Teaching Peer-Tutors How to Proficiently Utilize the Standard Celeration Chart: A Field Test

Edward J. Cancio and Michael Maloney

Over the last 14 years students with varying levels of age and ability have been taught by a Direct Instruction procedure to chart the Standard Celeration Chart. Lesson plans for learning the Chart have been modified to accommodate developments in data-based decision making. Three peer tutors in a regular middle school were trained to use the Chart in a special education classroom serving students with autism and severe mental retardation. All peer tutors mastered charting after completion of the lesson plans!

In the past two decades many classroom teachers have been introduced to Precision Teaching. Many of these teachers have been convinced of Precision Teaching's benefits for instruction and making data-based decisions for their students. Educators in a variety of educational settings have been trained to implement Precision Teaching, but have difficulty in consistently implementing its procedures, specifically, collecting and analyzing data. As many as 70% of the personnel who were instructed in Precision Teaching terminated daily charting by the end of their second year (Beck, 1981). A rationale for this practice is that many teachers are overburdened by their responsibilities, (e.g., behavior management, individualized instruction, group instruction, consultation, bus duty). For example, in the special education class of 10 to 15 students with several pinpoints per student, the teacher may become overwhelmed with charting and decision making, especially without paraprofessional assistance (Maloney, 1982). Another rationale for the termination of Precision Teaching is that charting and decision making is done by staff members, not by students.

Lindsley (1992) indicated that the least costly and most effective learning improvement transpires when chart-based decisions are made by learners and their teachers. In the 1970's Lindsley began training teachers to teach their pupils to proficiently self-record their own academic frequencies on Standard Celeration Charts. This group of teachers discovered when their students charted their own progress, the frequency and standard self-recording was far superior to traditional educational monitoring (Lindsley, 1990). Lindsley (1980) further stated that, in general, students: (a) in regular education settings learn curriculum at x1.1 per week, (b) in classrooms where teachers use effective instruction technology (e.g., effective behavior management, use of Direct Instruction) learn curriculum at a rate of x1.3 per week, (c) in classrooms where continuous data are charted on Standard Celeration Charts learn curriculum at x1.5 per week, and (d) in classrooms where students chart their own data and assist in the data-based decisions learn curriculum, at x2.0 per week.

The benefits of allowing students to chart their own data and make data-based decisions are many. They include: (a) involving students in their learning; (b) giving students greater gains in learning; (c) reducing teacher's responsibilities - "reducing teacher overhead"; (d) sharing decisions that may cause students to become more invested in their educational program; and (e) enhancing accountability among students, teachers, parents and administrators.

Precision Teachers have demonstrated that students can learn to monitor their own behavior and to make data-based decisions. Students need to learn how to chart, use data to promote excellence in classrooms, and encourage teachers to collect data to make data-based decisions. Ann Starlin pioneered an effort to teach students how to chart and make data-based decisions in the 1970's, but many teachers have found it difficult to teach charting to their students.

Engelmann (1969) described the essential components of a teaching method in which

concepts are presented so that they have only one interpretation. Direct Instruction has developed a number of principles of effective teaching to guarantee the learning of a concept or operation by any student. This is accomplished by: (a) teaching both instances and non-instances of a concept or operation, (b) immediately rewarding correct responses and correcting incorrect responses, (c) pacing tasks and arranging the environment for maximum learner attention, and (d) teaching the task until all students in the group respond quickly and correctly.

Precision Teaching can compliment other instructional methods. Some of the most powerful applications have combined Precision Teaching with Direct Instruction. Direct Instruction has even been used to teach students to proficiently chart the Standard Celeration Chart (Maloney, 1982). In applying this instructional methodology to the key concepts incorporated in Precision Teaching, we provide teachers and practitioners an avenue to proficiently use the Standard Celeration Chart. The collaboration of effective instruction, through measurement, and sufficient direct practice, should result in fluent charting, and appropriate data-based decisions that may result in greater gains by the student. The purpose of this article is to evaluate the effectiveness of the Direct Instruction and Precision Teaching curriculum outlined in an accompanying article in this issue.

