

## JEVS NORMS FOR PERSONS WITH DISABILITIES RESIDING IN RURAL AREAS

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## Abstract

The purpose of this study was to develop norms on the JEVS Work Sample Battery suitable for use by rehabilitation facilities situated in rural locations. The results were divided into deciles as well as the original norming divisions (i.e., 1,2,3) published by JEVS. The results of this study indicate that although rural disabled clients were not included in the development of the original JEVS norms, their scores are very similar.

## Introduction

The increase in the number of clients served in vocational evaluation compounded by the accompanying decrease in allowable length of time for services has compelled vocational evaluators to rely more on both paper and pencil as well as work sample testing when assisting clients to develop vocational goals and objectives. These methods have been found to be relatively quick and inexpensive to administer to clients. Work samples were introduced in the 1950's and a proliferation of commercial evaluation systems are currently available to practitioners. Little empirical data on these work sample batteries, however, have been generated beyond that which is provided by the individual publishers.

The JEVS Work Sample Battery was introduced in 1972 and renormed in 1975 (Vocational Research Institute, 1986). In 1980, the Report Supplement for the JEVS Work Sample Battery was revised to conform with the Occupational Aptitude Patterns developed by the U.S. Employment Service. Recent research on what has been termed "one of the most widely used" of the commercial vocational evaluation systems (Bervin & Maki, 1982, p. 23) has explored such topics as performance differences among clients with various disabilities (Dion, Hoehn, & Wong, 1985), the use of employed worker norms (Bervin & Maki, 1982), and the effects of age, IQ, and disability on performance of JEVS tasks (Field, Sink, & Cook, 1978). Muse and Hanes (1981) have also analyzed data obtained through administration of the JEVS Work Sample Battery between the years of 1974 and 1979 and reported norms that were more stringent than those published by JEVS in 1976. However, 72% of the clients used in their study were from urban areas. At the present time there are no published norms suitable for use by rehabilitation centers serving persons with disabilities in rural areas.

Approximately 8.5 million persons with disabilities reside in rural areas within the United States (Rehab Brief, 1983). A 1980 National Health Interview Survey indicated that while persons with disabilities constitute 10.37% of urban populations, the percentage of persons with disabilities residing in rural areas equals 12.75% of the non-farm population and 12.6% of the farm population (Rehab Brief, 1983). According to Harder (1986) "the rural community presents unique challenges to the field of vocational evaluation" (p. 21). A study by Omohundro, Schneider, Marr, and Grannemann (1983) documented that persons with disabilities in rural locations are disadvantaged economically, educationally, and vocationally. Harder (1986) also noted that persons with disabilities residing in rural areas have usually attained no more than a twelfth grade education. They have remained in the same geographical environment throughout their lives and are resistant to suggestions that relocation be considered (Harder, 1986; Cook, Ferritor, & Cooper, 1981). Because there are fewer employment opportunities in rural areas, the amount of vocational awareness possessed by persons with disabilities residing in non-urban settings is also limited. The purpose of this research project was to develop norms for the JEVS Work Sample Battery which could be used in rehabilitation facilities serving disabled people in rural areas.

### Method

The collection of the norm data began in 1983 and continues on 22 of the 24 JEVS tasks. Approximately 675 persons with disabilities have received evaluation services during this time period, and most have had some exposure to the JEVS Work Sample Battery. This population is drawn from a decidedly rural population in that the service area of the comprehensive rehabilitation facility covers the southernmost 35 counties in Illinois. Clients participating in this study were diagnosed as having a variety of disabilities including visual impairments, hearing impairments, orthopedic problems, mental impairments, behavioral disorders, learning disabilities, emotional difficulties, cardiovascular problems, cerebral palsy, and epilepsy. The ages of the group range from 17 to 65 years of age. Men outnumbered women by a ratio of 3-1, and the socio-cultural groups represented were Caucasian, Hispanic, and black.

All clients volunteered to participate in the project and they signed a research consent form prior to beginning vocational evaluation at the facility. The instructions for the JEVS administration provided by the publisher were strictly followed.

