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**Call for Short Course Proposals  
for the 1988 Bell Association  
Convention in Orlando, Florida**

# THE VOLTA REVIEW

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*Organized in 1890 to encourage the teaching of speech, speechreading, and the use of residual hearing to hearing-impaired people, the Bell Association welcomes to its membership all who are interested in improving educational, professional, and vocational opportunities for hearing-impaired people. Affiliated with the Association are the International Parents Organization (IPO), the Oral Deaf Adults Section (ODAS), and the International Organization for the Education of the Hearing Impaired (IOEHI).*

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# Designing an Integration Rating Guide

Gary Bunch

*This article reviews the need for dependable guidelines to help determine which hearing-impaired children can be successfully integrated into the mainstream and how much support is required from a teacher of the hearing impaired in each case. Literature on the topic is reviewed briefly, commonly mentioned variables are noted, and the differential importance of each variable is discussed. An integration rating guide taking into account past practice, information gleaned from the literature, and current professional opinion is suggested (see Appendix A, pages 44-47).*

Over the past 20 years or so a new phenomenon in educating hearing-impaired students has swept North America. That phenomenon is widely known as integration or mainstreaming. As noted by Lowenbraun, Appelman, and Callahan (1980), one motivating factor is relatively recent legislation such as PL 94-142, which requires that, "to the maximum extent appropriate, handicapped children, including children in public or private institutions or other care facilities, are educated with children who are not handicapped." Such legislation reinforces the movement toward education in the least restrictive environment occurring across all handicapping conditions, including hearing impairment. The movement in this area began in the first half of this century with a shift in enrollments from residential facilities to day schools. It has continued into the second half of the century with the addition of day classes and mainstreaming programs (Hinkle & White, 1979). While 90% of hearing-impaired students were in residential schools in 1900, by 1976 only 38% of the 49,427 hearing-impaired students enrolled in educational facilities in the United States were being educated in residential schools (Karchmer & Trybus, 1977). Thirty-three percent were in fulltime day schools or day classes, and 29% in programs with part- to fulltime mainstreaming components. More recent survey data (Staff, 1985) from the Gallaudet Research Institute indicate a continued decline in public residential school enrollment from 1976 to 1984.

This move toward mainstreaming is accompanied by a need to select candidates with acceptable probability for success in a mainstream program. Hinkle and White (1979) suggest that the primary areas of information to guide selection are the academic, communicative, personal/social, classroom, and support areas. Additional information on variables of

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*Dr. Bunch is an Associate Professor in the York University Faculty of Education, Toronto, Ontario, Canada.*

interest can be found in work by Antia (1982), Peck and Keller (1981), Pflaster (1980, 1981), Ross (1978), Thompson and Thompson (1981), and White (1982).

If all possible variables were included in the decision-making process, an endless task would ensue and few decisions would be made. In addition, every variable is probably not as significant as every other in its contribution to the integration decision. Skill in mathematical computation, for instance, may not be as fundamental to successful mainstreaming as reading comprehension. Variables employed should be assigned weighted values depending on their relative importance.

Among the available integration guides and rating systems, certain variables stand out in frequency of appearance. Those mentioned by Blumberg (1973), Hinkle and White (1979), Peck and Keller (1981), Pflaster (1980, 1981), and Rudy and Nace (1973) are summarized in Table 1. Variables related to the general area of academic skills are most frequently mentioned. Among these, language items (reading, spelling, vocabulary) predominate. Other variables in order of frequency of mention are communication skills (hearing acuity, hearing use, speechreading, speech intelligibility), social skills, parental support, and intellectual potential. The relative importance of these can be seen in the fact that both academic and communication skills are divided in the literature into specific performance areas, while social skills, parental support, and intellectual potential are not.