Method

Participants & Setting

This field test was conducted in a regular middle school program for students with severe disabilities, serving four students with autism and five with severe mental retardation. Staff consisted of one full-time teacher, three full-time paraprofessionals who instructed vocational training, self-help skills (e.g., toileting, grooming, dressing), money recognition, writing, counting, daily living (e.g., setting table, preparing meals and snacks, washing dishes, vacuuming), language, and fine and gross motor training. Students participated in integration activities, including volunteer work in the middle school cafeteria, home economics, and community training (e.g., ordering meals in fast food restaurants, purchasing reinforcers from a local variety store, purchasing foods from local grocery stores).

Three female peer tutors participated in the field testing of this procedure. Jamie and Teresa were eighth grade, 12 year old middle school students who functioned socially and academically similar to students of comparable age. April was a seventh grade, 11 year old who also functioned satisfactorily socially and academically. This program regularly used peer tutors to assist in the implementation of the individual educational plans of its students.

Results

Table 1 summarizes results of the field test with three peer tutors. Charts 1-3 show one of the peer tutor's performance as she learns to chart proficiently. A complete description of the 19 phases is presented in the accompanying article, "Teaching Students How to Proficiently Utilize the Standard Celeration Chart."

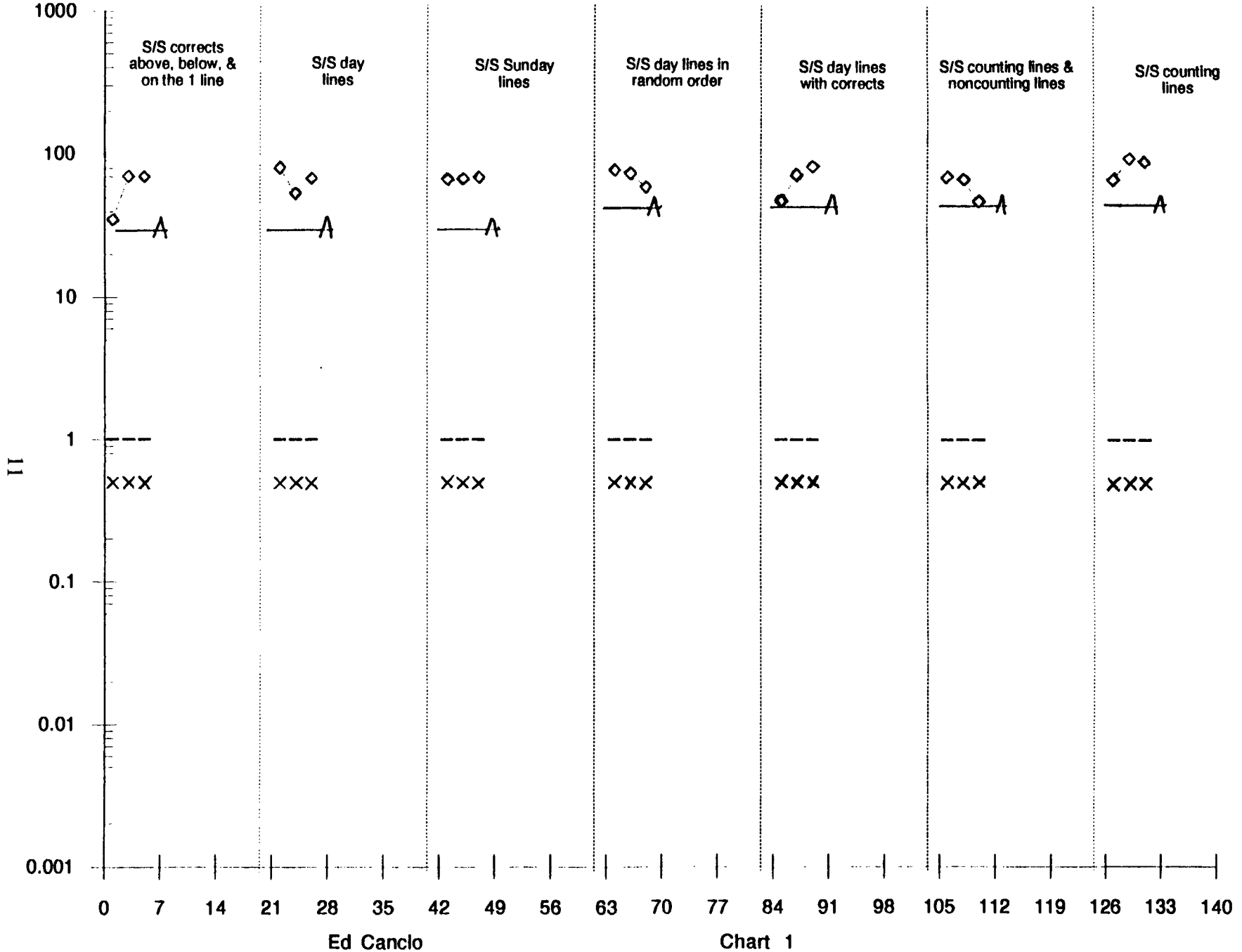
Discussion

Many educators have been convinced of Precision Teaching's benefits for instruction and data-based decision making; however, many teachers often quit consistent charting after one or two years, stating overwhelming responsibilities as the main reason. A possible solution to this problem is to teach students how to chart data on a Standard Celeration Chart and how to make data-based decisions (Lindsley, 1992; Maloney, 1982). Procedures outlined in these articles in this issue can help educators teach their students to proficiently chart data on a Standard Celeration Chart and make data-based decisions. We hope this will be helpful to educators.

