Speech Disorders **delayed/disordered*

- 133.0 Developmental Speech Disorders (e.g., delayed or disordered phonologic development)

** not normal developmental*

Primary
Additional

Psychogenic Speech Disorders

- 134.0 Psychogenic Speech Disorders

Mixed Speech Disorders *dysarthria/apraxia*

- 135.0 Mixed Speech Disorders, Unspecified

Speech Rate, Rhythm, or Fluency Disorders

- 140.1 Stuttering
- 140.2 Cluttering
- 140.3 General Oral Inaccuracy *mumbling*
- 140.4 Dysprosody

Voice Disorders

- 150.1 Neurogenic
- 150.2 Structural
- 150.3 Hyperfunctional
- 150.4 Velopharyngeal Insufficiency/Inadequacy
- 150.5 Mixed
- 150.6 Unspecified

Resonance Disorders

- 160.1 Neurogenic
- 160.2 Structural (e.g., cleft palate)
- 160.3 Mixed
- 160.4 Unspecified

Respiratory Disorders

- 170.0 Respiratory Disorders

Oral/Pharyngeal (Swallowing) Disorders

- 181.0 Dysphagia/Swallowing Disorders
- 182.0 Orofacial Myofunctional Disorders

Unlisted Category

- 190.0 Unlisted Category

Other Codes

Please Specify: _____

Please Specify: _____

As Relates to treatment

14. Indicate if the primary communication disorder resulted from an:

- Acquired Illness
- Accident

IOWA PUBLIC SCHOOLS

DATA REPORT CARD

1997-98 FIELD TRIAL

K – 12 (SCHOOLS) COMPONENT

**NATIONAL OUTCOMES MEASUREMENT SYSTEM (NOMS)
FOR SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY**

***NATIONAL CENTER FOR TREATMENT EFFECTIVENESS
IN COMMUNICATION DISORDERS***

AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION

Iowa K-12 State Report

August 25, 1998

Table 1: Gender of Students Classified as Having a Communication Disorder

SEX	N	%
Male	8,136	64.6%
Female	4,368	34.7%
Missing	100	0.7%
Total	12,604	100%

Table 2: Frequency of FCM by Race/Ethnicity

6 most frequently used FCMs (+ Voice Production)	Race/ Ethnicity													
	Black		Asian		White		Nat. Am.		Hispanic		Other		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Articulation	226	2.8%	109	1.4%	7,489	93.2%	40	0.5%	119	1.5%	49	0.6%	8,032	100%
Language Production	325	5.2%	81	1.3%	5,574	89.2%	40	0.6%	163	2.6%	65	1.0%	6,248	100%
Language Comprehension	272	5.6%	72	1.5%	4,268	88.1%	36	0.7%	141	2.9%	54	1.1%	4,843	100%
Fluency, Rate, or Rythm	26	4.5%	5	0.9%	526	91.5%	5	0.9%	10	1.7%	3	0.5%	575	100%
Augmentative Comm. Production	26	4.9%	12	2.2%	474	88.6%	6	1.1%	11	2.1%	6	1.1%	535	100%
Cognitive Communication	22	4.9%	8	1.8%	396	87.6%	8	1.8%	12	2.6%	6	1.3%	452	100%
Voice	9	3.3%	4	1.4%	247	89.5%	5	1.8%	8	2.9%	3	1.1%	276	100%

Table 3: Frequency of Primary Communication Disorder by Race

5 Most Common Categories of Primary Communication Disorder	Race/ Ethnicity													
	Black		Asian		White		Nat. Am.		Hispanic		Other		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Developmental Speech	142	2.5%	59	1.0%	5,471	94.6%	20	0.3%	69	1.2%	23	0.4%	5,784	100%
Language Production	97	5.0%	21	1.1%	1,721	89.4%	9	0.5%	59	3.1%	18	0.9%	1,925	100%
Language Comprehension	129	7.0%	26	1.4%	1,565	85.8%	20	1.1%	65	3.6%	20	1.1%	1,825	100%
Organization/Language/Cognition/Pragmatics	60	4.7%	22	1.7%	1,144	89.4%	8	0.6%	29	2.3%	16	1.3%	1,279	100%
Cognitive Communication	38	8.2%	6	1.3%	396	85.5%	3	0.6%	11	2.4%	9	1.9%	463	100%

Table 4: Average Therapy Time by Special Education/Related Services Groups

Special Education Group	N	Mean Hours of Treatment
Autism	325	15.4
Deafness	81	30.4
Hearing Impairment	156	22.5
Mental Retardation	2,088	14.5
Multiple Disabilities	403	15.1
Orthopedic Impairment	41	20.5
Other Health Impairment	26	19.5
Serious Emotional Disturbance	175	15.2
Specific Learning Disability	2,848	14.3
Speech-Language Impairment Only	5,938	13.3
Traumatic Brain Injury	52	14.4
Visual Impairment	6	*
Other	316	14.8

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 5: Progress in FCMs

FCM	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Articulation	3,338	41.5%	3,523	43.8%	1,189	14.7%	8,050	100%
Aug. Comm. Comp.	207	66.8%	88	28.4%	15	4.8%	310	100%
Aug. Comm. Prod.	351	64.8%	153	28.2%	38	7.0%	542	100%
Cognitive Comm.	271	59.9%	141	31.2%	40	8.8%	452	100%
Dysphagia	*	*	*	*	*	*	11	100%
Fluency	259	44.9%	218	37.8%	100	17.3%	577	100%
Language Comp.	2,510	51.6%	1,833	37.8%	520	10.7%	4,863	100%
Language Prod.	3,236	51.6%	2,403	38.3%	627	10.0%	6,266	100%
Voice Production	128	46.0%	98	35.3%	52	18.7%	278	100%
Cent. Aud. Process.	37	40.7%	26	28.6%	28	30.7%	91	100%
Hearing Sensitivity	75	85.2%	13	14.8%	0	-	88	100%
Hearing Loss	47	67.1%	14	20.0%	9	12.9%	70	100%
Gain From Amplif.	56	88.9%	6	9.5%	1	1.6%	63	100%
Hearing Aid Use	63	75.9%	17	20.5%	3	3.6%	83	100%
Hearing Aids/ALD	39	75.0%	10	19.2%	3	5.8%	52	100%

Table 6: Change in Functional Status Measure from Entrance to Discharge as Assessed by SLPs and Teachers for Question 5a: “ Student communicates wants, needs, ideas, and concepts to others either verbally or by use of an augmentative/alternative communication system.”

Status Measures	SLP				TEACHER			
	Entrance		Discharge		Entrance		Discharge	
	N	%	N	%	N	%	N	%
No basis for rating	95	0.8%	21	0.2%	59	0.5%	42	0.3%
Does not do	144	1.2%	78	0.6%	273	2.2%	137	1.1%
Does w/ maximal assist.	645	5.2%	380	3.0%	861	6.9%	467	3.7%
Does w/ mod to max assist.	1,030	8.2%	561	4.5%	1,278	10.2%	862	6.9%
Does w/ moderate assist.	1,637	13.1%	1,057	8.4%	1,461	11.7%	1,183	9.5%
Does w/ min to mod assist.	2,592	20.7%	2,051	16.4%	1,991	16.0%	1,775	14.2%
Does w/ minimal assist.	3,103	24.8%	3,230	25.8%	2,815	22.6%	2,906	23.3%
Does without assistance	3,271	26.1%	5,139	41.1%	3,744	30.0%	5,110	40.9%
Total	12,517	100%	12,517	100%	12,482	100%	12,482	100%

Table 7: Change in Functional Status Measure from Entrance to Discharge as Assessed by SLPs and Teachers for Question 5b: “Student demonstrates appropriate listening skills within the educational environment.”

Status Measures	SLP				TEACHER			
	Entrance		Discharge		Entrance		Discharge	
	N	%	N	%	N	%	N	%
No basis for rating	465	3.7%	123	1.0%	42	0.3%	47	0.4%
Does not do	116	0.9%	74	0.6%	322	2.6%	194	1.6%
Does w/ maximal assist.	642	5.1%	374	3.0%	1,157	9.3%	632	5.1%
Does w/ mod to max assist.	1,008	8.1%	659	5.3%	1,624	13.0%	1,077	8.7%
Does w/ moderate assist.	1,649	13.2%	1,175	9.4%	1,660	13.3%	1,466	11.8%
Does w/ min to mod assist.	2,400	19.2%	2,234	17.9%	2,019	16.2%	1,982	15.9%
Does w/ minimal assist.	3,017	24.2%	3,318	26.6%	2,753	22.1%	3,039	24.4%
Does without assistance	3,179	25.5%	4,519	36.2%	2,872	23.1%	4,012	32.2%
Total	12,476	100%	12,476	100%	12,449	100%	12,449	100%

Table 8: “Student speaks without frustration”as Evaluated by SLPs and Teachers

Response	SLP				TEACHER			
	At Entrance		At Discharge		At Entrance		At Discharge	
	N	%	N	%	N	%	N	%
Strongly Agree	953	7.6%	2,113	16.8%	1,485	11.8	2,186	17.4%
Agree	5,433	43.2%	6,390	50.8%	5,191	41.3%	5,851	46.6%
Neutral	1,470	11.7%	1,176	9.3%	1,371	10.9%	1,259	10.0%
Disagree	3,539	28.1%	2,171	17.3%	3,200	25.5%	2,380	18.9%
Strongly Disagree	909	7.2%	471	3.7%	1,014	8.1%	605	4.8%
Not Applicable	279	2.2%	262	2.1%	301	2.4%	281	2.2%
Total	12,583	100%	12,583	100%	12,562	100%	12,562	100%

Table 9: “Student’s speech does not call attention” as Evaluated by SLPs and Teachers

Response	SLP				TEACHER			
	At Entrance		At Discharge		At Entrance		At Discharge	
	N	%	N	%	N	%	N	%
Strongly Agree	315	2.5%	1,137	9.0%	860	6.8%	1,475	11.7%
Agree	1,982	15.8%	3,393	27.0%	2,985	23.8%	3,675	29.3%
Neutral	950	7.6%	1,401	11.1%	1,267	10.1%	1,444	11.5%
Disagree	6,480	50.9%	5,000	39.7%	4,687	37.3%	4,161	33.1%
Strongly Disagree	2,652	21.1%	1,384	11.0%	2,497	19.9%	1,541	12.3%
Not Applicable	273	2.2%	265	2.1%	263	2.1%	263	2.1%
Total	12,580	100%	12,580	100%	12,559	100%	12,559	100%

Table 10: “Student speaks loudly enough” as Evaluated by SLPs and Teachers

Response	SLP				TEACHER			
	At Entrance		At Discharge		At Entrance		At Discharge	
	N	%	N	%	N	%	N	%
Strongly Agree	1,216	9.7%	2,353	18.7%	2,073	16.5%	2,881	22.9%
Agree	7,578	60.2%	7,950	63.2%	6,481	51.5%	6,744	53.6%
Neutral	1,462	11.6%	911	7.2%	989	7.9%	916	7.3%
Disagree	1,601	12.7%	881	7.0%	2,019	16.0%	1,346	10.7%
Strongly Disagree	342	2.7%	164	1.3%	650	5.2%	358	2.8%
Not Applicable	383	3.0%	323	2.6%	371	2.9%	338	2.7%
Total	12,582	100%	12,582	100%	12,583	100%	12,583	100%

Table 11: “Student demonstrates improved social and educational skills due to intervention by the speech-language pathologist.” as Evaluated by Teachers and SLPs at discharge

Response	SLP		TEACHER	
	N	%	N	%
Strongly Agree	1,937	15.5%	2,674	21.6%
Agree	7,856	63.1%	6,751	54.6%
Neutral	2,234	17.9%	2,274	18.4%
Disagree	236	1.9%	367	3.0%
Strongly Disagree	39	0.3%	81	0.7%
Not Applicable	156	1.3%	214	1.7%
Total	12,458	100%	12,361	100%

Table 12: Progress in ARTICULATION FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	2,199	40.9%	2,380	44.3%	795	14.8%	5,374	100%
Female	1,108	42.5%	1,117	42.7%	385	14.8%	2,610	100%

Table 13: Progress in LANGUAGE PRODUCTION FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	2,042	52.6%	1,469	37.9%	370	9.5%	3,881	100%
Female	1,163	49.8%	920	39.4%	251	10.8%	2,334	100%

Table 14: Progress in LANGUAGE COMPREHENSION FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	1,501	51.3%	1,117	38.1%	310	10.6%	2,928	100%
Female	986	52.0%	703	37.1%	206	10.9%	1,895	100%

Table 15: Progress in FLUENCY, RATE, OR RHYTHM FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	198	44.8%	166	37.6%	78	17.6%	442	100%
Female	57	43.8%	51	39.2%	22	16.9%	130	100%

Table 16: Progress in AUGMENTATIVE COMMUNICATION COMPREHENSION FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	129	69.4%	51	27.4%	6	3.2%	186	100%
Female	76	62.3%	37	30.3%	9	7.4%	122	100%

Table 17: Progress in VOICE PRODUCTION FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	89	49.7%	60	33.5%	30	16.8%	179	100%
Female	38	39.6%	36	37.5%	22	22.9%	96	100%