While many individuals have considered the question of which aspects of the child should be evaluated in determining whether to mainstream, few have considered the relative importance of variables such as academic performance, communication skills, intellect, and personal development. Hinkle and White (1979) address the issue of which variables are important but do not assign relative weights. Blumberg (1973) rates the individual's strength (from superior to inferior) in each of several areas but stops short of assigning weighting values. So do Nix (1977) and Peck and Keller (1981). Rudy and Nace (1973) suggest awarding points on a 4-interval scale of 25, 20, 15, and 10. For example, on the intelligence scale, quotients of 125 and above receive 25 points; quotients of 100-124 receive 20 points; quotients of 95-109 receive 15 points; and quotients of 80-94 receive 10 points. While such a rating system based on ability levels is useful for rating within a variable, it still carries the questionable implication that each variable is equally important in contributing to integration success.

Pflaster (1980, 1981) reports on hearing-impaired students already integrated. She accepts reading ability as an indicator of academic success and correlates a wide selection of variables with reading. (It should be noted that chronological age, hearing level, and early intervention are excluded from her analysis.) Eleven major factors are isolated through a factor analysis, with weighting as follows: production of suprasegmentals (20.4%), expressive language (16.2%), motivation (15.4%), receptive language (13.0%), speechreading skills (9.4%), interpersonal behavior

**Table 1.** Primary variables of concern for mainstreaming hearing-impaired students based on selected mainstreaming instruments and guidelines.

<i>Variable</i>	<i>Rudy and Nace (1979)</i>	<i>Blumberg (1973)</i>	<i>Peck and Keller (1973)</i>	<i>Hinkle and White (1981)</i>	<i>Pflaster (1980, 1981)</i>
Communication skills					
Hearing acuity	X			X	
Hearing use		X	X		X
Speechreading		X		X	X
Speech Intelligibility		X		X	X
Social skills	X	X	X	X	X
Parental support		X	X	X	
Academic skills					
General		X	X		X
Reading	X	X		X	
Spelling	X				
Arithmetic	X	X			
Science	X				
Social science	X				
Vocabulary	X				X
Language	X			X	X
Intellectual potential	X		X	X	

(7.4%), communicative attitude (6.3%), personal adjustments (4.2%), sibling constellation (2.7%), auditory attitude (2.5%), and classroom communication (2.4%). A parallel exists between variables selected for mainstreaming decisions (see Table 1) and Pflaster's findings.

### Integration Rating Guide (IRG)

The purpose of the IRG is to assist teachers and others in estimating the probability of success in integration as well as the teacher support necessary to achieve that estimated degree of success. An early form of the instrument was reported by Bunch in 1977. A final form, described below (see Appendix A, pages 44–47, for an example of a completed IRG), has evolved from a review of the literature, discussion with colleagues, and pilot projects in the field.

The IRG was designed with four major uses in mind:

1. To compare hearing-impaired students to each other to determine which children might be integrated. Children with skills in advance of the majority of their peers may be suitable candidates for full or partial integration. Others already partially integrated may be ready for increased integration.

2. To compare integrated hearing-impaired students to their normal-hearing peers in order to monitor progress in the integrated setting.
3. To determine degree of support by a trained specialist required to maximize likelihood of success in an integrated setting.
4. To encourage the use of objective procedures and tests to assess the probability that a student will meet with success in an integrated setting.

The IRG evaluates six areas: language arts, communication, academic subject achievement, intellectual potential, socialization, and parental support. The first four include several variables. Socialization and parental support were considered to encompass too many facets to readily determine the relevant variables for integration success. Instead, lists of characteristics were provided as shown on the last page of the IRG (Appendix A, page 47).

Each variable in the IRG is weighted to reflect its estimated contribution to success in integration. Selection of weightings was guided by frequency of mention in the literature (see Table 1), information from pilot studies in Ontario and Alberta, Canada (Bunch, 1977), and information from Pflaster's (1980, 1981) factorial studies.

Language is weighted heavily (75 out of 215 total points) as it is included in one or more ways by all those designing integration guides. In the Pflaster (1981) study, receptive and expressive language account for 29.2% of the variance related to successful academic performance. Overall language ability correlates most highly with integration success or with selection for integration in pilot studies (Bunch, 1977). Weightings for other variables reflect their perceived contribution to integration success.

A fundamental principle in evaluating success in integration is that evaluation of the hearing-impaired student must take place against the backdrop of his or her normal-hearing peers' achievements. To indicate achievement in comparison with classmates, higher scores are awarded students performing within the top quarter of their class or of the class into which they might integrate. A similar procedure is followed for test scores. Declining scores are awarded for performance within the second, third, and fourth quarters. If student performance is deemed to fall between the score levels provided, the individual completing the IRG may write in the score considered appropriate.