Table 1

Results of Field Test for Each Peer Tutor

Phase	Summary	Jamie		Teresa		April	
		FC	EIC	FC	EIC	FC	EIC
1. See/Say corrects above, below, and on the 1 line	All reached aim of 30 - 40/min. after instruction: Lesson 1.	35	0	70	0	70	0
2. Discriminate day lines and non-day lines	All reached aim of 30 - 40/min. after instruction: Lesson 1.	80	0	53	0	68	0
3. Discriminate Sunday and non-Sunday lines	All reached aim of 30 -40/min. after instruction: Lesson 1.	68	0	68	0	70	0
4. See/say day lines in random order	All reached aim of 40 - 60/min. after instruction: Lesson 1.	78	0	75	0	60	0
5. See/say day lines with data	All reached aim of 40 - 60/min. after instruction: Lesson 1.	47	0	72	0	82	0
6. Discriminate counting lines from non-counting lines	All reached aim of 40 - 60/min. after instruction: Lesson 2.	70	0	68	0	47	0
7. See/say counting lines	All reached aim of 40 - 60/min. after instruction: Lesson 2.	67	0	95	0	90	0
8. See/say counting line scores	All reached aim of 60/min. after instruction: Lesson 2.	67	0	70	0	80	0
9. See/say day line and score	All reached aim of 60/min. after instruction: Lesson 2.	60	0	68	0	62	0
10. See/say direction of celeration	All reached aim of 40 - 60/min. after instruction: Lesson 3.	80	0	48	0	77	0
11. See/say record floors	All reached aim of 60/min. after instruction: Lesson 3.	68	0	77	0	88	0