Table 18: Progress in ARTICULATION FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	100	44.2%	92	40.7%	34	15.0%	226	100%
Asian	52	47.7%	44	40.4%	13	11.9%	109	100%
White	3,085	41.2%	3,305	44.1%	1,099	14.7%	7,489	100%
Native American	18	45.0%	12	30.0%	10	25.0%	40	100%
Hispanic	54	45.4%	46	38.7%	19	15.9%	119	100%
Other	24	48.9%	16	32.7%	9	18.4%	49	100%

Table 19: Progress in LANGUAGE PRODUCTION FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	179	55.1%	117	36.0%	29	8.9%	325	100%
Asian	40	49.4%	37	45.7%	4	4.9%	81	100%
White	2,864	51.4%	2,141	38.4%	569	10.2%	5,574	100%
Native American	26	65.0%	10	25.0%	4	10.0%	40	100%
Hispanic	85	52.1%	64	39.3%	14	8.6%	163	100%
Other	30	46.2%	30	46.2%	5	7.6%	65	100%

Table 20: Progress in LANGUAGE COMPREHENSION FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	138	50.7%	103	37.9%	31	11.4%	272	100%
Asian	43	59.7%	21	29.2%	8	11.1%	72	100%
White	2,180	51.1%	1,634	38.3%	454	10.6%	4,268	100%
Native American	20	55.6%	10	27.8%	6	16.6%	36	100%
Hispanic	86	60.9%	40	28.4%	15	10.6%	141	100%
Other	28	51.9%	22	40.7%	4	7.4%	54	100%

Table 21: Progress in FLUENCY, RATE, OR RHYTHM FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	11	42.3%	10	38.5%	5	19.2%	26	100%
Asian	*	*	*	*	*	*	5	100%
White	236	44.9%	200	38.0%	90	17.1%	526	100%
Native American	*	*	*	*	*	*	5	100%
Hispanic	*	*	*	*	*	*	10	100%
Other	*	*	*	*	*	*	3	100%

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Table 22: Progress in AUGMENTATIVE COMMUNICATION COMPREHENSION FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	*	*	*	*	*	*	15	100%
Asian	*	*	*	*	*	*	7	100%
White	179	66.3%	76	28.1%	15	5.6%	270	100%
Native American	*	*	*	*	*	*	3	100%
Hispanic	*	*	*	*	*	*	9	100%
Other	*	*	*	*	*	*	5	100%

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Table 23: Progress in VOICE PRODUCTION FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	*	*	*	*	*	*	9	100%
Asian	*	*	*	*	*	*	4	100%
White	115	46.6%	84	34.0%	48	19.4%	247	100%
Native American	*	*	*	*	*	*	5	100%
Hispanic	*	*	*	*	*	*	8	100%
Other	*	*	*	*	*	*	3	100%

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Table 24: Progress in ARTICULATION FCM by Eligibility for Special Education/Related Services

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Autism	27	55.1%	16	32.7%	6	12.2%	49	100%
Deafness	47	72.3%	18	27.7%	0	-	65	100%
Hearing Impairment	66	56.9%	41	35.3%	9	7.8%	116	100%
Mental Retardation	519	51.4%	401	39.7%	90	8.9%	1,010	100%
Multiple Disabilities	79	55.6%	49	34.5%	14	9.9%	142	100%
Orthopedic Impairment	20	76.9%	3	11.5%	3	11.5%	26	100%
Other Health Impairment	*	*	*	*	*	*	14	100%
Serious Emotional Disturbance	48	54.5%	30	34.1%	10	11.4%	88	100%
Specific Learning Disability	638	46.1%	593	42.9%	152	10.9%	1,383	100%
Speech-Language Impairment Only	1,778	36.2%	2,250	45.9%	877	17.9%	4,905	100%
Traumatic Brain Injury	*	*	*	*	*	*	14	100%
Visual Impairment	*	*	*	*	*	*	2	100%
Other	64	41.0%	72	46.1%	20	12.8%	156	100%

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Table 25: Progress in LANGUAGE PRODUCTION FCM by Eligibility for Special Education/Related Services

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Autism	123	50.2%	99	40.4%	23	9.3%	245	100%
Deafness	53	76.8%	14	20.3%	2	2.9%	69	100%
Hearing Impairment	63	60.0%	33	31.4%	9	8.6%	105	100%
Mental Retardation	906	59.7%	522	34.4%	89	5.9%	1,517	100%
Multiple Disabilities	139	60.9%	73	32.0%	16	7.0%	228	100%
Orthopedic Impairment	*	*	*	*	*	*	14	100%
Other Health Impairment	*	*	*	*	*	*	15	100%
Serious Emotional Disturbance	63	52.9%	44	36.9%	12	10.1%	119	100%
Specific Learning Disability	963	50.3%	757	39.6%	193	10.1%	1,913	100%
Speech-Language Impairment Only	760	44.5%	701	41.0%	247	14.5%	1,708	100%
Traumatic Brain Injury	17	56.7%	11	36.7%	2	6.6%	30	100%
Visual Impairment	*	*	*	*	*	*	3	100%
Other	101	43.5%	111	47.8%	20	8.6%	232	100%

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Table 26: Progress in LANGUAGE COMPREHENSION FCM by Eligibility for Special Education/Related Services

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Autism	99	50.5%	76	38.8%	21	10.7%	196	100%
Deafness	47	69.1%	20	29.4%	1	1.5%	68	100%
Hearing Impairment	54	61.4%	28	31.8%	6	6.8%	88	100%
Mental Retardation	778	60.0%	425	32.8%	93	7.2%	1,296	100%
Multiple Disabilities	125	57.3%	75	34.4%	18	8.3%	218	100%
Orthopedic Impairment	*	*	*	*	*	*	11	100%
Other Health Impairment	*	*	*	*	*	*	16	100%
Serious Emotional Disturbance	46	46.5%	44	44.4%	9	9.1%	99	100%
Specific Learning Disability	776	50.2%	615	39.8%	156	10.0%	1,547	100%
Speech-Language Impairment Only	455	42.4%	442	41.2%	175	16.3%	1,072	100%
Traumatic Brain Injury	16	59.3%	6	22.2%	5	18.5%	27	100%
Visual Impairment	*	*	*	*	*	*	4	100%
Other	77	46.4%	68	40.9%	21	12.7%	166	100%

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Table 27: Progress in FLUENCY, RATE, OR RHYTHM FCM by Eligibility for Special Education/Related Services

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Autism	*	*	*	*	*	*	6	100%
Deafness	*	*	*	*	*	*	1	100%
Mental Retardation	47	58.8%	22	27.5%	11	13.7%	80	100%
Multiple Disabilities	*	*	*	*	*	*	10	100%
Orthopedic Impairment	*	-	*	*	*	*	4	100%
Other Health Impairment	*	*	*	*	*	*	2	100%
Serious Emotional Disturbance	*	*	*	*	*	*	13	100%
Specific Learning Disability	54	44.6%	46	38.0%	21	17.4%	121	100%
Speech-Language Impairment Only	132	42.0%	125	39.8%	57	18.2%	314	100%
Traumatic Brain Injury	*	*	*	*	*	*	3	100%
Other	*	*	*	*	*	*	18	100%

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**Table 28: Progress in AUGMENTATIVE COMMUNICATION COMPREHENSION
FCM by Eligibility for Special Education/Related Services**

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Autism	23	63.9%	11	30.6%	2	5.5%	36	100%
Deafness	40	80.0%	10	20.0%	0	-	50	100%
Hearing Impairment	*	*	*	*	*	*	14	100%
Mental Retardation	57	66.3%	22	25.6%	7	8.1%	86	100%
Multiple Disabilities	58	64.4%	29	32.2%	3	3.3%	90	100%
Orthopedic Impairment	*	*	*	*	*	*	6	100%
Other Health Impairment	*	*	*	*	*	*	1	100%
Specific Learning Disability	*	*	*	*	*	*	7	100%
Speech-Language Impairment Only	*	*	*	*	*	*	1	100%
Traumatic Brain Injury	*	*	*	*	*	*	3	100%
Other	*	*	*	*	*	*	9	100%

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Table 29: Progress in VOICE PRODUCTION FCM by Eligibility for Special Education/Related Services

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Autism	*	*	*	*	*	*	2	100%
Deafness	*	*	*	*	*	*	4	100%
Hearing Impairment	*	*	*	*	*	*	11	100%
Mental Retardation	20	48.8%	15	36.6%	6	14.6%	41	100%
Multiple Disabilities	13	48.1%	8	29.6%	6	22.2%	27	100%
Orthopedic Impairment	*	*	*	*	*	*	7	100%
Other Health Impairment	*	*	*	*	*	*	2	100%
Serious Emotional Disturbance	*	*	*	*	*	*	1	100%
Specific Learning Disability	21	43.8%	20	41.7%	7	14.5%	48	100%
Speech-Language Impairment Only	48	41.7%	41	35.7%	26	22.6%	115	100%
Other	*	*	*	*	*	*	13	100%

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Table 30: Progress in FCMs by Mean Hours of Therapy

FCM	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	Mean Hours	N	Mean Hours	N	Mean Hours	N	Mean Hours
Articulation	3334	14.2	3515	14.1	1188	15.2	8037	14.3
Language Prod.	3234	15.6	2402	16.2	625	14.8	6261	15.8
Language Comp.	2508	15.6	1832	16.6	520	15.7	4860	15.9
Fluency	258	12.9	218	12.6	100	16.9	576	13.5
Aug. Comm. Com	207	21.7	87	21.9	15	18.2	309	21.5
Voice	128	14.2	98	13.1	52	15.9	278	14.2

Table 31: Progress in ARTICULATION FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	308	35.8%	387	45.0%	165	19.2%	860	100%
1 year or less	773	35.3%	1,011	46.1%	407	18.6%	2,191	100%
2	670	38.4%	791	45.3%	286	16.3%	1,747	100%
3-5	987	45.4%	940	43.2%	249	11.4%	2,176	100%
More than 5	500	54.8%	345	37.8%	67	7.4%	912	100%

Table 32: Progress in LANGUAGE PRODUCTION FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	139	42.4%	139	42.4%	50	15.2%	328	100%
1 year or less	618	46.9%	542	41.2%	156	11.9%	1,316	100%
2	645	49.5%	487	37.3%	172	13.2%	1,304	100%
3-5	1,054	52.3%	800	39.7%	161	7.9%	2,015	100%
More than 5	613	57.9%	371	35.0%	75	7.1%	1,059	100%

Table 33: Progress in LANGUAGE COMPREHENSION FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	96	39.3%	106	43.4%	42	17.2%	244	100%
1 year or less	490	47.8%	412	40.2%	123	12.0%	1,025	100%
2	442	46.7%	380	42.0%	124	13.1%	946	100%
3-5	797	51.1%	600	38.5%	163	10.4%	1,560	100%
More than 5	552	63.3%	261	29.9%	59	6.8%	872	100%

Table 34: Progress in FLUENCY, RATE, OR RHYTHM FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	9	27.3%	13	39.4%	11	33.3%	33	100%
1 year or less	49	38.3%	50	39.1%	29	22.6%	128	100%
2	49	44.5%	45	40.9%	16	14.5%	110	100%
3-5	76	46.9%	64	39.5%	22	13.6%	162	100%
More than 5	72	54.5%	41	31.1%	19	14.4%	132	100%

Table 35: Progress in AUGMENTATIVE COMMUNICATION COMPREHENSION FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	*	*	*	*	*	*	2	100%
1 year or less	*	*	*	*	*	*	9	100%
2	*	*	*	*	*	*	23	100%
3-5	51	58.6%	29	33.3%	7	8.0%	87	100%
More than 5	104	68.9%	40	26.5%	7	4.6%	151	100%

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Table 36: Progress in VOICE PRODUCTION FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	13	43.3%	8	26.7%	9	30.0%	30	100%
1 year or less	15	31.3%	23	47.9%	10	20.8%	48	100%
2	18	34.6%	21	40.4%	13	25.0%	52	100%
3-5	42	47.7%	29	32.9%	17	19.3%	88	100%
More than 5	33	64.7%	15	29.4%	3	5.9%	51	100%

Table 37: Primary Reason for Dismissal/ Break in Services

Primary Reason	N	%
Data Collection Project Ended/ Summer Recess	10,225	81.7%
Goals met	1,655	13.2%
Family Moved	348	2.8%
Change in Special Ed. Eligibility	50	0.4%
Student Withdrew from School	33	0.3%
IEP Team Moved Student from School	31	0.2%
Illness/ Medical	15	0.1%
Other	162	1.3%
Total	12,519	100%

Table 38: Average Time Participated in Each Service Delivery Model

Service Delivery Model	N	Avg. Hours
Collaborative Consultation	3,137	2.6
Classroom-Based	2,558	8.4
Community-Based	138	7.6
Pull-Out	11,413	11.9
Self-Contained Program	212	15.7
Training/Consult-Teacher	641	1.6
Training/Consult-Family	172	1.6
Training/Consult-Other	30	2.8
Evaluation/Re-Evaluation	2,875	1.5
Other	235	3.8
Total Number of Students	12,589	14.2