### Results

The rural norms developed in this study for time for completion and number of errors are presented in Tables I and II respectively. Botterbusch (1982) has criticized the JEVS developers for not presenting the normative data in percentile form. During the analysis stage of this study, an attempt was made to distribute the data into percentiles. Because of the small increments of variation in time and error scores on most of the work samples, however, it was determined that this was not the most appropriate way to present the norms. Instead of distributing the data into percentile form it was determined that the division of the information into deciles would not only better serve the purpose of this paper, but this data presentation would also be more easily utilized by practitioners.

In order to provide a comparison with the norms currently used by vocational evaluators, Table III is included. This table presents the degree of similarity between the most recent norms provided by the Jewish Employment and Vocational Service (1976) as well as those developed in the present study.

The rural norms in Table III are divided on the same basis as the original and revised norms published by the Vocational Research Institute in that scores falling at or above the 61st percentile were included in Level 3, scores between the 40th and 60th percentiles were included in Level 2, and scores that fell at or below the 39th percentile were included in Level 1. These percentile groupings can also be found within the decile tables with groups 1-4 included in Level 1, groups 5-6 included in Level 2, and groups 7-10 included in Level 3.

The results shown in Table III reveal major differences in the time scores on 5 (Sign Making), 20 (Grommet Assembly), 32 (Ladder Assembly), 36 (Lock Assembly), 40 (Filing by Numbers), 50 (Filing by Letters), 51 (Nail and Screw Sort), 52 (Adding Machine) 53 (Payroll Computation), 60 (Resistor Reading), and 70 (Pipe Assembly). Differences on error scores were discovered on 1 (Nut, Bolt & Washer Assembly), and 90 (Condensing Principle). Differences in both the time and error scores were found on 4 (Budgette Assembly), 34 (Hardware Assembly), 35 (Telephone Assembly), 41 (Proofreading), and 54 (Computing Postage).

The reader should be cautioned, however, that work samples 36 (Lock Assembly), 70 (Pipe Assembly) and

90 (Condensing Principle) have extremely low numbers of participants and thus the results should be interpreted cautiously. Work samples 33 (Metal Square Fabrication) and 80 (Blouse/Vest Making) were not available for use at this facility during this study.

### Discussion

It has been 11 years since the last major revision of the norms published by the Vocational Research Institute, and since that time there has been little empirical attention comparing current client results with the established norms. In general, this study has established that several of the normative groupings for the JEVS work sample system suitable for use by facilities serving rural disability populations are comparable to those issued by the publisher in 1975. However, further study is indicated by the differences found in some of the results when compared to data provided by the Vocational Research Institute. It is hoped that this study will encourage other practitioners to begin the accumulation of data for not only establishing their own facility norms, but also explaining the differences among various group performances. As stated previously, this research project has not ended with the compilation of the data reported earlier in this paper. The collection of norm data will continue indefinitely, and periodic analysis of the data is planned for the future. Eventually it is hoped that enough data can be collected so that it will become practical for the norms of the JEVS work samples to be placed into percentile groupings.

Recent literature (Rehab Brief, 1983), has documented that there are major differences in the lifestyles of disabled persons in urban locations as opposed to people residing in rural environments. The purpose of this study was to establish norms for the JEVS Work Sample Battery suitable for use by rehabilitation facilities serving rural disability populations. It is hoped that this study will not only generate a continued interest in the norming process for all assessment instruments used in vocational evaluation, but also encourage further study of the specific challenges faced by facilities serving persons with disabilities residing in rural areas.