12. See/say Chart symbols	All reached aim of 60/min. after instruction: Lesson 3.	65	0	65	0	62	0
13. See/say Chart labels	All reached aim of 60/min. after instruction: Lesson 3.	77	0	77	0	78	0
14. Discriminate instances, zero and non-instances of corrects	All reached aim of 60/min. after instruction: Lesson 4.	88	0	70	0	78	0
15. Discriminate instances, and non-instances of errors	All reached aim of 60/min. after instruction: Lesson 4.	120	0	78	0	76	0
16. See/say Chart-based decisions	All reached aim of 40 - 60/min. after instruction: Lesson 4.	46	0	45	0	53	0
17. See/say learning pictures	All reached aim of 60/min. after instruction: Lesson 4.	72	0	72	0	78	0
18. Dropping dots on a Chart	Two tutors reached aim after instruction while one took two sessions to reach aim.	23	0	33	0	34	1
19. Charting student behaviors on the Standard Celeration Chart	All proficiently charted data of first author's math practice sheet timing.						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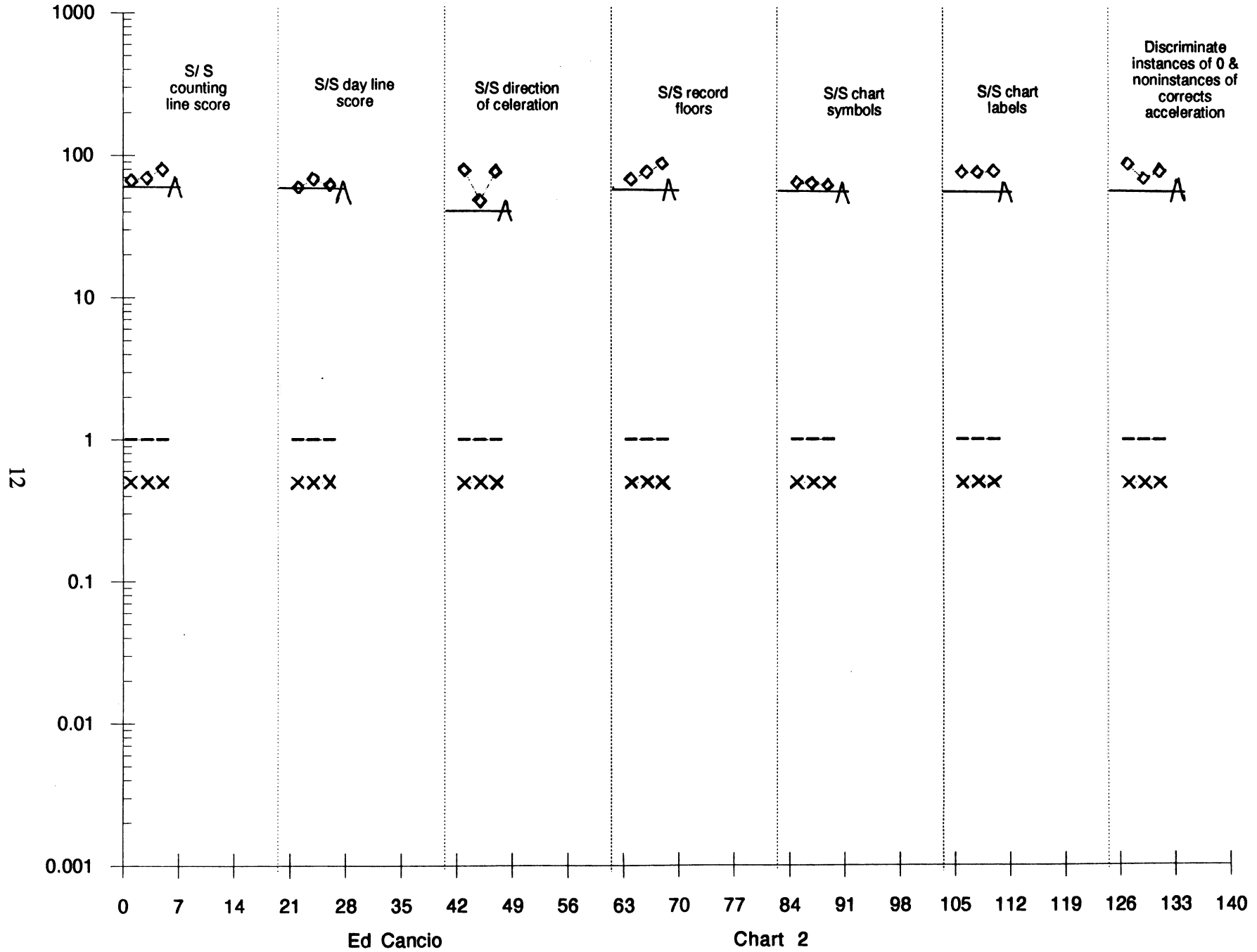
S/S corrects above, below, & on the 1 line
S/S day lines
S/S Sunday lines
S/S day lines in random order
S/S day lines with corrects
S/S counting lines & noncounting lines
S/S counting lines
0 7 14 21 28 35 42 49 56 63 70 77 84 91 98 105 112 119 126 133 140
Ed Canclo
Chart 1