The rating source is a combination of standardized tests (where available), conventional nonstandardized tests (such as audiological evaluation), and teacher estimates. It is expected that teacher estimate of performance be included in each evaluation.

Finding standardized test instruments appropriate for hearing-impaired students is often difficult. Many tests use verbal instructions requiring good reception and understanding of language. For this reason and the lack of tests normed on the hearing impaired, many teachers and resource personnel depend almost entirely on teacher analysis. Despite this tendency, the IRG supports the position that norm- or criterion-referenced tests be used whenever possible. Three ratings should be conducted. Where all three are

in close agreement, an average rating can be taken. Where marked disagreement occurs, an average based on the two in closer agreement is recommended. In cases where little agreement is apparent, the teacher's rating should be accepted as having the greatest functional utility. When fewer than three ratings are available, the teacher's rating is the minimal requirement. Although a teacher's rating may suffer from subjectivity, a solid body of evidence exists to support the merit in considering the professional view of a well-informed observer. As Kerlinger (1964) notes, such rating scales "have virtues that make them valuable tools" (p. 517).

The summary rating for the IRG must be judged against the appropriate comparison group of hearing-impaired and/or normal-hearing peers. The choice depends on whether a student's progress is being reviewed to determine candidacy for integration or to monitor progress in the integration setting. Scores are totaled from all six areas and are categorized into four levels of probable integration success: high, acceptable, slender, and nil. The integration success rating obtained may be used to judge if a student can be integrated or if a present integration placement should be continued. Scores for the major variables, language arts and communication, are totaled to yield one of four integration support ratings. These estimate the amount of contact with a trained specialist required to achieve the probable level of integration success.

An example of a completed IRG is given in Appendix A for a young girl, Susie, integrated for much of 4th grade. The comparison group was her average, normal-hearing 4th-grade class. Susie obtained language arts scores (IRG, Part 1) in the mid-grade-3 to mid-grade-4 range. Her vocabulary and language structure were in need of more attention, but other areas were acceptable. She scored low on the Stanford Achievement Test (SAT) in vocabulary and reading and in word study. In subject achievement (IRG, Part 3), she scored low on the SAT in mathematics, science, and social studies, although teacher estimates were at a beginning 4th-grade level. Susie's speech was quite intelligible (IRG, Part 2). She understood speech well and paid close attention in class. She had adequate intellectual capacity in the teacher's view (IRG, Part 4), as well as adequate socialization skills (IRG, Part 5). Her parents were very supportive of her academic work (IRG, Part 6). Overall, the IRG predicted good success in school (160 points out of 215 total for integration success), with the proviso that Susie obtain routine support in key subject areas (80 points out of 115 total for integration support).

## Pilot Study

The IRG described in the previous section and presented as Appendix A was completed on a sample of 16 hearing-impaired children (10 males and 6 females) attending classes in a metropolitan school system. Ages ranged from 7 years, 3 months to 14 years, 6 months. Hearing losses ranged from

mild to profound levels with the majority in the severe to profound range. Children with multiple handicaps were excluded. Onset in all cases was pre- or perinatal. Instruction was orally based. Half the students were completely integrated in grades 1, 2, 4, 6, or 8 with varying degrees of trained teacher support, while the other half were placed in classes for the hearing impaired by age with varying degrees of integration. The purpose was to test the effectiveness of the IRG in monitoring the progress of fully integrated children and in determining for which partially integrated children the degree of mainstreaming might be increased or decreased.

IRG recommendations were to be compared to those resulting from the normal decision-making process in the school system. Over the school year teachers in the school system evaluate their children to recommend degree of integration for the following school year. Teachers and the responsible supervisor meet frequently to review programs and progress. Audiological and psychological reports are requested over the year to obtain information to assist in placement decisions. Teachers in the system do not normally carry out standardized or formal criterion-referenced evaluations. No form similar to the IRG is employed by the school system to assist in the placement process.

