

CHART SHARES

Retention and Application of Computerized Fluency Building

Claudia McDade

Computer-Based Precision Learning System™ (CBPL)

Since 1978 the Center for Individualized Instruction, an academic support center, at Jacksonville State University has used fluency-aimed computer-assisted instruction to assist students in developing both basic and advanced skills. The current system presents academic material in small increments to students, records their accuracy and frequency, provides immediate feedback after each performance session, allows practice until mastery is reached, and congratulates them when they reach mastery, as defined by a fluency criterion. Courses using the system have included developmental reading and writing, study skills, anthropology, archeology, biology, history, political science, and psychology.

Personality Theories: An Undergraduate Psychology Course

I have taught an undergraduate psychology class in personality theory (PSY 335) since 1984. Using fluency building strategies, I have modified the course every semester on the basis of student performance data, a minuscule amount of which I present to demonstrate both retention and application of knowledge developed with the CBPL.

Chart 1: Fall, 1987

Early in my conversion to Precision Teaching, I compared student essay performance on units preceded by CBPL fluency building of basic terminology/concepts with units requiring only essays. This Chart indicates the numbers of correct concepts generated per minute on four different essays. Two (Freud and Jung) were

preceded by CBPL units, while two (Rogers and Maslow) were not preceded by computer-assisted instruction. Mid frequencies on these chart collections indicate that units preceded by CBPL fluency aims produced higher frequencies with tighter ranges than units tested by essay performance alone.

Chart 2: Fall, 1991

An early attempt I made to evaluate whether the CBPL units produced student recall of the material is shown in a chart collection for one unit for one class. Mid CBPL celebration is compared with mid celebration of complete thoughts generated in one minute. "Complete thoughts generated" were counted from correct ideas, concepts, and terms *written* in one minute *immediately after* CPBL performance.

Chart 3: Spring, 1998--Complete Thoughts

Students were provided free access to the CBPL and required to master a CBPL unit within a time constraint--usually two weeks--in order for the performance to affect their course grades. Class mid celebrations per unit were plotted on the top half of the Chart. On Mondays during regularly scheduled class time, students were asked to write "complete thoughts" (as defined above) from one of the ten theorists studied in depth. The "once a day" portion of this Chart indicates both increasing fluencies and tighter ranges of complete thoughts on the Freud unit.

Practice Sheet: Theorists

At the 1997 International Precision Teaching Conference Bob Worsham graciously gave his audience templates he designed on Microsoft's Excel to produce randomized practice sheets with both numerical and textual material and a variety of sophistication. A simple use of his template shown here is to list a number of terms, asking students to "See the term/Say the theorist associated with it" or to "See the