1000
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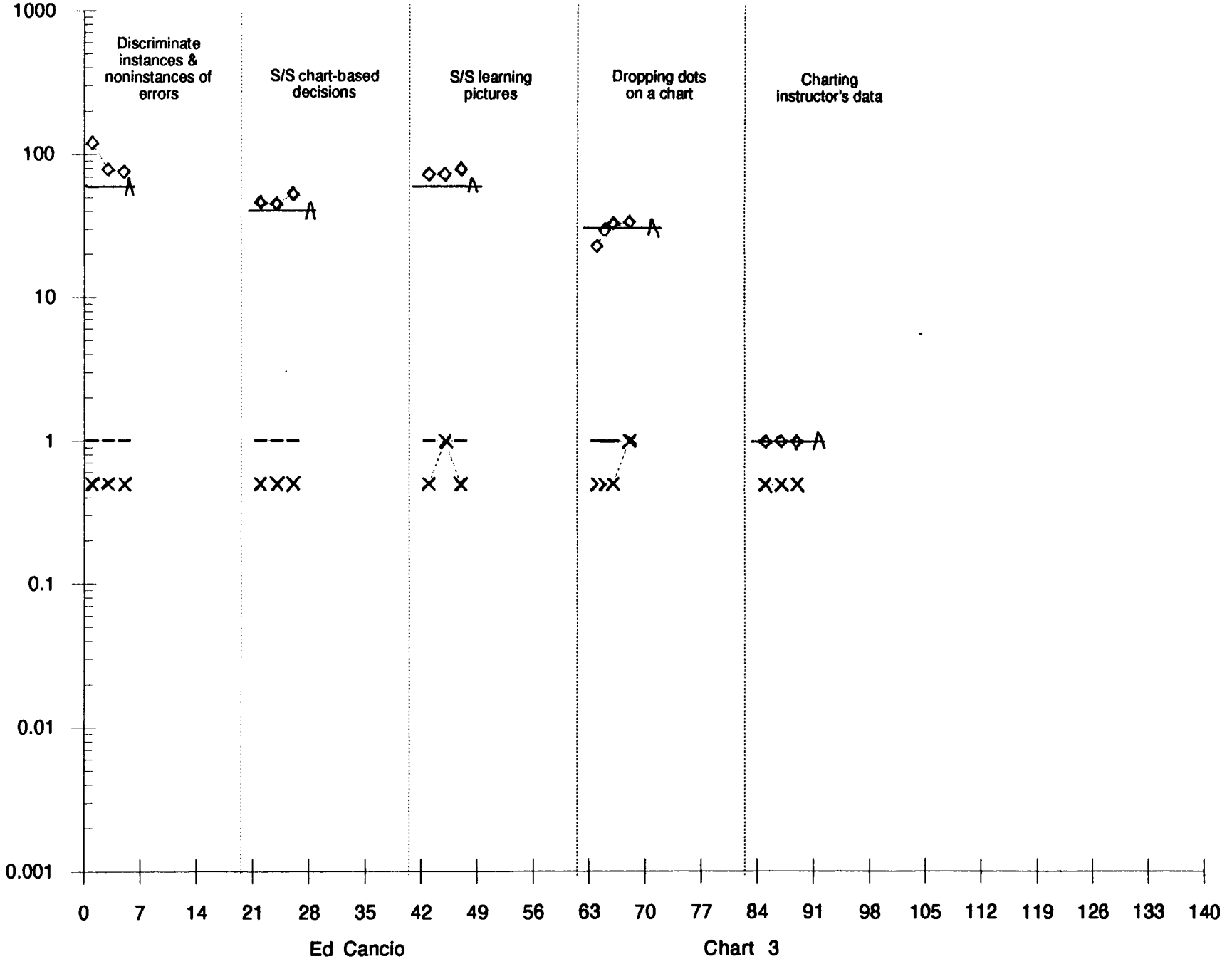
S/ S counting line score
S/S day line score
S/S direction of celeration
S/S record floors
S/S chart symbols
S/S chart labels
Discriminate instances of 0 & noninstances of corrects acceleration
0 7 14 21 28 35 42 49 56 63 70 77 84 91 98 105 112 119 126 133 140
Ed Cancio
Chart 2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0.1
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Discriminate instances & noninstances of errors
S/S chart-based decisions
S/S learning pictures
Dropping dots on a chart
Charting instructor's data
0
7
14
21
28
35
42
49
56
63
70
77
84
91
98
105
112
119
126
133
140
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Chart 3

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Where Are They Now?

Did you know that the first editor of *Journal of Precision Teaching*, Patrick McGreevy, is alive and well as the Behavior Analysis for the Orange County School System in Orlando, Florida? Last June he married and became a parent to two adolescents. Patrick can be reached at 445 W. Amelia Street, Orlando, FL 32801, (407) 849-3249. Continuing to preach precision, Pat sends his best regards to all. Look for contributions from Pat in future issues!

Edward J. Cancio is affiliated with the Department of Special Education, Utah State University, UMC 65, Logan, UT 84322-2865, where he is completing his doctorate. Dr. Michael Maloney founded The Learning Center, a private school combining Direct Instruction with Precision Teaching. He can be contacted at 28 Isabell Street, Belleville, Ontario, Canada K8N5A5.

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