Early in the school year the researcher met with the teachers to explain the purposes of the IRG. A number of norm- and criterion-referenced instruments were made available. Teachers were encouraged to select those they considered appropriate for their children, but no teacher was required to use these tests. Those who did were given guidance in administration. However, to avoid possible bias by information that would not ordinarily be used in their placement recommendations, the teachers were not allowed to score the tests. The researcher also interviewed each teacher to obtain teacher estimates of performance. After the interview the researcher completed each IRG using the teacher estimates from the interview and their standardized and nonstandardized test results.

At the end of the school year, the researcher interviewed the program supervisor. Information specifying degree of integration, predictions for probable success, and amount of specialist teacher support was obtained. This was then translated into integration success and integration support ratings. This information was then correlated with the researcher's integration success and integration support ratings from the IRG.

The IRG predicted the school system's integration decisions in 14 of 16 cases. A Pearson product-moment correlation coefficient of  $r = .87$  was obtained. In addition, information was obtained on the degree of support to be provided by a trained teacher of the hearing impaired. Considerable variability was found between the degree of support anticipated by the school system and the integration support ratings of the IRG. This may be due to practical decisions that must be reached by a school system with a finite amount of available support not considered in the IRG. Of the 16 students involved, agreement on support was reached with seven. The IRG suggested that six children required more teacher support than the system



recommended; the situation was reversed for the remaining three. A Pearson product-moment correlation of  $r = .63$  was found.

At the end of the first term of the next school year, the researcher interviewed the program supervisor for follow-up information on the students. The two students on whom the IRG integration success ratings and the school system's ratings differed were found to be functioning at a success level in keeping with the IRG predictions. Of the nine students with teacher support recommendations at variance with IRG integration support ratings, actual support had been altered over the term for four and was to be altered for one other. All changes were made in the direction of IRG recommendations. Thus, by the end of the first term, all 16 students were functioning with a degree of integration in accordance with IRG success predictions. Twelve of the 16 were receiving the amount of support from a trained teacher of the hearing impaired recommended by the IRG.

## Discussion

The IRG encourages combining professional experience and opinion with objective test results to suggest probable degrees of success in a mainstream situation. It also suggests the amount of support required from trained teachers of the hearing impaired to maximize the opportunity for success. The IRG appears to reflect actual educational decisions as reached by professionals in the field.

Informal feedback from individuals who have used the IRG indicates certain beneficial characteristics. Teachers found that completing the form gave them an overview of their students that did not normally arise from day-to-day or week-to-week teaching. The IRG's design encouraged them to have faith in their professional analyses; but it also encouraged them to use standardized and criterion-referenced instruments to assess performance. The sections on socialization and parental support reminded them that successful integration requires more than academic ability. Finally, teachers found that having the completed IRG available assisted them in explaining student progress, characteristics, and needs to parents, principals, and supervisors.

Supervisors found that the IRG reduced teacher tendency to overestimate the probable success of students with good oral skills but relatively weaker skills in other areas. They also said that the IRG increased teacher recognition of integration possibilities for students with poor oral skills but with academic, intellectual, social, and family support strengths. Supervisors also found that the IRG provided a vehicle for pointing out the benefits of differential assessment and for conducting analyses without the degree of personal and professional threat an interview sometimes involves. Apparently, the IRG held strength as a training tool for novice teachers of the hearing impaired as well.

A final strength of an instrument such as the IRG is its utility in meetings to review placement and support needs. These meetings frequently involve

individuals with little familiarity with the problems posed by hearing impairment and the integration needs of that population. Those concerned with hearing impairment are better able to explain the educational strengths, weaknesses, and needs of this population through an instrument that considers important educational variables in a logical and concise way.

While the IRG appears to hold promise of usefulness, many questions remain about selecting and monitoring hearing-impaired students in the mainstream. Insufficient information is available on the best weightings to assign variables. Additional studies on this crucial point are necessary. Valid objective assessment tools that are reliable for hearing-impaired students are also necessary. The lack of such tools places disproportionate reliance on teacher estimates of ability and performance in the IRG. Finally, the IRG itself has not been tested sufficiently in actual use. Further study is required with an appreciable number of students in various integration situations to more rigorously assess the IRG's predictive capacities.