Note: A student may have received multiple types of services

Table 39: Progress in ARTICULATION FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	2,229	38.2%	2,628	45.0%	977	16.7%	5,834	100%
Regular Education with SLP Classroom Services	52	36.4%	72	50.3%	19	13.3%	143	100%
Special Education with SLP Pull-Out Services	858	50.7%	682	40.3%	151	8.9%	1,691	100%
Special Education with SLP Classroom Services	169	54.5%	110	35.5%	31	10.0%	310	100%
Home/Hospital School	*	*	*	*	*	*	8	100%
Other	21	46.7%	20	44.4%	4	8.9%	45	100%

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Table 40: Progress in LANGUAGE PRODUCTION FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	1,328	46.6%	1,158	40.6%	363	12.7%	2,849	100%
Regular Education with SLP Classroom Services	98	46.0%	93	43.7%	22	10.3%	213	100%
Special Education with SLP Pull-Out Services	1,286	55.6%	843	36.4%	184	7.9%	2,313	100%
Special Education with SLP Classroom Services	490	59.8%	276	33.7%	54	6.5%	820	100%
Home/Hospital School	*	*	*	*	*	*	2	100%
Other	22	44.0%	25	50.0%	3	6.0%	50	100%

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Table 41: Progress in LANGUAGE COMPREHENSION FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	941	46.9%	792	39.4%	275	13.7%	2,008	100%
Regular Education with SLP Classroom Services	78	44.6%	80	45.7%	17	9.7%	175	100%
Special Education with SLP Pull-Out Services	961	52.3%	708	38.5%	170	9.2%	1,839	100%
Special Education with SLP Classroom Services	501	64.1%	228	29.2%	53	6.7%	782	100%
Home/Hospital School	*	*	*	*	*	*	3	100%
Other	21	51.2%	17	41.5%	3	7.3%	41	100%

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Table 42: Progress in FLUENCY, RATE, OR RHYTHM FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	162	41.9%	151	39.0%	74	19.1%	387	100%
Regular Education with SLP Classroom Services	*	*	*	*	*	*	11	100%
Special Education with SLP Pull-Out Services	72	49.3%	52	35.6%	22	15.1%	146	100%
Special Education with SLP Classroom Services	18	64.3%	8	28.6%	2	7.1%	28	100%
Other	*	*	*	*	*	*	3	100%

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 43: Progress in AUGMENTATIVE COMMUNICATION COMPREHENSION FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	21	67.7%	6	19.4%	4	12.9%	31	100%
Regular Education with SLP Classroom Services	*	*	*	*	*	*	6	100%
Special Education with SLP Pull-Out Services	59	62.8%	31	32.9%	4	4.3%	94	100%
Special Education with SLP Classroom Services	115	68.0%	47	27.8%	7	4.1%	169	100%
Home/Hospital School	*	*	*	*	*	*	1	100%
Other	*	*	*	*	*	*	6	100%

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 44: Progress in VOICE PRODUCTION FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	62	40.8%	56	36.8%	34	22.4%	152	100%
Regular Education with SLP Classroom Services	*	*	*	*	*	*	10	100%
Special Education with SLP Pull-Out Services	42	50.0%	29	34.5%	13	15.5%	84	100%
Special Education with SLP Classroom Services	17	60.7%	9	32.1%	2	7.1%	28	100%
Home/Hospital School	*	*	*	*	*	*	1	100%
Other	*	*	*	*	*	*	2	100%

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Table 45: Percentage of Students that are Limited English Proficient (L.E.P.)

L.E.P.	N	%
Yes	207	1.6%
No	12,346	98.4%
Total	12,553	100%
Services Provided In...		
English Only	103	49.8%
Other Language	1	0.5%
Both	10	4.8%
Missing	93	44.9%
Total	207	100%

Table 46: Enrollment by Month of Year

Month	N	%
September	1,730	13.7%
October	9,940	78.9%
November	358	2.8%
December	251	2.0%
January	286	2.3%
February	31	0.2%
March	7	0.1%
April	1	0.01%
Total	12,604	100%

Table 47: Number of SLP Students who Changed Schools During Treatment

Transfer?	N	%
Yes	95	0.8%
No	12,509	99.2%
Total	12,604	100%

**Table 48: Change in FCM Levels by Level at Admission -
ARTICULATION/PHONOLOGY**

Admission Level	Students	Mean Change
1	59	+0.8
2	271	+1.3
3	684	+1.3
4	1,557	+1.0
5	3,369	+0.7
6	2,110	+0.3
Total	8,050	+0.7

Table 49: Change in FCM Levels by Level at Admission -AUGMENTATIVE COMMUNICATION COMPREHENSION

Admission Level	Students	Mean Change
1	16	*
2	79	+0.4
3	83	+0.5
4	56	+0.3
5	52	+0.3
6	24	*
Total	310	+0.3

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 50: Change in FCM Levels by Level at Admission -AUGMENTATIVE COMMUNICATION PRODUCTION

Admission Level	Students	Mean Change
1	48	+0.5
2	144	+0.4
3	183	+0.5
4	100	+0.3
5	52	+0.1
6	15	*
Total	542	+0.4

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 51: Change in FCM Levels by Level at Admission -COGNITIVE COMMUNICATION

Admission Level	Students	Mean Change
1	4	*
2	74	+0.6
3	111	+0.7
4	117	+0.5
5	117	+0.3
6	29	0
Total	452	+0.5

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 52: Change in FCM Levels by Level at Admission -DYSPHAGIA

Admission Level	Students	Mean Change
1	1	*
2	0	*
3	7	*
4	2	*
5	0	*
6	1	*
Total	11	*

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 53: Change in FCM Levels by Level at Admission -FLUENCY, RATE, OR RHYTHM

Admission Level	Students	Mean Change
1	2	*
2	36	+1.3
3	75	+1.2
4	153	+0.9
5	174	+0.6
6	137	+0.2
Total	577	+0.7

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 54: Change in FCM Levels by Level at Admission -LANGUAGE COMPREHENSION

Admission Level	Students	Mean Change
1	45	+0.6
2	178	+0.8
3	669	+1.0
4	1,339	+0.7
5	2,035	+0.4
6	597	+0.2
Total	4,863	+0.6

Table 55: Change in FCM Levels by Level at Admission -LANGUAGE PRODUCTION

Admission Level	Students	Mean Change
1	56	+0.5
2	202	+0.9
3	593	+0.9
4	1,685	+0.7
5	2,793	+0.5
6	937	+0.3
Total	6,266	+0.6

Table 56: Change in FCM Levels by Level at Admission -VOICE PRODUCTION

Admission Level	Students	Mean Change
1	4	*
2	10	*
3	17	*
4	41	+0.8
5	63	+0.6
6	36	+0.6
Total	278	+0.7

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 57: Change in FCM Levels by Level at Admission -CENTRAL AUDITORY PROCESSING

Admission Level	Students	Mean Change
1	1	*
2	9	*
3	38	+1.4
4	13	*
5	16	*
6	14	*
Total	91	+1.0

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 58: Change in FCM Levels by Level at Admission -HEARING SENSITIVITY

Admission Level	Students	Mean Change
1	4	*
2	16	*
3	22	*
4	21	*
5	13	*
6	12	*
Total	88	+0.1

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 59: Change in FCM Levels by Level at Admission -HEARING LOSS

Admission Level	Students	Mean Change
1	9	*
2	20	*
3	9	*
4	8	*
5	14	*
6	10	*
Total	70	+0.4

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 60: Change in FCM Levels by Level at Admission -GAIN FROM AMPLIFICATION

Admission Level	Students	Mean Change
1	4	*
2	2	*
3	4	*
4	7	*
5	28	0
6	18	*
Total	63	0

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

**Table 61: Change in FCM Levels by Level at Admission -HEARING AIDS:
USE/COMMUNICATION STRATEGIES**

Admission Level	Students	Mean Change
1	1	*
2	9	*
3	9	*
4	19	*
5	31	+0.3
6	14	*
Total	83	+0.2

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

**Table 62: Change in FCM Levels by Level at Admission -HEARING AIDS/ALD:
OPERATION AND MANAGEMENT**

Admission Level	Students	Mean Change
1	1	*
2	6	*
3	6	*
4	10	*
5	13	*
6	16	*
Total	52	+0.3

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

APPENDIX E (Tables 31a – 34a)

Table 31a: Progress in ARTICULATION FCMS by Years of Previous Therapy (Between Group Differences)

Years of Therapy	No Change in FCM Level					Increase One FCM Level					Increase Greater Than One FCM Level				
	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12
None	308	286	22	*	*	387	359	28	*	*	165	150	14	*	*
1yr <	773	617	151	*	*	1011	826	174	*	*	497	337	63	*	*
2 yrs	670	518	145	*	*	791	626	160	*	*	286	231	50	*	*
3-5yrs	987	621	321	29	*	940	620	290	23	*	249	161	84	4	*
>5 yrs	500	47	240	102	86	345	52	170	73	41	67	10	39	11	7
Sub-total		2089	879	131	86		2483	822	96	41		889	250	15	7
Group total	3238	3185				3474	3442				1174	1161			

Table 31a: Progress in ARTICULATION FCMS by Years of Previous Therapy (Between Group Percent Differences)

Years of Therapy	No Change in FCM Level					Increase One FCM Level					Increase Greater Than One FCM Level				
	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12
None	10%	14%	25%	*	*	11%	14%	3%	*	*	14%	17%	6%	*	*
1yr <	24%	30%	17%	*	*	29%	33%	21%	*	*	35%	38%	25%	*	*
2 yrs	21%	25%	16%	*	*	23%	25%	19%	*	*	24%	26%	20%	*	*
3-5yrs	31%	30%	37%	22%	*	27%	25%	35%	24%	*	21%	18%	34%	27%	*
>5 yrs	15%	22%	27%	78%	100%	10%	2%	21%	76%	100%	6%	1%	16%	73%	100%
Sub-total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Group total %	41%					44%					15%				
% Sub-groups		66%	28%	4%	3%		72%	24%	3%	1%		77%	22%	1%	0%

Table 32a: Progress in LANGUAGE COMPREHENSION FCMS by Years of Previous Therapy (Between Group Differences)

Years of Therapy	No Change in FCM Level					Increase One FCM Level					Increase Greater Than One FCM Level				
	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12
None	139	127	9	*	*	139	122	17	*	*	50	43	7	*	*
1yr <	618	514	68	*	*	542	471	64	*	*	156	137	15	*	*
2 yrs	645	528	95	*	*	487	404	68	*	*	172	142	27	*	*
3-5yrs	1054	639	337	36	9	800	504	246	29	15	161	104	52	2	2
>5 yrs	613	61	247	121	103	371	44	172	62	62	75	7	40	12	7
Sub-total		1869	756	157	112		1545	567	91	77		433	141	14	9
Group total	3069	2894				2339	2280				614	597			

Table 32a: Progress in LANGUAGE COMPREHENSION FCMS by Years of Previous Therapy (Between Group % Differences)

Years of Therapy	No Change in FCM Level					Increase One FCM Level					Increase Greater Than One FCM Level				
	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12
None	5%	7%	1%	*	*	6%	8%	3%	*	*	8%	10%	5%	*	*
1yr <	20%	28%	9%	*	*	23%	31%	11%	*	*	25%	32%	11%	*	*
2 yrs	21%	28%	13%	*	*	21%	26%	12%	*	*	28%	33%	19%	*	*
3-5yrs	34%	43%	45%	23%	8%	34%	33%	43%	32%	19%	26%	24%	37%	14%	22%
>5 yrs	20%	3%	33%	77%	91%	16%	3%	30%	68%	81%	12%	2%	28%	86%	78%
Sub-total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Group total %	51%					39%					10%				
% Sub-groups		65%	26%	5%	4%		68%	25%	4%	3%		73%	24%	2%	2%

Table 33a: Progress in LANGUAGE COMPREHENSION FCMS by Years of Previous Therapy (Between Group Differences)

Years of Therapy	No Change in FCM Level					Increase One FCM Level					Increase Greater Than One FCM Level				
	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12
None	96	85	9	*	*	102	90	16	*	*	42	37	4	*	*
1yr <	490	394	58	*	*	412	353	51	*	*	123	109	13	*	*
2 yrs	442	343	82	*	*	380	300	66	*	*	124	98	25	*	*
3-5yrs	797	454	261	33	15	600	350	214	21	9	163	102	56	3	1
>5 yrs	552	52	194	102	91	261	24	127	45	43	59	6	29	10	6
Sub-total		1328	604	135	106		1117	474	66	52		352	127	13	7
Group total	2377	2173				1759	1709				511	500			

Table 33a: Progress in LANGUAGE COMPREHENSION FCMS by Years of Previous Therapy (Between Group % Differences)