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TABLE I

JEVS Times Deciles

WORKSAMPLE	N	MEAN	SD	1	2	3	4	5	6	7	8	9	10
JEVS 1	252	61.37	30.48	90+	75-89	64-74	61-63	58-60	49-57	44-48	40-43	37-39	0-36
JEVS 2	225	31.38	14.75	46+	37-45	34-36	31-33	29-30	25-28	23-24	22	19-21	0-18
JEVS 3	141	51.75	23.30	80+	68-79	60-67	53-59	47-52	42-46	36-41	32-35	28-31	0-27
JEVS 4	177	69.76	27.91	96+	84-95	79-83	75-78	65-74	60-64	54-59	48-53	41-47	0-40
JEVS 5	214	39.97	20.17	66+	51-65	45-50	38-44	35-37	31-34	28-30	25-27	21-24	0-20
JEVS 10	246	41.95	15.54	66+	51-65	47-50	43-46	38-42	34-37	31-33	28-30	24-27	0-23
JEVS 11	309	40.14	18.91	61+	51-60	47-50	42-46	37-41	32-36	29-31	24-28	21-23	0-20
JEVS 12	259	8.31	4.94	14+	11-13	9-10	8	7	6	5	4	4	0-3
JEVS 20	229	23.35	10.96	34+	29-33	26-28	22-25	20-21	19	17-18	15-16	14	0-13
JEVS 30	244	13.33	15.35	23+	16-22	13-15	10-12	9	8	7	6	5	0-4
JEVS 31	237	26.69	16.00	43+	34-42	29-33	25-28	23-24	21-22	19-20	15-18	12-14	0-11
JEVS 32	92	91.33	40.87	146+	112-145	104-111	94-103	85-93	79-84	63-78	59-62	49-58	0-48
JEVS 34	267	48.67	21.62	72+	59-71	53-58	48-52	45-47	42-44	38-41	33-37	29-32	0-28
JEVS 35	161	49.81	23.04	79+	64-78	56-63	50-55	46-49	40-45	34-39	30-33	28-29	0-27
JEVS 36	40	25.98	16.70	46+	37-45	30-36	23-29	19-22	18	15-17	13-14	8-12	0-7
JEVS 40	241	69.34	35.47	113+	92-112	79-91	71-78	64-70	58-63	50-57	40-49	30-39	0-29
JEVS 41	150	43.72	18.77	72+	59-71	48-58	43-47	39-42	35-38	32-34	28-31	24-27	0-23
JEVS 50	178	76.94	37.50	114+	101-113	88-100	74-87	70-73	63-69	59-62	50-57	28-49	0-37
JEVS 51	169	23.02	14.08	40+	30-39	25-29	22-24	20-21	19-19	15-16	14	11-13	0-10
JEVS 52	201	48.38	24.44	81+	62-80	52-61	48-51	42-47	39-41	36-38	30-35	24-29	0-23
JEVS 53	164	38.30	18.00	88+	65-87	51-64	44-50	38-43	33-37	30-32	26-29	21-25	0-20
JEVS 54	88	96.64	32.64	138+	121-137	108-120	107	99-106	85-98	80-84	69-79	51-68	0-50
JEVS 60	126	46.62	24.18	82+	65-81	52-64	45-51	38-44	35-37	32-34	28-31	22-27	0-21
JEVS 70	19	26.11	12.14	50+	36-49	35	30-34	24-29	19-23	18	15-17	9-14	0-8
JEVS 90	10	165.10	75.82	234+	172-233	149-171	134-148	133	132	129-131	112-128	110-111	0-109

TABLE II

JEVS Error Deciles

WORKSAMPLE	N	MEANS	SD	1	2	3	4	5	6	7	8	9	10
JEVS 1	252	10.10	17.08	26+	16-25	9-15	6-8	4-5	2-3	1	0	0	0
JEVS 2	225	25.73	13.63	44+	37-43	34-36	30-33	28-29	21-27	16-20	13-15	8-12	0-7
JEVS 3	141	4.25	3.77	10+	7-9	5-6	4	3	2	2	1	0	0
JEVS 4	177	2.37	3.13	8+	5-7	3	2	1	0	0	0	0	0
JEVS 5	214	4.91	5.65	11+	7-10	5-6	4	4	3	2	1	1	0
JEVS 10	246	0.45	1.05	2+	1	0	0	0	0	0	0	0	0
JEVS 11	309	1.76	2.48	4+	3	2	1	1	0	0	0	0	0
JEVS 12	259	2.5	5.25	8+	3-7	1-2	0	0	0	0	0	0	0
JEVS 20	229	0.01	0.11	1+	0	0	0	0	0	0	0	0	0
JEVS 30	244	0.97	1.98	2+	1	1	0	0	0	0	0	0	0
JEVS 31	237	3.39	5.83	9+	4-8	3	2	1	1	0	0	0	0
JEVS 32	92	0.57	1.16	2+	1	0	0	0	0	0	0	0	0
JEVS 34	267	12.34	20.25	54+	20-53	6-19	3-5	1-2	0	0	0	0	0
JEVS 35	161	4.39	10.58	14+	7-13	3-5	2	1	0	0	0	0	0
JEVS 36	40	1.38	1.35	3+	2	1	1	1	0	0	0	0	0
JEVS 40	241	3.75	6.77	10+	6-9	4-5	2-3	1	0	0	0	0	0
JEVS 41	150	88.83	34.12	0-30	31-62	63-81	82-89	90-95	96-101	102-107	108-116	117-121	122+
JEVS 50	178	5.47	8.87	10+	8-9	6-7	5	4	3	3	2	1	0
JEVS 51	169	4.3	10.74	9+	7-8	5-6	3-4	2	1	1	0	0	0
JEVS 52	201	3.96	3.47	10+	6-9	5	4	3	2	2	1	0	0
JEVS 53	164	5.08	3.16	9+	8	6-7	5	5	4	3	2	1	0
JEVS 54	88	20.31	12.40	32+	27-31	25-26	24	22-23	17-21	15-16	10-14	4-9	0-3
JEVS 60	126	7.23	6.74	25+	16-24	12-15	11	8-10	6-7	4-5	2-3	1	0
JEVS 70	19	1	2.31	3+	2	1	1	0	0	0	0	0	0
JEVS 90	10	7.6	8.21	20+	10-19	9	6-8	4-5	3	2	1	1	0