#### ACKNOWLEDGMENTS

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Appendix A: Integration rating guide designed by Gary Bunch.

Name: Susie Grade: 4-10 Sex: M (F)  
 Date: 85 6 2 Date of Birth: 75 08 27 Age: 9 years 10 months  
 School: \_\_\_\_\_ Teacher: \_\_\_\_\_

Line	RATING SUMMARIES	
	<u>Integration Success Points</u>	<u>Integration Support Points</u>
1	Language Arts <u>40</u> of 75	Language Arts <u>40</u> of 75
2	Communication <u>40</u> of 40	Communication <u>40</u> of 40
3	Subject Achievement <u>20</u> of 30	
4	Intellectual Potential <u>17</u> of 20	
5	Socialization <u>18</u> of 25	
6	Parental Support <u>25</u> of 25	
7	Integration Success Points Total <u>160</u> of 215	Integration Support Points Total <u>80</u> of 115

  

INTEGRATION SUCCESS RATINGS		
<u>Score Range</u>	<u>Rating</u>	<u>Implication</u>
150 to 215	<u>High</u>	Should succeed in all subjects with relatively minimal difficulty.
100 to 149	Acceptable	Should obtain passing grades with recommended level of support.
50 to 99	Slender	Academic success will be limited even with recommended levels of support. Key subjects must be the responsibility of a teacher of the hearing impaired.
0 to 49	Nil	Integration is for other than academic reasons.

  

INTEGRATION SUPPORT RATINGS		
<u>Score Range</u>	<u>Rating</u>	<u>Implication</u>
99 to 115	Level I	Complete integration with consultative support by a teacher of the hearing impaired.
84 to 98	Level II	Complete integration but with teacher of the hearing impaired support on a regular basis.
69 to 83	<u>Level III</u>	Integration for most subjects with teacher of the hearing impaired instruction for key subject areas.
0 to 68	Level IV	Integration for selected subjects with full-time instruction in a class for hearing impaired students.

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Line	RATING AREA	RATING SOURCE		RATING POINTS				
		Grade/Score		Top 25%	2nd 25%	3rd 25%	4th 25%	
<b>1. LANGUAGE ARTS</b>								
8	A. Vocabulary	1. <u>Stanford Vocab</u>	<u>2.1</u>					
9		2. _____		15	10	5	0	
10		3. <u>Teacher Estimate</u>	<u>3.0</u>					
11	B. Reading	1. <u>Stanford Rdg A</u>	<u>4.2</u>					
12	Comprehension	2. <u>Stanford Rdg B</u>	<u>3.7</u>	15	10	5	0	
13		3. <u>Teacher Estimate</u>	<u>4.0</u>					
14	C. General Reading/ Language Items	1. <u>WRAT</u>	<u>4.4</u>					
15		2. <u>Stan. Wd. Study</u>	<u>3.8</u>	15	10	5	0	
16		3. <u>Teacher Estimate</u>	<u>4.0</u>					
17	D. Language Structure	1. <u>TERIA</u>	<u>8<sup>1</sup>/<sub>90</sub></u>					
18		2. <u>TEXLA</u>	<u>7<sup>1</sup>/<sub>90</sub></u>	15	10	5	0	
19		3. <u>Teacher Estimate</u>	<u>Poor</u>					
20	E. Spelling	1. <u>Stanford</u>	<u>5.8</u>					
21		2. <u>WRAT</u>	<u>3.9</u>	15	10	5	0	
22		3. <u>Teacher Estimate</u>	<u>4.4</u>					
23		LANGUAGE ARTS SUBTOTAL						<u>40</u> (to line 1)
<b>2. COMMUNICATION</b>								
24	A. Speech Intelligibility	1. _____						
25		2. _____		10	7	3	0	
26		3. <u>Teacher Estimate</u>	<u>Excel.</u>					
27	B. Speechreading	1. _____						
28		2. _____		10	7	3	0	
29		3. <u>Teacher Estimate</u>	<u>Excel.</u>					
30	C. Speech Reception	1. _____						
31		2. _____		10	7	3	0	
32		3. <u>Teacher Estimate</u>	<u>Excel.</u>					
33	D. Attentiveness	1. _____						
34		2. _____		10	7	3	0	
35		3. <u>Teacher Estimate</u>	<u>Excel.</u>					
36		COMMUNICATION SUBTOTAL						<u>40</u> (to line 2)