Years of Therapy	No Change in FCM Level					Increase One FCM Level					Increase Greater Than One FCM Level				
	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12
None	4%	6%	1%	*	*	6%	8%	3%	*	*	8%	11%	3%	*	*
1yr <	21%	30%	10%	*	*	23%	32%	11%	*	*	24%	31%	10%	*	*
2 yrs	19%	26%	14%	*	*	22%	27%	14%	*	*	24%	28%	20%	*	*
3-5yrs	34%	34%	43%	24%	14%	34%	31%	45%	32%	17%	32%	29%	44%	23%	14%
>5 yrs	23%	4%	32%	76%	86%	15%	2%	27%	68%	83%	12%	2%	23%	77%	86%
Sub-total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Group total %	51%					38%					11%				
% Sub-groups		61%	28%	6%	5%		65%	28%	4%	3%		71%	25%	3%	1%

Table 34a: Progress in FLUENCY, RATE, RHYTHM FCMS by Years of Previous Therapy (Between Group Differences)

Years of Therapy	No Change in FCM Level					Increase One FCM Level					Increase Greater Than One FCM Level				
	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12
None	9	6	*	*	*	13	12	*	*	*	11	11	*	*	*
1yr <	49	36	*	*	*	50	39	*	*	*	29	25	*	*	*
2 yrs	49	36	*	*	*	45	34	*	*	*	16	10	*	*	*
3-5 yrs	76	39	26	*	*	64	29	28	*	*	22	7	13	*	*
>5 yrs	72	*	22	26	21	41	*	13	15	10	19	*	7	8	4
Sub-total		117	48	26	21		114	41	15	10		53	20	8	4
Group total	255	212				213	180				97	85			

Table 34a: Progress in FLUENCY, RATE, RHYTHM FCMS by Years of Previous Therapy (Between Group Percent Differences)

Years of Therapy	No Change in FCM Level					Increase One FCM Level					Increase Greater Than One FCM Level				
	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12	K-12	K-3	4-6	7-8	9-12
None	4%	5%	*	*	*	6%	11%	*	*	*	11%	21%	*	*	*
1yr <	19%	31%	*	*	*	23%	34%	*	*	*	30%	47%	*	*	*
2 yrs	19%	31%	*	*	*	21%	30%	*	*	*	16%	19%	*	*	*
3-5 yrs	30%	33%	54%	*	*	30%	25%	68%	*	*	23%	13%	65%	*	*
>5 yrs	28%	*	46%	100%	100%	19%	*	32%	100%	100%	20%	*	35%	100%	100%
Sub-total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Group total %	45%					38%					17%				
% Sub-groups		55%	23%	12%	10%		63%	23%	8%	6%		62%	24%	9%	5%

**Functional Communication Measure
Articulation/Phonology/Intelligibility**

	Characteristics	Intelligibility	Social Interactions	Self-Monitoring
Level 1	Few productions of sounds	Speech not understood in any context	Affected	No self-monitoring
Level 2	Limited use of sounds	Speech rarely intelligible (10% or less) with familiar listener	Affected	Self-monitors with constant prompting
Level 3	Numerous atypical sound substitutions, omissions, distortions, or phonological error patterns	Speech occasionally intelligible (25% of single words and short phrases) with familiar listener	Affected	Self-monitors with frequent prompting
Level 4	Some atypical sound substitutions, omissions, distortions, or phonological error patterns	Speech often intelligible (50% of short phrases and sentences) with familiar listener	May be affected	Occasionally self-monitors without prompts
Level 5	Sound productions noticeably in error; phonological error patterns may be present	Conversational speech intelligible (75% of sentences and conversation) with familiar or unfamiliar listener	May be affected	Inconsistently self-monitors without prompts
Level 6	Few sound production or phonological error patterns	Speech intelligible most of the time (90% or greater of conversation) with familiar or unfamiliar listener	Usually not affected	Frequently self-monitors
Level 7	Culturally and developmentally appropriate sound production skills	Speech intelligible in all contexts	Not affected	Consistently self-monitors

FUNCTIONAL COMMUNICATION MEASURE

Articulation/Phonology/Intelligibility

- Level 1: The individual produces few sounds and no speech sounds for communication. Speech is not understood in any context. Social interactions are affected. No self monitoring occurs.
- Level 2: The individual has limited use of speech sounds. Speech attempts are rarely intelligible (10% or less) with a familiar listener. Social interactions are affected. Self-monitoring occurs with constant prompting.
- Level 3: The individual produces numerous atypical sound substitutions, omissions, distortions, or phonological error patterns. Speech attempts are occasionally intelligible (25% of single words and short phrases) with a familiar listener. Social interactions are affected. Self-monitoring occurs with frequent prompting.
- Level 4: The individual produces some atypical sound substitutions, omissions, distortions, or phonological error patterns. Speech attempts are often intelligible (50% of short phrases and sentences) with a familiar listener. Social interactions may be affected. Occasional self-monitoring occurs without prompts.
- Level 5: The individual produces speech sounds noticeably in error. Phonological error patterns may be present. Conversational speech is frequently intelligible (75% of sentences and conversation) with a familiar or unfamiliar listener. Social interactions may be affected. Inconsistent self-monitoring occurs without prompts.
- Level 6: The individual exhibits few sound or phonological error patterns. Speech attempts are intelligible most of the time (90% or greater of conversation) with a familiar or unfamiliar listener. Social interactions are usually not affected. Frequent self-monitoring occurs.
- Level 7: The individual produces culturally and developmentally appropriate sound production skills. Speech attempts are intelligible in all contexts. Social interactions are not affected. Consistent self-monitoring occurs.

**Functional Communication Measure
Language**

	Content (meaning)	Form (Linguists rules)	Use (context)	Self-Monitoring
Level 1	No overt response to any type of stimulus; does not use meaningful vocalizations or gestures	None	None	None
Level 2	Minimal comprehension even in familiar routines; restricted expressive vocabulary (words may or may not have meaning)	Minimal form of words and word combinations	Limited communication responses even with familiar communicator	Self-monitors with constant prompting
Level 3	Comprehends familiar routines; uses meaningful communication for basic needs	Telegraphic communication; uses content words but few function words	Initiates and responds; few communication exchanges; participates in routine situations with familiar communicator	Self-monitors with frequent prompting
Level 4	Comprehends and uses meaningful communication for familiar routines and some novel routines	Uses sentences with significant grammatical errors	Initiates and responds; participates in routine situations and some novel situations with familiar communicator	Occasionally self-monitors without prompts
Level 5	Comprehends and uses meaningful communication for a variety of routines; limited semantic knowledge restricts communication	Uses sentences with some grammatical errors	Initiates and responds; participates in routine situations and some novel situations with familiar communicators	Inconsistently self-monitors without prompts
Level 6	Comprehends and uses meaningful communication in a variety of routines with minimal errors	Uses sentences with minimal grammatical errors	Initiates and responds; participates in routine and novel situations with most communicators	Frequently self-monitors
Level 7	•Any language differences developmentally or culturally appropriate	•Appropriate	•Appropriate	Consistently self-monitors

FUNCTIONAL COMMUNICATION MEASURE

Language

- Level 1: The individual does not overtly respond to any type of stimulus and does not use meaningful vocalizations or gestures for communication. No self-monitoring occurs.
- Level 2: The individual exhibits minimal comprehension even in familiar routines and restricted expressive vocabulary (words may or may not have meaning). There is minimal form of words and word combinations. Communication responses are limited even with familiar communicators. Self-monitoring occurs with constant prompting.
- Level 3: The individual comprehends familiar routines and uses meaningful communication for basic needs. Communication is telegraphic with use of content words but few function words. The individual initiates and responds but few communication exchanges occur. Participation in routine situations with familiar communicators is evident. Self-monitoring occurs with frequent prompting.
- Level 4: This individual comprehends and/or uses meaningful communication for familiar routines and some novel routines. Sentence productions consist of significant grammatical errors. The individual initiates and responds, and participates in routine situations and some novel situations with familiar communicators. Occasional self-monitoring occurs without prompts.
- Level 5: The individual comprehends and/or uses meaningful communication for a variety of routines. Limited semantic knowledge restricts communication. Sentence productions consist of some grammatical errors. The individual initiates and responds, and participates in routine situations and some novel situations with familiar communicators. Inconsistent self-monitoring occurs without prompts.
- Level 6: The individual comprehends and/or uses meaningful communication in a variety of routines with minimal errors. Sentence productions consist of minimal grammatical errors. The individual initiates and responds, and participates in routine and novel situations with most communicators. Frequent self-monitoring occurs.
- Level 7: Any language differences are developmentally or culturally appropriate. Consistent self-monitoring occurs.

Functional Communication Measure Fluency

	Characteristics	Intelligibility	Social Interactions	Self Monitoring
Level 1	<ul style="list-style-type: none"> •Speech rate, rhythm and dysfluency <i>continuously</i> interferes with all communication •Dysfluency <i>constantly</i> intense and of long duration (≥ 4 sec.) •Secondary characteristics continuously occur 	Impaired in all speaking situations	Affected (avoids communication in all situations)	No self-monitoring
Level 2	<ul style="list-style-type: none"> •Speech rate, rhythm and dysfluency interferes <i>most of the time</i> with communication •Dysfluency intensity and duration brief (few seconds) •Secondary characteristics occur <i>most of the time</i> 	Impaired in most speaking situations	Affected (avoids communication in most situations)	Self-monitors with constant prompting
Level 3	<ul style="list-style-type: none"> •Speech rate, rhythm and dysfluency <i>frequently</i> interferes with communication •Dysfluency <i>frequently</i> intense •Secondary characteristics occur <i>frequently</i> 	Frequently impaired in speaking situations	Affected (avoids communication in some situations)	Self-monitors with frequent prompting
Level 4	<ul style="list-style-type: none"> •Speech rate, rhythm and dysfluency <i>often</i> interferes with communication •Dysfluency <i>often</i> intense •Secondary characteristics occur <i>often</i> 	Often impaired in speaking situations	May be affected	Occasionally self-monitors without prompts
Level 5	<ul style="list-style-type: none"> •Speech rate, rhythm and dysfluency <i>occasionally</i> interferes with communication •Dysfluency <i>occasionally</i> intense •Secondary characteristics occur <i>occasionally</i> 	Occasionally impaired speaking situations	May be affected	Inconsistently self-monitors without prompts
Level 6	<ul style="list-style-type: none"> •Speech rate, rhythm and fluency <i>rarely</i> interferes with communication •Dysfluencies of typical syllable repetitions •<i>Rare</i> occurrences of secondary characteristics 	Rarely impaired in speaking situations	Usually not affected	Frequently self-monitors
Level 7	<ul style="list-style-type: none"> •Speech rate, rhythm and fluency <i>typical</i> of developmental/general education expectations 	Not impaired in speaking situations	Not affected	Consistently self-monitors

Functional Communication Measure

Fluency

- Level 1: Characteristics of aberrant speech rate, rhythm, and/or fluency are observable, frequent, and interfere on a continuous basis with most, if not all communication interactions. Moments of dysfluency are almost constantly intense, of long duration (blocks or prolongations lasting 4 or more seconds), and often are accompanied by secondary behavioral symptoms (e.g., face and body tics). Intelligibility is impaired in all speaking situations. Social interactions are affected and communication situations avoided. No self-monitoring occurs.
- Level 2: Characteristics of aberrant speech rate, rhythm, and/or fluency are observable and interfere most of the time with many communication interactions. Moments of dysfluency are frequent and/or intense (blocks or prolongations last few seconds) and are accompanied by secondary behavioral symptoms most of the time. Intelligibility is impaired in most speaking situations. Social interactions are affected and most communication situations avoided. Self-monitoring occurs with constant prompting.
- Level 3: Characteristics of aberrant speech rate, rhythm, and/or fluency are observable and frequently interfere with communication interactions. Moments of dysfluency are frequently intense (blocks or prolongations) and are frequently accompanied by secondary behavioral symptoms. Intelligibility is frequently impaired in speaking situations. Social interactions are affected and some communication situations avoided. Self-monitoring occurs with frequent prompting.
- Level 4: Characteristics of aberrant speech rate, rhythm, and/or fluency are observable and often interfere with communication interactions. Moments of dysfluency are often intense (blocks or prolongations) and are often accompanied by secondary behavioral symptoms. Intelligibility is often impaired in speaking situations. Social interactions may be affected. Occasional self-monitoring occurs without prompts.
- Level 5: Characteristics of aberrant speech rate, rhythm, and/or fluency are observable and occasionally interfere with communication interactions. Moments of dysfluency are occasionally intense (blocks or prolongations) and are occasionally accompanied by secondary behavioral symptoms. Intelligibility is occasionally impaired in speaking situations. Social interactions may be affected. Inconsistent self-monitoring occurs without prompts.
- Level 6: Characteristics of aberrant speech rate, rhythm, and/or fluency are observable but rarely interfere with communication interactions. Moments of dysfluency are typically syllable repetitions and not intense blocks or prolongations. Secondary behavioral symptoms are rare. Intelligibility is rarely impaired in speaking situations. Social interactions are usually not affected. Frequent self-monitoring occurs.
- Level 7: Speech rate, rhythm, and/or dysfluency patterns for communication are within typical developmental and general education expectations. Intelligibility is not impaired in any speaking situation. Social interactions are not affected. Consistent self-monitoring occurs.