CALENDAR WEEKS

DAY MO YR DAY MO YR DAY MO YR DAY MO YR DAY MO YR

1000

500

100

50

10

5

1

.5

.1

.05

.01

.005

.001

0

COUNT PER MINUTE

78

FREUD

MASLOW

JUNG

ROGERS

n=15

n=14

COUNTING PERIOD FLOORS

MIN HRS

1 2 5 10 20 50 100 200 500 1000 -24

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

SUCCESSIVE CALENDAR DAYS

Psy 50: Fall '87

SUPERVISOR

ADVISER

MANAGER

BEHAVIOR

AGE

LABEL

COUNTED

DEPOSITOR

AGENCY

TIMER

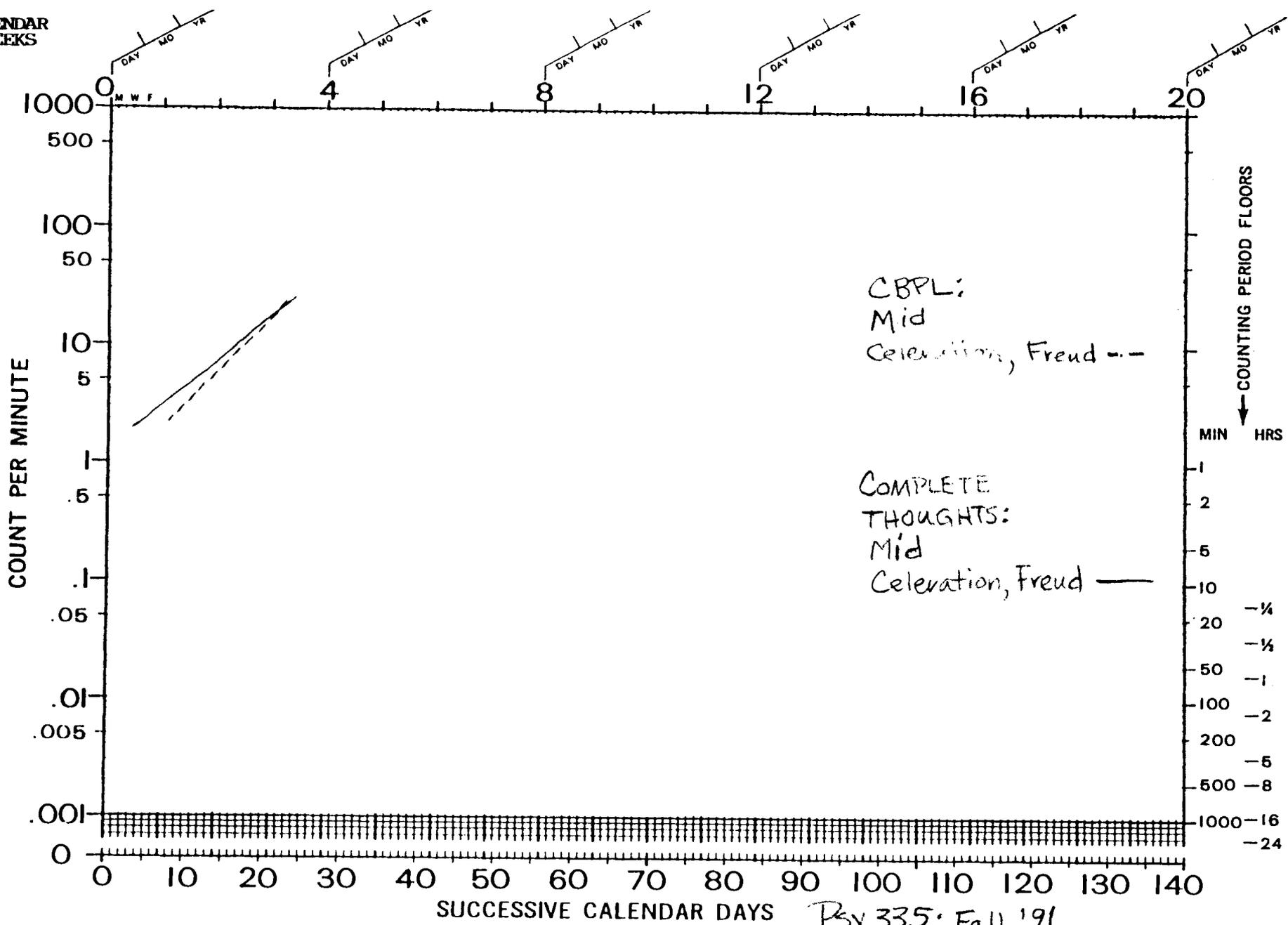
COUNTER

CHARTER

CHART 1

CALENDAR WEEKS

79



SUPERVISOR	ADVISER	MANAGER	Psy 335: Fall '91					