Appendix A (continued)

Line	RATING AREA	RATING SOURCE			RATING POINTS					
		Grade/Score	Top 25%	2nd 25%	3rd 25%	4th 25%				
3. SUBJECT ACHIEVEMENT										
37	A. Mathematical	1. WRAT	4.2							
38	Computation	2.		6	4	2	0			
39		3. Teacher Estimate	4.0							
40	B. Mathematical	1. Stanford	2.2							
41	Concepts	2.		6	4	2	0			
42		3. Teacher Estimate	4.0							
43	C. Mathematical	1. Stanford	2.2							
44	Applications	2.		6	4	2	0			
45		3. Teacher Estimate	3.8							
46	D. Science	1. Stanford	2.2							
47		2.		6	4	2	0			
48		3. Teacher Estimate	4.0							
49	E. Social Science	1. Stanford	2.2							
50		2.		6	4	2	0			
51		3. Teacher Estimate	4.0							
52	SUBJECT ACHIEVEMENT SUBTOTAL						20	(to line 3)		
4. INTELLECTUAL POTENTIAL										
53	A. Verbal	1.								
54	Intelligence	2.		10	7	3	0			
55		3. Teacher Estimate	Avg.							
56	B. Performance	1.								
57	Intelligence	2.		10	7	3	0			
58		3. Teacher Estimate	Excd.							
59	INTELLECTUAL POTENTIAL SUBTOTAL						17	(to line 4)		
60	5. SOCIALIZATION	1. Rating Guide	46							
61		2.		25	18	8	0			
62		3. Teacher Estimate	Good			18	(to line 5)			
63	6. PARENTAL SUPPORT	1. Support Guide	36							
64		2.		25	18	8	0			
65		3. Teacher Estimate	Excd.			25	(to line 6)			

Line	SOCIALIZATION RATING GUIDE				
	CHARACTERISTICS	RATING POINTS			
		Top 25%	2nd 25%	3rd 25%	4th 25%
66	1.Strong self concept.	4	3	2	1
67	2.Able to accept criticism.	4	3	2	1
68	3.Independent in actions.	4	3	2	1
69	4.Makes appropriate decisions.	4	3	2	1
70	5.Has own ideas.	4	3	2	1
71	6.Encouraged by success.	4	3	2	1
72	7.Pays close attention.	4	3	2	1
73	8.On time with assignments.	4	3	2	1
74	9.Careful with details.	4	3	2	1
75	10.Work is organized.	4	3	2	1
76	11.Able to draw conclusions.	4	3	2	1
77	12.Able to generalize.	4	3	2	1
78	13.Personable.	4	3	2	1
79	14.Active participator.	4	3	2	1
80	15.Thoughtful of others.	4	3	2	1
81	SOCIALIZATION SUBTOTAL		46		(to line 60)
Point distribution: 49 to 60 = 25    38 to 48 = 18    27 to 37 = 8    15 to 26 = 0					
Line	PARENTAL SUPPORT GUIDE				
	CONSIDERATIONS	RATING POINTS			
		Always	Mostly	Generally	Rarely
82	1.Home language is English	4	3	2	1
83	2.Ensure that homework is done.	4	3	2	1
84	3.Assist with homework.	4	3	2	1
85	4.Stimulate conversation.	4	3	2	1
86	5.Expand vocabulary.	4	3	2	1
87	6.Encourage community activity.	4	3	2	1
88	7.Consult with teachers.	4	3	2	1
89	8.Maintain hearing aids.	4	3	2	1
90	9.Encourage reading.	4	3	2	1
91	10.Maintain a positive view.	4	3	2	1
92	PARENTAL SUPPORT SUBTOTAL		36		(to line 63)
Point distribution: 32 to 40 = 25    23 to 33 = 18    15 to 22 = 8    10 to 14 = 0					