Functional Communication Measure Voice

	Characteristics	Intelligibility	Social Interactions	Self-Monitoring
Level 1	No vocal fold function for communication	Not understood in any context	Affected	No self-monitoring
Level 2	Voice characteristics rarely used appropriately: <ul style="list-style-type: none"> • pitch • loudness • quality • resonance (oral/nasal) 	Rarely intelligible with familiar listener	Affected	Self-monitors with constant prompting
Level 3	Voices characteristics occasionally used appropriately: <ul style="list-style-type: none"> • pitch • loudness • quality • nasality • resonance (oral/nasal) 	Intelligible for few words (25%) with familiar listener	Affected	Self-monitors with frequent prompting
Level 4	Voice characteristics often used appropriately: <ul style="list-style-type: none"> • pitch • loudness • quality • resonance (oral/nasal) 	Intelligible for words and some phrases (50%) with familiar listener	May be affected	Occasionally self-monitors without prompts
Level 5	Voice characteristics frequently used appropriately: <ul style="list-style-type: none"> • pitch • loudness • quality • resonance (oral/nasal) 	Intelligible for phrases and sentences (75%) with familiar or unfamiliar listener	May be affected	Inconsistently self-monitors without prompts
Level 6	Voice characteristics used appropriately most of the time : <ul style="list-style-type: none"> • pitch • loudness • quality • resonance (oral/nasal) 	Intelligible for majority of sentences and conversation (90% or greater) with familiar or unfamiliar listener	Usually not affected	Frequently self-monitors
Level 7	Appropriate use of all voice characteristics	Intelligible for all contexts	Not affected	Consistently self-monitors

FUNCTIONAL COMMUNICATION MEASURE

Voice

- Level 1: The individual exhibits few vocalizations, no vocal fold function for communication, and is not understood in any context. Social interactions are affected. No self-monitoring occurs.
- Level 2: The individual rarely uses appropriate pitch, loudness, quality, and resonance. Communication attempts are rarely intelligible with familiar listener. Social interactions are affected. Self-monitoring occurs with constant prompting.
- Level 3: The individual occasionally uses few appropriate voice characteristics of pitch, loudness, quality, and resonance for words (25%). Communication attempts are occasionally intelligible with a familiar listener. Social interactions are affected. Self-monitoring occurs with frequent prompting.
- Level 4: The individual often uses appropriate voice characteristics of pitch, loudness, quality, and resonance for words and phrases (50%). Communication attempts are often intelligible with a familiar listener. Social interactions may be affected. Occasional self-correction occurs.
- Level 5: The individual frequently uses appropriate voice characteristics of pitch, loudness, quality, and resonance for words, phrases, and sentences (75%). Communication attempts are frequently intelligible with a familiar or unfamiliar listener. Social interactions may be affected. Inconsistent self-monitoring occurs without prompts.
- Level 6: The individual uses appropriate voice characteristics of pitch, loudness, quality, and resonance most of the time for the majority of sentences and conversation (90% or greater). Communication attempts are intelligible most of the time with a familiar or unfamiliar listener. Social interactions are usually not affected. Frequent self-monitoring occurs.
- Level 7: The individual uses appropriate voice characteristics of pitch, loudness, quality, and resonance. Communication is intelligible in all contexts. Social interactions are not affected. Consistent self-monitoring occurs.

FCM: LANGUAGE COMPREHENSION

Intended audience: *Any student who exhibits difficulty with auditory communication comprehension.*

- LEVEL 1:** No understanding of verbal language.
- LEVEL 2:** 10-20% comprehension of single words in restricted contexts. Cannot participate in conversation.
- LEVEL 3:** 30-40% comprehension of words and phrases in restricted contexts. Minimal response as a conversational participant.
- LEVEL 4:** 50% comprehension of phrases and sentences in typical contexts. Moderate response as a conversational participant to one or two topics.
- LEVEL 5:** 60-70% comprehension of sentences and conversation in familiar contexts. Good participant in conversations for a limited number of topics.
- LEVEL 6:** 80-90% comprehension of conversation in broad contexts. Full participant in most conversations.
- LEVEL 7:** Normal comprehension of language.

Basic concepts, following directions

FCM: FLUENCY, RATE , OR RHYTHM

Intended audience: *Any student who presents with an atypical pattern of speech dysfluencies for chronological age, that interfere with communication. Rate, rhythm, and repetitions, should be considered as well as any secondary mannerisms, or behaviors.*

- LEVEL 1:** Behavioral abnormalities in speech rate, rhythm, and/or fluency are observable, frequent, and interfere on a continuous basis with most, if not all, communication interactions. Moments of disfluency are almost constantly intense, of long duration (blocks or prolongations that last about 4 or more seconds), and often are accompanied by secondary behavioral symptoms (e.g., face and body tics). The affective/cognitive component (i.e., feelings or perceptions about the disorder) is characterized by speech avoidance, speaking anxiety, and poor self- concept. The affective/cognitive component singly, or in combination with the behavioral abnormalities, precludes functional communication in most, if not all, speaking situations.
- LEVEL 2:** Behavioral abnormalities in speech rate, rhythm, and/or fluency frequently interfere with many communication interactions. Moments of disfluency are characterized by frequent and/or intense blocks, prolongations, and secondary behavioral symptoms. The affective/ cognitive component singly, or in combination with the behavioral abnormalities, frequently interferes with functional communication in many speaking situations.
- LEVEL 3:** Behavioral abnormalities in speech rate, rhythm, and/or fluency sometimes interfere with communication interactions. Moments of disfluency are sometimes intense (e.g., blocks and prolongations) and are sometimes accompanied by secondary behavioral symptoms. The affective/cognitive component singly, or in combination with the behavioral abnormalities, sometimes interferes with functional communication in some speaking situations.
- LEVEL 4:** Behavioral abnormalities in speech rate, rhythm, and/or fluency occasionally interfere with communication interactions. Moments of disfluency are occasionally intense (e.g., blocks and prolongations) and are occasionally accompanied by secondary behavioral symptoms. The affective/cognitive component singly, or in combination with the behavioral abnormalities, occasionally interferes with functional communication in some speaking situations.
- LEVEL 5:** Behavioral abnormalities in speech rate, rhythm, and/or fluency are observable but seldom interfere with communication interactions. Moments of disfluency are seldom intense and are seldom accompanied by secondary behavioral symptoms. The affective/cognitive component singly, or in combination with the behavioral abnormalities, seldom interfere with functional communication.
- LEVEL 6:** Behavioral abnormalities in speech rate, rhythm, and/or fluency are observable but rarely interfere with communication interactions. Moments of disfluency are typically syllable repetitions and not intense blocks or long prolongations. Secondary behavioral symptoms are rare. The affective/ognitive component rarely interferes with functional communication.
- LEVEL 7:** Speech rate, rhythm, and/or fluency patterns for communication are within normal limits. The affective/cognitive component is within normal limits in all communication situations.

**FCM: AUGMENTATIVE/ALTERNATIVE
COMMUNICATION COMPREHENSION**

Intended Audience: *Students who use a symbolic system such as an electronic or manual device as their primary means of input. Do not use this FCM if the student receives auditory input but relies on the symbolic system only as the means of expression.*

- LEVEL 1:** No comprehension of augmentative/alternative communication.
- LEVEL 2:** Limited comprehension of augmentative/alternative communication relative to events in the environment. Always requires environmental cuing and maximum assistance to comprehend. No self-monitoring.
- LEVEL 3:** Comprehension of augmentative/alternative communication is limited to routine events in restricted contexts and does not include comprehension of novel communication. Consistent environmental cuing and assistance is required to comprehend. Occasional self-monitoring.
- LEVEL 4:** Comprehension of augmentative/alternative communication is limited to routine events, simple novel communication, and some more complex forms. Intermittent cuing in the form of a repetition or rephrasing of stimuli or redirection and assistance is required to comprehend. Occasional self-monitoring.
- LEVEL 5:** Comprehension of augmentative/alternative communication is good but limited by complexity of form, content, and/or use. Occasional cuing and/or assistance is required. Occasional self-monitoring.
- LEVEL 6:** Comprehension of augmentative/alternative communication is effective for events in the environment in most situations, although slight difficulty may occur in ability to self-monitor. Occasional cuing is required. Frequent self-monitoring is observed.
- LEVEL 7:** Comprehension of augmentative/alternative communication is functional for events in the environment in all situations.

FCM: AUGMENTATIVE/ALTERNATIVE COMMUNICATION PRODUCTION

Intended audience: *Students who use some type of symbolic manual or electronic system as a primary means of expression. You may score this FCM as well as the Language Production, Voice Disorder, or Articulation/Intelligibility, if applicable, if the student uses a combination of both oral and augmentative/alternative communication and goals have been established in any of these areas.*

- LEVEL 1:** No augmentative/alternative communication in any environment.
- LEVEL 2:** May produce occasional augmentative/alternative communication that is primarily nonfunctional in the environment. No self-monitoring.
- LEVEL 3:** May produce occasional meaningful and functional augmentative/alternative communication in restricted contexts. Occasional self-monitoring.
- LEVEL 4:** Uses simple routine and novel augmentative/alternative communication to meet functional needs in restricted contexts. Communication breakdown is frequent for more complex forms and ideas. Occasional self-monitoring.
- LEVEL 5:** Production of augmentative/alternative communication is functional but limited in complexity of form, content, and/or use in familiar contexts. Occasional self-monitoring.
- LEVEL 6:** Production of augmentative/alternative communication is effective for events in the environment, although slight difficulty may occur. Frequent self-monitoring.
- LEVEL 7:** Production of augmentative/alternative communication is functional for events in environment in all situations.

FCM: COGNITIVE COMMUNICATION

Intended audience: *Any student presenting with a traumatic brain injury or other acquired disorder or students presenting with a developmental delay or disability and whose treatment plan specifically addresses cognitive goals.*

- LEVEL 1:** No measurable play/cognitive abilities. May exhibit involuntary actions unrelated to the environment.
- LEVEL 2:** Demonstrates one way of responding to 10-20% of opportunities in restricted contexts. Even with consistent cuing and facilitation may not respond. No self-monitoring.
- LEVEL 3:** Demonstrates appropriate cognitive responsiveness of limited complexity in 30-40% of opportunities in restricted contexts. Requires frequent cuing and facilitation to respond appropriately to events in the environment. Occasional self-monitoring.
- LEVEL 4:** Demonstrates appropriate cognitive responsiveness of limited complexity in 40-50% of opportunities in familiar contexts. Requires frequent cuing and facilitation to respond appropriately to events in the environment. Occasional self-monitoring.
- LEVEL 5:** Demonstrates appropriate cognitive responsiveness of limited to moderate complexity in 60-70% of opportunities in familiar contexts. Requires frequent cuing and facilitation to respond appropriately to events in the environment. Occasional self-monitoring.
- LEVEL 6:** Demonstrates appropriate cognitive responsiveness of moderate complexity to 80-90% of the opportunities in broad contexts. Requires occasional cuing and facilitation to respond appropriately to events in the environment. Frequent self-monitoring. (*familiar and unfamiliar contexts*)
- LEVEL 7:** Demonstrates normal response in all situations.

FCM: DYSPHAGIA/SWALLOWING*Saliva management*

Intended audience: *Any student presenting with feeding or swallowing difficulties. This could include students with an overall developmental delay, students with difficulty in sensory integration, students with an organically based disorder such as cerebral palsy, or students with an acquired disorder resulting in feeding and/or swallowing difficulties.*

- LEVEL 1:** Swallowing is not functional for nutrition or for secretion management. Protective reflexes, such as gagging and coughing, may not be present or may be so strong as to preclude feeding. Behavioral response may be so severe as to preclude feeding. NPO secondary to risk of aspiration.
- LEVEL 2:** Some swallowing is possible but not for nutritional needs. Secretion management may be a frequent problem. Hypersensitivity with or without gag/cough/vomit responses frequently interferes with feeding. Behavioral responses are always present and limit feeding to minimal extent.
- LEVEL 3:** Swallowing is functional for a portion of nutritional needs but only with a simplified or modified diet and swallowing management precautions. Secretion management is intermittent. Hypersensitivity with or without gag/cough/vomit responses is often present. Behavioral responses are frequent during the feeding process and require intervention.
- LEVEL 4:** Swallowing is adequate/functional for meeting nutritional needs with a simplified or modified diet and supervision to ensure use of compensatory techniques/safety precautions. Secretion management is intermittent. Hypersensitivity with or without gag/cough/vomit is occasional. Behavioral responses interfering with the feeding process are occasional and require supervision and/or intervention.
- LEVEL 5:** Swallowing is adequate/functional for meeting nutritional needs with a simplified or modified diet, with or without modifications and supervision to ensure use of compensatory techniques/safety precautions. Secretion management is consistent. Hypersensitivity with or without gag/cough/vomit is infrequent. Behavioral responses rarely interfere with the feeding process.
- LEVEL 6:** Swallowing is adequate/functional for meeting nutritional needs with an appropriate diet, but compensatory techniques/safety precautions may be needed as well as additional time. Secretion management is consistent. Hypersensitivity with or without gag/cough/vomit is not observed. Behavioral responses are not observed.
- LEVEL 7:** Swallowing is normal for meeting nutritional needs with an appropriate diet in all situations.