TABLE III

## Comparison Norms

	EDC Errors	JEVS Errors	EDC Times	JEVS Times					
JEVS 1	0-2 3-5 6+	0-13 14-22 23+	0-48+ 49-59 60+	0-51 52-61 62+	JEVS 40	0 1-2 3+	0-1 2 3+	0-57 58-70 71+	0-69 70-86 87+
JEVS 2	0-20 21-29 30+	0-21 22-28 29+	0-24 25-30 30+	0-26 27-31 32+	JEVS 41	102+ 90-101 0-89	93+ 76-92 0-75	0-34 35-42 43+	0-43 44-54 55+
JEVS 3	0-2 3-4 5+	0-3 4-7 8+	0-41 42-52 53+	0-42 43-54 55+	JEVS 50	0-3 4 5+	0-4 5-6 7+	0-62 63-73 74+	0-83 84-105 106+
JEVS 4	0 1 2+	0-2 3-4 5+	0-59 60-74 74+	0-53 54-64 65+	JEVS 51	0-1 2 3+	0-2 3-5 6+	0-16 17-21 22+	0-15 16-19 20+
JEVS 5	0-1 2-4 5+	0-3 4 5+	0-31 32-38 39+	0-38 39-49 50+	JEVS 52	0-2 3 4+	0-3 4-5 6+	0-38 39-47 48+	0-51 52-65 66+
JEVS 10	0 1+	0 1+	0-33 34-43 44+	0-36 37-43 44+	JEVS 53	0-3 4 5+	0-5 6-7 8+	0-29 30-37 38+	0-40 41-51 52+
JEVS 11	0 1 2+	0-1 2+	0-28 29-41 42+	0-30 31-37 38+	JEVS 54	0-16 17-23 24+	0-11 12-18 19+	0-84 85-106 107+	0-101 102-125 126+
JEVS 12	0 1+	0 1 2+	0-5 6-7 8+	0-5 6-7 8+	JEVS 60	0-3 4-7 8+	0-6 7-11 12+	0-34 35-43 44+	0-48 49-63 64+
JEVS 20	0 1+	0 1+	0-16 17-21 22+	0-19 20-24 25+	JEVS 70	0 1+	0-1 2 3+	0-18 19-29 30+	0-33 34-46 47+
JEVS 30	0 1+	0 1 2+	0-7 8-9 9+	0-9 10-14 15+	JEVS 90	0-2 3-5 6+	0-10 11-18 19+	0-130 131-133 134+	0-127 128-165 166+
JEVS 31	0 1 2+	0 1 2+	0-20 21-24 25+	0-19 20-26 27+					
JEVS 32	0 1+	0 1 2+	0-70 71-93 94+	0-98 99-126 127+					
JEVS 34	0 1-2 3+	0-2 3-9 10+	0-41 42-47 48+	0-44 45-53 54+					
JEVS 35	0 1 2+	0-2 3 4+	0-39 40-49 50+	0-54 55-70 71+					
JEVS 36	0 1 2+	0 1-2 3+	0-17 18-22 23+	0-36 37-51 52+					