**FCM: CENTRAL AUDITORY PROCESSING: COMPREHENSION OF
SPEECH AND INFLUENCE OF NOISE**

Intended audience: *Any student presenting with deficits in the information processing of audible signals, including perceptual, cognitive, and linguistic factors, not attributed to impaired peripheral hearing sensitivity or intellectual impairment.*

- LEVEL 1:** Generally misunderstands what is said, even under quiet listening conditions.
- LEVEL 2:** Often misunderstands what is said, even under quiet listening conditions.
- LEVEL 3:** Sometimes misunderstands what is said, even under quiet listening conditions.
- LEVEL 4:** Generally misunderstands what is said, under noisy listening conditions.
- LEVEL 5:** Often misunderstands what is said, under noisy listening conditions.
- LEVEL 6:** Occasionally misunderstands what is said, under noisy listening conditions.
- LEVEL 7:** Almost always understands what is said, even under noisy listening conditions.

Any student with central auditory processing problem

ASHA: National Center for Treatment Effectiveness in Communication Disorders. This K-12 Education FCM is being field tested from September 1997-May 1998 and will be under testing for statistical validity and reliability during this academic year.

FCM: HEARING SENSITIVITY

Intended audience: *Any hearing impaired student who is seen by a speech-language pathologist for aural habilitation/rehabilitation. These are unaided hearing levels based on the audiogram.*

- LEVEL 1:** No measurable hearing at the maximum output of the equipment. Most likely will have no awareness of sound.
- LEVEL 2:** Thresholds must be greater than 90 dB HL. May hear some loud sounds but is aware of vibrations more than tones. Usually cannot understand amplified speech.
- LEVEL 3:** Hears at thresholds between 71 and 90 dB HL. May hear loud voices about 12 inches from the ear. May be able to hear shouted or amplified speech.
- LEVEL 4:** Hears at thresholds between 56 and 71 dB HL. Conversation must be loud to be heard. Even with hearing aids, child will have difficulty understanding in many school situations.
- LEVEL 5:** Hears at thresholds between 41 and 55 dB HL. Frequent difficulty with normal speech. Understands speaker face-to-face at a distance of 3 to 5 feet.
- LEVEL 6:** Mild loss: Hears at thresholds between 21 and 40 dB HL. Difficulty with faint or distant speech.
- LEVEL 7:** Hears at thresholds between 0 and 20 dB HL. No significant difficulty hearing even faint speech.

FCM: HEARING LOSS: AWARENESS/UNDERSTANDING MANAGEMENT

Intended audience: *Any hearing impaired student seen for aural habilitation/ rehabilitation.*

- LEVEL 1:** No awareness of hearing loss and impact on self.
- LEVEL 2:** Aware of audiological evaluation and participates in evaluation.
- LEVEL 3:** Can explain/describe his/her audiogram. Can give examples of what he/she can/cannot hear.
- LEVEL 4:** Describes nature, degree, extent of his/her hearing loss. Can describe both easy and difficult listening situations. Fifty percent voice production at the phrase/sentence level in typical contexts. Occasional self-monitoring.
- LEVEL 5:** Describes the nature, degree, and extent of hearing loss and how hearing aids and/or other devices assist.
- LEVEL 6:** Describes hearing loss. Can describe how it affects his/her speaking ability and listening ability.
- LEVEL 7:** Describes nature, degree, and extent of hearing loss and how it impacts self in various contexts (e.g., learning, socially or employment). Describes and participates in management planning. Advocates for self in management.

FCM: GAIN FROM AMPLIFICATION

Intended audience: *Any hearing impaired student who has been fit with a hearing aid or other amplification device and is seen by the speech-language pathologist for aural habilitation/rehabilitation. These are aided threshold levels.*

- LEVEL 1:** Unable to benefit from amplification.
- LEVEL 2:** Aided thresholds within profound hearing-loss range. Thresholds greater than 90 dB HL.
- LEVEL 3:** Aided thresholds within severe hearing-loss range. Thresholds between 71 and 90 dB HL.
- LEVEL 4:** Aided thresholds within the moderate-to-severe hearing-loss range. Thresholds between 56 and 71dB HL.
- LEVEL 5:** Aided thresholds within the moderate hearing-loss range. Thresholds between 41 and 55 dB HL.
- LEVEL 6:** Aided thresholds within the mild hearing-loss range. Thresholds between 21 and 40 dB HL.
- LEVEL 7:** Aided thresholds within the normal range of hearing. Thresholds between 0 and 20 dB HL.

FCM: HEARING AIDS: USE/COMMUNICATION STRATEGIES

Intended audience: *Any student who wears a hearing aid and is being seen for aural habilitation/rehabilitation.*

- LEVEL 1:** Nonfunctional in all settings. No use of hearing aid(s) in any environment. No awareness of conversation. No awareness of presence of sounds.
- LEVEL 2:** Responds with cuing in 10-20% of opportunities in select situations demonstrating awareness of presence and cessation of sound of shouted speaking within 3-5 feet.
- LEVEL 3:** Responds independently in 20-40% of opportunities in select environments/situations in alerting to awareness of sounds and speakers within 3 feet. Seeks source of sound. Participates in instructional communication with considerable cuing and facilitation.
- LEVEL 4:** Demonstrates appropriate responses in 40-60% of opportunities in familiar instructional context. Participates in instructional discourse with cuing and conversation facilitation within familiar instructional contexts. Requires assistance in application of self-initiated communication management strategies.
- LEVEL 5:** Demonstrates appropriate responses in 60-80% of opportunities. Participates in instructional discourse. Participates in 2-3 way conversation discourse. Occasional use of communication management strategies.
- LEVEL 6:** Uses hearing aids in all settings and demonstrates appropriate responses in 80-90% of opportunities. Participates in conversation in broad contexts and in multi-speaker situations. Frequently initiates communication management strategies.
- LEVEL 7:** Uses hearing aids and demonstrates appropriate responses in a wide variety of communication situations. Can manage a poor listening situation with assertiveness, requesting repeat, expansion, clarification, and suggestions.

Cochlear implant students

ASHA: National Center for Treatment Effectiveness in Communication Disorders. This K-12 Education FCM is being field tested from September 1997-May 1998 and will be under testing for statistical validity and reliability during this academic year.

**FCM: HEARING AIDS/ASSISTIVE LISTENING DEVICES:
OPERATION AND MANAGEMENT**

Intended audience: *Any student who wears a hearing aid or uses an ALD and is being seen for aural habilitation/rehabilitation.*

- LEVEL 1:** Nonfunctional. No comprehension of hearing aid(s); unable to physically tolerate the hearing aid(s).
- LEVEL 2:** Physically tolerates the hearing aid(s) and wears it. Unable to adjust controls; unaware of aid(s) being on or off; unaware of unusual sounds.
- LEVEL 3:** Unable to manipulate hearing aid(s) controls independently. Is aware of aid(s) being on/off and can notify someone so aid(s) can be adjusted.
- LEVEL 4:** Turns on and adjusts hearing aid(s) in restricted contexts. Occasional self-monitoring.
- LEVEL 5:** Uses and adjusts hearing aid(s) in familiar contexts. Uses features (telecoil, audio-input) with assistive listening devices.
- LEVEL 6:** Uses hearing aid(s) in broad contexts. Uses features with assistive listening devices. Frequent self-monitoring. Troubleshoots, cleans, and maintains hearing aid(s) with supervision.
- LEVEL 7:** Uses and adjusts hearing aid(s) in all listening situations. Uses features according to situational need and opportunity. Independently maintains, cleans, and troubleshoots. Can describe malfunctions to others in order to repair.

Disorder Codes for Speech-Language Pathology

100.0 SPEECH AND LANGUAGE WITHIN NORMAL LIMITS

110.0 COMMUNICATION DIFFERENCES

- 110.1 Communication Enhancement
- 110.2 Accent Reduction
- 110.3 Other

120.0 LANGUAGE DISORDERS

- 121.0 Language Comprehension Disorders
 - 121.2 Aphasia/Dysphasia (Acquired)
 - 121.3 Developmental
 - 121.4 Dyslexia
 - 121.5 Dyscalculia
 - 121.6 Mixed, undifferentiated, or unspecified language comprehension disorder

- 122.0 Language Production Disorders
 - 122.2 Aphasia/Dysphasia (Acquired)
 - 122.3 Developmental
 - 122.4 Dyslexia/Dyscalculia
 - 122.5 Dysgraphia
 - 122.6 Mixed, undifferentiated, or unspecified language production disorder

- 123.0 Augmentative (primarily nonverbal) Communication

- 124.0 Cognitive Communication Disorders
 - 124.1 Confused Language
 - 124.2 Language of Dementia
 - 124.3 Mixed (e.g., dysphasia embedded within confusion, dementia, etc.)
 - 124.4 Mental Retardation
 - 124.5 Cognitive Communication Disorder, unspecified

- 125.0 Disorders of Organization/Language/Cognition/Pragmatics

SPEECH-LANGUAGE AND RELATED DISORDER CODES (CONTINUED):

126.0 Prelinguistic Conditions

- 126.1 Interaction, attachment, play
- 126.2 Pragmatics

130.0 SPEECH DISORDERS

131.0 Motor Speech Disorders

- 131.1 Dysarthria
- 131.2 Apraxia
- 131.3 Dysarthria and Apraxia (Mixed)

132.0 Structurally Based Speech Disorders

- 132.1 Dental
- 132.2 Lingual
- 132.3 Palatal
- 132.4 Facial
- 132.5 Mixed

133.0 Developmental Speech Disorders (e.g., delayed or disordered phonologic development)

134.0 Psychogenic Speech Disorders

135.0 Mixed Speech Disorders, unspecified

140.0 SPEECH RATE, RHYTHM, OR FLUENCY DISORDERS

- 140.1 Stuttering
- 140.2 Cluttering
- 140.3 General Oral Inaccuracy
- 140.4 Dysprosody

150.0 VOICE DISORDERS

- 150.1 Neurogenic
- 150.2 Structural (e.g., laryngectomy)
- 150.3 Hyperfunctional
- 150.4 Velopharyngeal Insufficiency/Inadequacy
- 150.5 Mixed
- 150.6 Voice Disorders, unspecified

SPEECH-LANGUAGE AND RELATED DISORDER CODES (CONTINUED):**160.0 RESONANCE DISORDERS**

- 160.1 Neurogenic
- 160.2 Structural (e.g., cleft palate)
- 160.3 Mixed
- 160.4 Resonance Disorders, unspecified

170.0 RESPIRATORY DISORDERS (affecting 130.0-160.0)**180.0 ORAL/PHARYNGEAL (SWALLOWING) DISORDERS**

- 180.1 Prefeeding

- 181.0 Dysphagia
 - 181.1 Oral Phase
 - 181.2 Pharyngeal Phase
 - 181.3 Esophageal Phase
 - 181.4 Mixed Dysphagia, unspecified

- 182.0 Orofacial Myofunctional Disorders

190.0 UNLISTED CATEGORY**200.0 RESULTS INCONCLUSIVE**

- 200.1 Could Not Test
- 200.2 Could Not Determine

IOWA PUBLIC SCHOOLS

DATA REPORT CARD

1997-98 FIELD TRIAL

**K – 12 (SCHOOLS) COMPONENT
GRADES 4 - 6**

**NATIONAL OUTCOMES MEASUREMENT SYSTEM (NOMS)
FOR SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY**

***NATIONAL CENTER FOR TREATMENT EFFECTIVENESS
IN COMMUNICATION DISORDERS***

AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION

Iowa State Report

Grades 4 - 6

September 10, 1998

Table 1: Gender of Students Classified as Having a Communication Disorder

SEX	N	%
Male	2,092	62.1%
Female	1,249	37.1%
Missing	30	0.9%
Total	3,371	100%

Table 2: Frequency of FCM by Race/Ethnicity

6 most frequently used FCMs (+ Voice Production)	Race/ Ethnicity													
	Black		Asian		White		Nat. Am.		Hispanic		Other		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Articulation	46	2.3%	49	2.5%	1,836	91.8%	12	0.6%	38	1.9%	18	0.9%	1,999	100%
Language Production	103	6.6%	24	1.5%	1,347	86.7%	9	0.6%	47	3.0%	23	1.5%	1,553	100%
Language Comprehension	83	6.5%	23	1.8%	1,108	86.6%	5	0.4%	41	3.2%	20	1.6%	1,280	100%
Fluency, Rate, or Rhythm	2	1.3%	3	1.9%	149	95.5%	1	0.6%	1	0.6%	0	-	156	100%
Augmentative Comm. Production	4	3.8%	3	2.9%	89	85.6%	4	3.8%	2	1.9%	2	1.9%	104	100%
Cognitive Communication	9	7.6%	3	2.5%	100	84.0%	2	1.7%	5	4.2%	0	-	119	100%
Voice	5	7.7%	3	4.6%	51	78.5%	0	-	5	7.7%	1	1.5%	65	100%

Table 3: Frequency of Primary Communication Disorder by Race

5 Most Common Categories of Primary Communication Disorder	Race/ Ethnicity													
	Black		Asian		White		Nat. Am.		Hispanic		Other		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Developmental Speech	26	1.8%	28	1.9%	1,384	93.7%	6	0.4%	24	1.6%	9	0.6%	1,477	100%
Language Production	29	5.9%	5	1.0%	430	88.7%	4	0.8%	12	2.5%	5	1.0%	485	100%
Language Comprehension	40	7.5%	7	1.3%	453	84.9%	2	0.4%	22	4.1%	9	1.7%	533	100%
Organization/Language/Cognition/Pragmatics	22	5.3%	11	2.6%	367	88.0%	1	0.2%	11	2.6%	5	1.2%	417	100%
Cognitive Communication	10	9.1%	1	0.9%	94	85.5%	1	0.9%	2	1.8%	2	1.8%	110	100%

Table 4: Average Therapy Time by Special Education/Related Services Groups

Special Education Group	N	Mean Hours of Treatment
Autism	87	15.2
Deafness	18	*
Hearing Impairment	50	22.0
Mental Retardation	573	14.1
Multiple Disabilities	86	15.0
Orthopedic Impairment	8	*
Other Health Impairment	3	*
Serious Emotional Disturbance	59	13.4
Specific Learning Disability	1,077	14.4
Speech-Language Impairment Only	1,285	10.9
Traumatic Brain Injury	11	*
Visual Impairment	1	*
Other	72	14.8

**It is ASHA's policy not to publish statistics based on cell sizes of under 25*

Table 5: Progress in FCMs

FCM	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Articulation	914	45.6%	836	41.7%	254	12.7%	2,004	100%
Aug. Comm. Comp.	40	63.5%	22	34.9%	1	1.6%	63	100%
Aug. Comm. Prod.	54	51.9%	37	35.6%	13	12.5%	104	100%
Cognitive Comm.	69	57.9%	37	31.1%	13	10.9%	119	100%
Dysphagia	*	*	*	*	*	*	1	100%
Fluency	70	44.6%	60	38.2%	27	17.2%	157	100%
Language Comp.	659	51.4%	495	38.6%	128	9.9%	1,282	100%
Language Prod.	830	53.3%	582	37.4%	145	9.3%	1,557	100%
Voice Production	29	43.9%	23	34.8%	14	21.2%	66	100%
Cent. Aud. Process.	*	*	*	*	*	*	22	100%
Hearing Sensitivity	19	73.1%	7	26.9%	0	-	26	100%
Hearing Loss	*	*	*	*	*	*	20	100%
Gain From Amplif.	*	*	*	*	*	*	16	100%
Hearing Aid Use	*	*	*	*	*	*	22	100%
Hearing Aids/ALD	*	*	*	*	*	*	15	100%

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Table 6: Change in Functional Status Measure from Entrance to Discharge as Assessed by SLPs and Teachers for Question 5a: “ Student communicates wants, needs, ideas, and concepts to others either verbally or by use of an augmentative/alternative communication system.”

Status Measures	SLP				TEACHER			
	Entrance		Discharge		Entrance		Discharge	
	N	%	N	%	N	%	N	%
No basis for rating	38	1.1%	6	0.2%	14	0.4%	14	0.4%
Does not do	16	0.5%	16	0.5%	53	1.6%	39	1.2%
Does w/ maximal assist.	126	3.8%	69	2.1%	195	5.9%	83	2.5%
Does w/ mod to max assist.	204	6.1%	125	3.7%	303	9.1%	195	5.9%
Does w/ moderate assist.	400	11.9%	237	7.1%	345	10.4%	307	9.2%
Does w/ min to mod assist.	660	19.7%	500	14.9%	488	14.7%	412	12.4%
Does w/ minimal assist.	811	24.2%	844	25.2%	770	23.1%	746	22.4%
Does without assistance	1,100	32.8%	1,558	46.4%	1,163	34.9%	1,535	46.1%
Total	3,355	100%	3,355	100%	3,331	100%	3,331	100%

Table 7: Change in Functional Status Measure from Entrance to Discharge as Assessed by SLPs and Teachers for Question 5b: “Student demonstrates appropriate listening skills within the educational environment.”

Status Measures	SLP				TEACHER			
	Entrance		Discharge		Entrance		Discharge	
	N	%	N	%	N	%	N	%
No basis for rating	139	4.1%	36	1.1%	14	0.4%	16	0.5%
Does not do	16	0.5%	17	0.5%	71	2.1%	37	1.1%
Does w/ maximal assist.	126	3.8%	76	2.3%	267	8.0%	127	3.8%
Does w/ mod to max assist.	224	6.7%	128	3.8%	389	11.7%	254	7.6%
Does w/ moderate assist.	405	12.1%	277	8.3%	424	12.8%	349	10.5%
Does w/ min to mod assist.	588	17.5%	570	17.0%	536	16.1%	540	16.2%
Does w/ minimal assist.	806	24.1%	846	25.2%	753	22.6%	770	23.2%
Does without assistance	1,047	31.2%	1,401	41.8%	871	26.2%	1,232	37.1%
Total	3,351	100%	3,351	100%	3,325	100%	3,325	100%

Table 8: “Student speaks without frustration” as Evaluated by SLPs and Teachers

Response	SLP				TEACHER			
	At Entrance		At Discharge		At Entrance		At Discharge	
	N	%	N	%	N	%	N	%
Strongly Agree	328	9.8%	668	19.9%	467	13.9%	641	19.0%
Agree	1,548	46.0%	1,727	51.4%	1,453	43.2%	1,614	47.9%
Neutral	390	11.6%	292	8.7%	382	11.3%	336	10.0%
Disagree	874	26.0%	531	15.8%	803	23.8%	593	17.6%
Strongly Disagree	172	5.1%	100	3.0%	212	6.3%	133	4.0%
Not Applicable	50	1.5%	44	1.3%	50	1.5%	50	1.5%
Total	3,362	100%	3,362	100%	3,367	100%	3,367	100%

Table 9: “Student’s speech does not call attention” as Evaluated by SLPs and Teachers

Response	SLP				TEACHER			
	At Entrance		At Discharge		At Entrance		At Discharge	
	N	%	N	%	N	%	N	%
Strongly Agree	136	4.1%	442	12.6%	325	9.7%	500	14.9%
Agree	692	20.6%	1,106	32.9%	950	28.3%	1,131	33.7%
Neutral	284	8.5%	407	12.1%	378	11.2%	412	12.3%
Disagree	1,695	50.5%	1,097	32.7%	1,146	34.1%	948	28.2%
Strongly Disagree	501	14.9%	278	8.3%	511	15.2%	325	9.7%
Not Applicable	50	1.5%	48	1.4%	51	1.5%	45	1.3%
Total	3,358	100%	3,358	100%	3,361	100%	3,361	100%

Table 10: “Student speaks loudly enough” as Evaluated by SLPs and Teachers

Response	SLP				TEACHER			
	At Entrance		At Discharge		At Entrance		At Discharge	
	N	%	N	%	N	%	N	%
Strongly Agree	392	11.7%	706	21.0%	624	18.5%	783	23.2%
Agree	2,126	63.3%	2,136	63.6%	1,777	52.7%	1,890	56.1%
Neutral	337	10.0%	209	6.2%	253	7.5%	215	6.4%
Disagree	359	10.7%	209	6.2%	496	14.7%	327	9.7%
Strongly Disagree	74	2.2%	43	1.3%	151	4.5%	97	2.9%
Not Applicable	71	2.1%	56	1.7%	69	2.0%	58	1.7%
Total	3,359	100%	3,359	100%	3,370	100%	3,370	100%

Table 11: “Student demonstrates improved social and educational skills due to intervention by the speech-language pathologist.” as Evaluated by SLPs and Teachers at discharge

Response	SLP		TEACHER	
	N	%	N	%
Strongly Agree	508	15.2%	635	19.1%
Agree	2,050	61.4%	1,793	53.9%
Neutral	652	19.5%	691	20.8%
Disagree	73	2.2%	110	3.3%
Strongly Disagree	15	0.4%	32	1.0%
Not Applicable	43	1.3%	63	1.9%
Total	3,341	100%	3,324	100%

Table 12: Progress in ARTICULATION FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	577	45.0%	549	42.9%	155	12.1%	1,281	100%
Female	329	46.5%	280	39.6%	98	13.9%	707	100%

Table 13: Progress in LANGUAGE PRODUCTION FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	488	53.1%	355	38.6%	76	8.3%	919	100%
Female	330	53.1%	224	36.1%	67	10.8%	621	100%

Table 14: Progress in LANGUAGE COMPREHENSION FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	381	51.3%	287	38.7%	74	9.9%	742	100%
Female	271	51.4%	205	38.9%	51	9.7%	527	100%

Table 15: Progress in FLUENCY, RATE, OR RHYTHM FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	52	43.3%	47	39.2%	21	17.5%	120	100%
Female	16	45.7%	13	37.1%	6	17.1%	35	100%

Table 16: Progress in AUGMENTATIVE COMMUNICATION COMPREHENSION FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	25	65.8%	12	31.6%	1	2.6%	38	100%
Female	*	*	*	*	*	*	23	100%

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Table 17: Progress in VOICE PRODUCTION FCM by gender

Gender	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Male	23	48.9%	16	34.0%	8	17.0%	47	100%
Female	*	*	*	*	*	*	19	100%

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Table 18: Progress in ARTICULATION FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	23	50.0%	17	36.9%	6	13.0%	46	100%
Asian	25	51.0%	18	36.7%	6	12.2%	49	100%
White	837	45.6%	771	41.9%	228	12.4%	1,836	100%
Native American	*	*	*	*	*	*	12	100%
Hispanic	16	42.1%	17	44.7%	5	13.2%	38	100%
Other	*	*	*	*	*	*	18	100%

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Table 19: Progress in LANGUAGE PRODUCTION FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	54	52.4%	37	35.9%	12	11.7%	103	100%
Asian	*	*	*	*	*	*	24	100%
White	713	52.9%	506	37.6%	128	9.5%	1,347	100%
Native American	*	*	*	*	*	*	9	100%
Hispanic	31	65.9%	15	31.9%	1	2.1%	47	100%
Other	*	*	*	*	*	*	23	100%

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Table 20: Progress in LANGUAGE COMPREHENSION FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	46	55.4%	28	33.7%	9	10.8%	83	100%
Asian	*	*	*	*	*	*	23	100%
White	553	49.9%	444	40.1%	111	10.0%	1,108	100%
Native American	*	*	*	*	*	*	5	100%
Hispanic	32	78.0%	7	17.1%	2	4.9%	41	100%
Other	*	*	*	*	*	*	20	100%

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Table 21: Progress in FLUENCY, RATE, OR RHYTHM FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	*	*	*	*	*	*	2	100%
Asian	*	*	*	*	*	*	3	100%
White	66	44.3%	58	38.9%	25	16.8%	149	100%
Native American	*	*	*	*	*	*	1	100%
Hispanic	*	*	*	*	*	*	1	100%

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Table 22: Progress in AUGMENTATIVE COMMUNICATION COMPREHENSION FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	*	*	*	*	*	*	3	100%
Asian	*	*	*	*	*	*	2	100%
White	35	66.0%	17	32.1%	1	1.9%	53	100%
Native American	*	*	*	*	*	*	1	100%
Hispanic	*	*	*	*	*	*	2	100%
Other	*	*	*	*	*	*	2	100%

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Table 23: Progress in VOICE PRODUCTION FCM by Race/Ethnicity

Race/ Ethnicity	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
African American	*	*	*	*	*	*	5	100%
Asian	*	*	*	*	*	*	3	100%
White	23	45.1%	17	33.3%	11	21.6%	51	100%
Hispanic	*	*	*	*	*	*	5	100%
Other	*	*	*	*	*	*	1	100%

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Table 24: Progress in ARTICULATION FCM by Eligibility for Special Education/Related Services

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Autism	*	*	*	*	*	*	13	100%
Deafness	*	*	*	*	*	*	15	100%
Hearing Impairment	21	60.0%	13	37.1%	1	2.9%	35	100%
Mental Retardation	146	51.4%	114	40.1%	24	8.5%	284	100%
Multiple Disabilities	*	*	*	*	*	*	24	100%
Orthopedic Impairment	*	*	*	*	*	*	6	100%
Other Health Impairment	*	*	*	*	*	*	2	100%
Serious Emotional Disturbance	18	58.1%	11	35.5%	2	6.4%	31	100%
Specific Learning Disability	234	50.1%	180	38.5%	53	11.3%	467	100%
Speech-Language Impairment Only	428	39.9%	479	44.7%	165	15.4%	1,072	100%
Traumatic Brain Injury	*	*	*	*	*	*	2	100%
Other	17	48.6%	15	42.9%	3	8.6%	35	100%

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Table 25: Progress in LANGUAGE PRODUCTION FCM by Eligibility for Special Education/Related Services

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Autism	33	53.2%	24	38.7%	5	8.1%	62	100%
Deafness	*	*	*	*	*	*	16	100%
Hearing Impairment	17	51.5%	12	36.4%	4	12.1%	33	100%
Mental Retardation	235	57.2%	150	36.5%	26	6.3%	411	100%
Multiple Disabilities	30	62.5%	14	29.2%	4	8.3%	48	100%
Orthopedic Impairment	*	*	*	*	*	*	1	100%
Serious Emotional Disturbance	19	55.9%	12	35.3%	3	8.8%	34	100%
Specific Learning Disability	368	52.3%	256	36.4%	79	11.2%	703	100%
Speech-Language Impairment Only	77	43.3%	83	46.6%	18	10.1%	178	100%
Traumatic Brain Injury	*	*	*	*	*	*	6	100%
Visual Impairment	*	*	*	*	*	*	1	100%
Other	22	47.8%	22	47.8%	2	4.3%	46	100%

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Table 26: Progress in LANGUAGE COMPREHENSION FCM by Eligibility for Special Education/Related Services

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Autism	25	51.0%	18	36.7%	6	12.2%	49	100%
Deafness	*	*	*	*	*	*	16	100%
Hearing Impairment	15	60.0%	9	36.0%	1	4.0%	25	100%
Mental Retardation	187	54.8%	126	36.9%	28	8.2%	341	100%
Multiple Disabilities	24	48.0%	21	42.0%	5	10.0%	50	100%
Orthopedic Impairment	*	*	*	*	*	*	1	100%
Other Health Impairment	*	*	*	*	*	*	1	100%
Serious Emotional Disturbance	13	43.3%	13	43.3%	4	13.3%	30	100%
Specific Learning Disability	287	50.9%	219	38.9%	57	10.1%	563	100%
Speech-Language Impairment Only	62	42.5%	67	45.9%	17	11.6%	146	100%
Traumatic Brain Injury	*	*	*	*	*	*	7	100%
Visual Impairment	*	*	*	*	*	*	1	100%
Other	20	57.1%	11	31.4%	4	11.4%	35	100%

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Table 27: Progress in FLUENCY, RATE, OR RHYTHM FCM by Eligibility for Special Education/Related Services

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Autism	*	*	*	*	*	*	2	100%
Mental Retardation	15	60.0%	3	12.0%	7	28.0%	25	100%
Multiple Disabilities	*	*	*	*	*	*	5	100%
Orthopedic Impairment	*	*	*	*	*	*	2	100%
Serious Emotional Disturbance	*	*	*	*	*	*	8	100%
Specific Learning Disability	17	47.2%	14	38.9%	5	13.9%	36	100%
Speech-Language Impairment Only	31	43.1%	29	40.3%	12	16.7%	72	100%
Traumatic Brain Injury	*	*	*	*	*	*	1	100%
Other	*	*	*	*	*	*	5	100%

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Table 28: Progress in AUGMENTATIVE COMMUNICATION COMPREHENSION FCM by Eligibility for Special Education/Related Services

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Autism	*	*	*	*	*	*	8	100%
Deafness	*	*	*	*	*	*	11	100%
Hearing Impairment	*	*	*	*	*	*	2	100%
Mental Retardation	*	*	*	*	*	*	19	100%
Multiple Disabilities	*	*	*	*	*	*	16	100%
Specific Learning Disability	*	*	*	*	*	*	1	100%
Speech-Language Impairment Only	*	*	*	*	*	*	1	100%
Other	*	*	*	*	*	*	5	100%

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Table 29: Progress in VOICE PRODUCTION FCM by Eligibility for Special Education/Related Services

Special Ed. Eligibility	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Deafness	*	*	*	*	*	*	1	100%
Hearing Impairment	*	*	*	*	*	*	1	100%
Mental Retardation	*	*	*	*	*	*	10	100%
Multiple Disabilities	*	*	*	*	*	*	3	100%
Orthopedic Impairment	*	*	*	*	*	*	1	100%
Serious Emotional Disturbance	*	*	*	*	*	*	1	100%
Specific Learning Disability	*	*	*	*	*	*	14	100%
Speech-Language Impairment Only	11	34.4%	12	37.5%	9	28.1%	32	100%
Other	*	*	*	*	*	*	1	100%

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Table 30: Progress in FCMs by Mean Hours of Therapy

FCM	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	Mean Hours	N	Mean Hours	N	Mean Hours	N	Mean Hours
Articulation	914	12.8	832	13.1	254	11.7	2,000	12.8
Language Prod.	830	14.5	582	16.1	145	14.4	1,557	15.1
Language Comp.	659	14.9	495	16.5	128	15.7	1,282	15.6
Fluency	69	11.4	60	12.6	27	11.5	156	11.9
Aug. Comm. Com	40	18.2	22	23.8	1	39.0	63	20.5
Voice	29	11.3	23	10.9	14	17.4	66	12.5

Table 31: Progress in ARTICULATION FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	22	34.4%	28	43.8%	14	21.9%	64	100%
1 year or less	151	38.9%	174	44.8%	63	16.2%	388	100%
2	145	40.8%	160	45.1%	50	14.1%	355	100%
3-5	321	46.2%	290	41.7%	84	12.1%	695	100%
More than 5	240	53.5%	170	37.9%	39	8.7%	449	100%

Table 32: Progress in LANGUAGE PRODUCTION FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	9	27.3%	17	51.5%	7	21.2%	33	100%
1 year or less	68	47.3%	64	43.5%	15	10.2%	147	100%
2	95	50.0%	68	35.8%	27	14.2%	190	100%
3-5	337	53.1%	246	38.7%	52	8.2%	635	100%
More than 5	247	53.8%	172	37.5%	40	8.7%	459	100%

Table 33: Progress in LANGUAGE COMPREHENSION FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	9	31.0%	16	55.2%	4	13.8%	29	100%
1 year or less	58	47.5%	51	41.8%	13	10.7%	122	100%
2	82	47.4%	66	38.2%	25	14.5%	173	100%
3-5	261	49.2%	214	40.3%	56	10.5%	531	100%
More than 5	194	55.4%	127	36.3%	29	8.3%	350	100%

Table 34: Progress in FLUENCY, RATE, OR RHYTHM FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	*	*	*	*	*	*	3	100%
1 year or less	*	*	*	*	*	*	19	100%
2	*	*	*	*	*	*	22	100%
3-5	26	38.8%	28	41.8%	13	19.4%	67	100%
More than 5	22	52.4%	13	30.9%	7	16.7%	42	100%

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Table 35: Progress in AUGMENTATIVE COMMUNICATION COMPREHENSION FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	-	-	-	-	-	-	0	-
1 year or less	*	*	*	*	*	*	1	100%
2	*	*	*	*	*	*	1	100%
3-5	*	*	*	*	*	*	10	100%
More than 5	23	56.1%	17	41.5%	1	2.4%	41	100%

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Table 36: Progress in VOICE PRODUCTION FCM by Years of Previous Therapy

Mean Years of Previous Therapy	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
None	*	*	*	*	*	*	3	100%
1 year or less	*	*	*	*	*	*	7	100%
2	*	*	*	*	*	*	13	100%
3-5	*	*	*	*	*	*	21	100%
More than 5	*	*	*	*	*	*	8	100%

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Table 37: Primary Reason for Dismissal/ Break in Services

Primary Reason	N	%
Data Collection Project Ended/ Summer Recess	2,505	74.8%
Goals met	646	19.3%
Family Moved	88	2.6%
Change in Special Ed. Eligibility	22	0.6%
Student Withdrew from School	9	0.3%
IEP Team Moved Student from School	8	0.2%
Illness/ Medical	6	0.2%
Other	66	1.9%
Total	3,350	100%

Table 38: Average Time Participated in Each Service Delivery Model

Service Delivery Model	N	Avg. Hours
Collaborative Consultation	849	2.5
Classroom-Based	686	8.6
Community-Based	41	6.1
Pull-Out	3,084	11.0
Self-Contained Program	40	13.6
Training/Consult-Teacher	170	1.6
Training/Consult-Family	49	1.5
Training/Consult-Other	8	*
Evaluation/Re-Evaluation	726	1.3
Other	60	1.5
Total Number of Students	3,366	13.2

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Note: A student may have received multiple types of services*

Table 39: Progress in ARTICULATION FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	569	42.3%	589	43.8%	186	13.8%	1,344	100%
Regular Education with SLP Classroom Services	16	48.5%	15	45.5%	2	6.1%	33	100%
Special Education with SLP Pull-Out Services	278	52.7%	194	36.7%	56	10.6%	528	100%
Special Education with SLP Classroom Services	46	55.4%	28	33.7%	9	10.8%	83	100%
Home/Hospital School	*	*	*	*	*	*	1	100%
Other	*	*	*	*	*	*	15	100%

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Table 40: Progress in LANGUAGE PRODUCTION FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	264	50.0%	210	39.8%	54	10.2%	528	100%
Regular Education with SLP Classroom Services	28	50.0%	22	39.3%	6	10.7%	56	100%
Special Education with SLP Pull-Out Services	406	55.5%	262	35.8%	64	8.7%	732	100%
Special Education with SLP Classroom Services	122	55.2%	79	35.7%	20	9.0%	221	100%
Other	*	*	*	*	*	*	12	100%

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Table 41: Progress in LANGUAGE COMPREHENSION FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	213	48.9%	176	40.4%	47	10.8%	436	100%
Regular Education with SLP Classroom Services	20	46.5%	18	41.9%	5	11.6%	43	100%
Special Education with SLP Pull-Out Services	311	53.1%	214	36.5%	61	10.4%	586	100%
Special Education with SLP Classroom Services	109	54.2%	79	39.3%	13	6.5%	201	100%
Other	*	*	*	*	*	*	10	100%

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Table 42: Progress in FLUENCY, RATE, OR RHYTHM FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	41	45.6%	31	34.4%	18	20.0%	90	100%
Regular Education with SLP Classroom Services	*	*	*	*	*	*	3	100%
Special Education with SLP Pull-Out Services	23	46.0%	19	38.0%	8	16.0%	50	100%
Special Education with SLP Classroom Services	*	*	*	*	*	*	11	100%
Other	*	*	*	*	*	*	2	100%

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Table 43: Progress in AUGMENTATIVE COMMUNICATION COMPREHENSION FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	*	*	*	*	*	*	8	100%
Regular Education with SLP Classroom Services	*	*	*	*	*	*	2	100%
Special Education with SLP Pull-Out Services	*	*	*	*	*	*	24	100%
Special Education with SLP Classroom Services	17	58.6%	11	37.9%	1	3.4%	29	100%

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Table 44: Progress in VOICE PRODUCTION FCM by Educational Placement

Educational Placement	No Progress		Increase 1 Level		Increase >1 Level		Total	
	N	%	N	%	N	%	N	%
Regular Education with SLP Pull-Out Services	14	35.0%	17	42.5%	9	22.5%	40	100%
Regular Education with SLP Classroom Services	*	*	*	*	*	*	1	100%
Special Education with SLP Pull-Out Services	*	*	*	*	*	*	18	100%
Special Education with SLP Classroom Services	*	*	*	*	*	*	7	100%

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Table 45: Percentage of Students that are Limited English Proficient (L.E.P.)

L.E.P.	N	%
Yes	61	1.8%
No	3,299	98.2%
Total	3,360	100 %
Services Provided In...		
English Only	30	49.2%
Both	3	4.9%
Missing	28	45.9%
Total	61	100%

Table 46: Enrollment by Month of Year

Month	N	%
September	459	13.6%
October	2,758	81.8%
November	70	2.1%
December	39	1.2%
January	43	1.3%
February	2	0.1%
Total	3,371	100%

Table 47: Number of SLP Students who Changed Schools During Treatment

Transfer?	N	%
Yes	20	0.6%
No	3,351	99.4%
Total	3,371	100%

**Table 48: Change in FCM Levels by Level at Admission -
ARTICULATION/PHONOLOGY**

Admission Level	Students	Mean Change
1	8	*
2	34	+1.1
3	106	+1.2
4	253	+1.0
5	855	+0.8
6	748	+0.4
Total	2,004	+0.7

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Table 49: Change in FCM Levels by Level at Admission -AUGMENTATIVE COMMUNICATION PRODUCTION

Admission Level	Students	Mean Change
1	6	*
2	33	+0.8
3	35	+0.6
4	18	*
5	8	*
6	4	*
Total	104	+0.6

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Table 50: Change in FCM Levels by Level at Admission -COGNITIVE COMMUNICATION

Admission Level	Students	Mean Change
1	0	*
2	14	*
3	31	+0.7
4	35	+0.4
5	31	+0.3
6	8	*
Total	119	+0.5

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Table 51: Change in FCM Levels by Level at Admission -FLUENCY, RATE, OR RHYTHM

Admission Level	Students	Mean Change
1	0	*
2	13	*
3	19	*
4	44	+1.1
5	43	+0.4
6	38	+0.2
Total	157	+0.7

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Table 52: Change in FCM Levels by Level at Admission -LANGUAGE COMPREHENSION

Admission Level	Students	Mean Change
1	12	*
2	26	+0.8
3	140	+0.9
4	350	+0.7
5	585	+0.5
6	169	+0.2
Total	1,282	+0.6

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Table 53: Change in FCM Levels by Level at Admission -LANGUAGE PRODUCTION

Admission Level	Students	Mean Change
1	17	*
2	28	+0.8
3	109	+0.8
4	386	+0.8
5	762	+0.5
6	255	+0.2
Total	1,557	+0.5

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