DEPOSITOR	AGENCY	TIMER	COUNTER	CHARTER	BEHAVIOR	AGE	LABEL	COUNTED

CALENDAR WEEKS

10 | 1 | 98
DAY MO YR

Freud

15 | 2 | 98
DAY MO YR

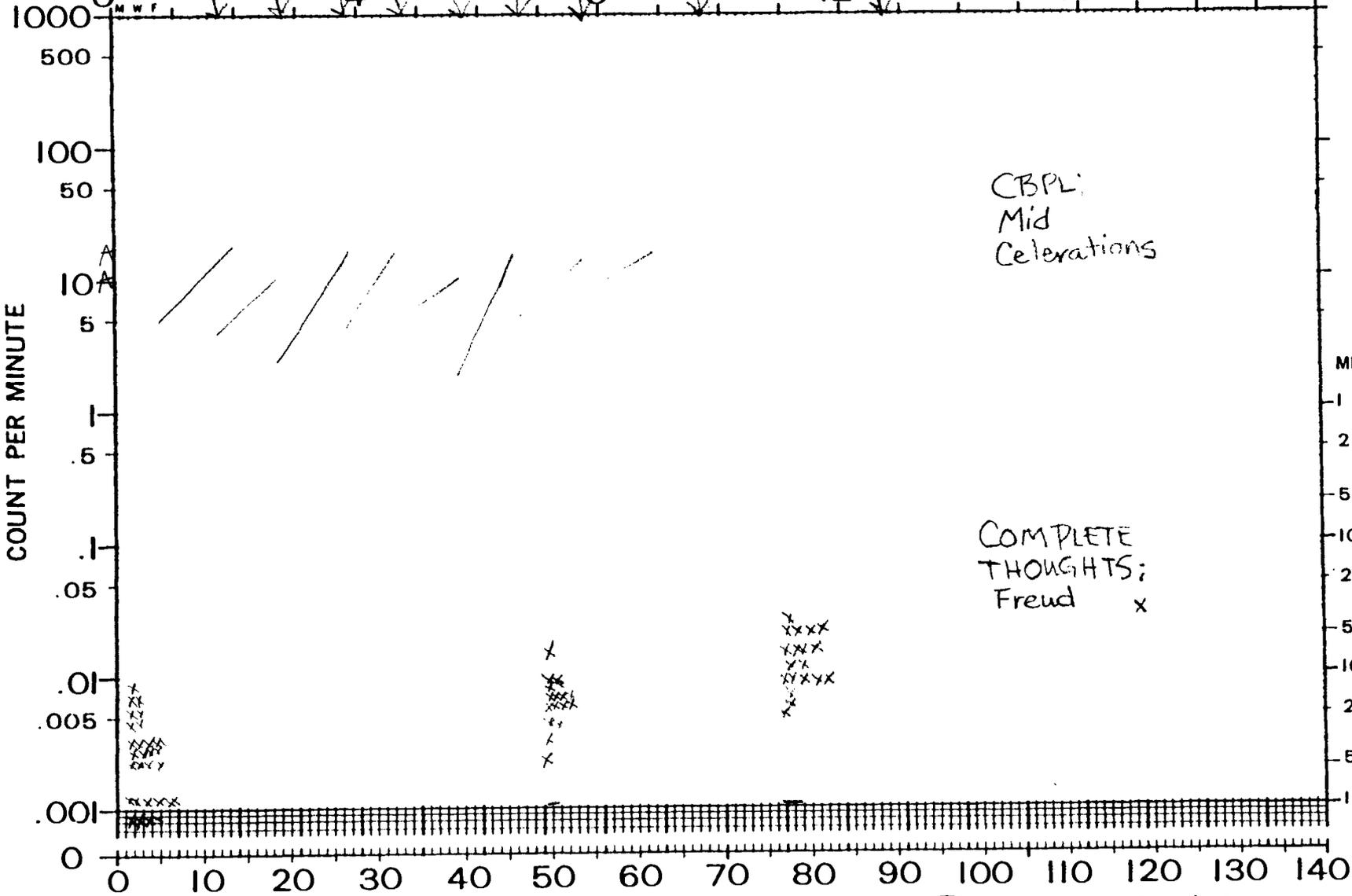
15 | 3 | 98
DAY MO YR

12 | 4 | 98
DAY MO YR

16 for CBPL units

↓ Deadlines

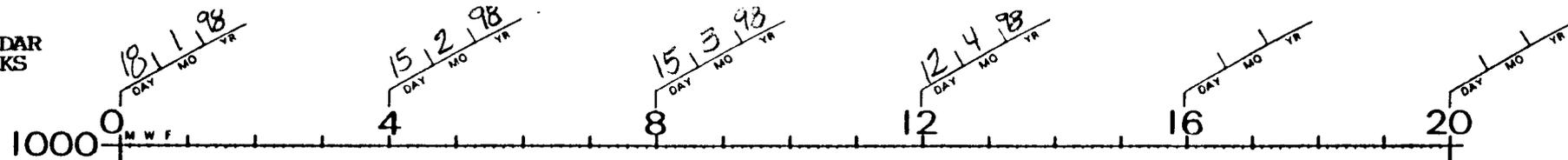
20
DAY MO YR



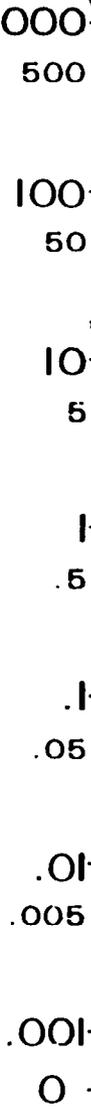
Psy 335: Spring '98

SUPERVISOR	ADVISER	MANAGER	BEHAVIOR	AGE	LABEL	COUNTED
DEPOSITOR	AGENCY	TIMER	COUNTER	CHARTER		

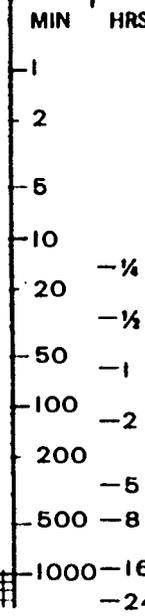
CALENDAR WEEKS



COUNT PER MINUTE



COUNTING PERIOD FLOORS



CBPL:
Mid
Celebrations

THEORISTS
PRACTICE SHEETS:
See/Write •
See/Say x

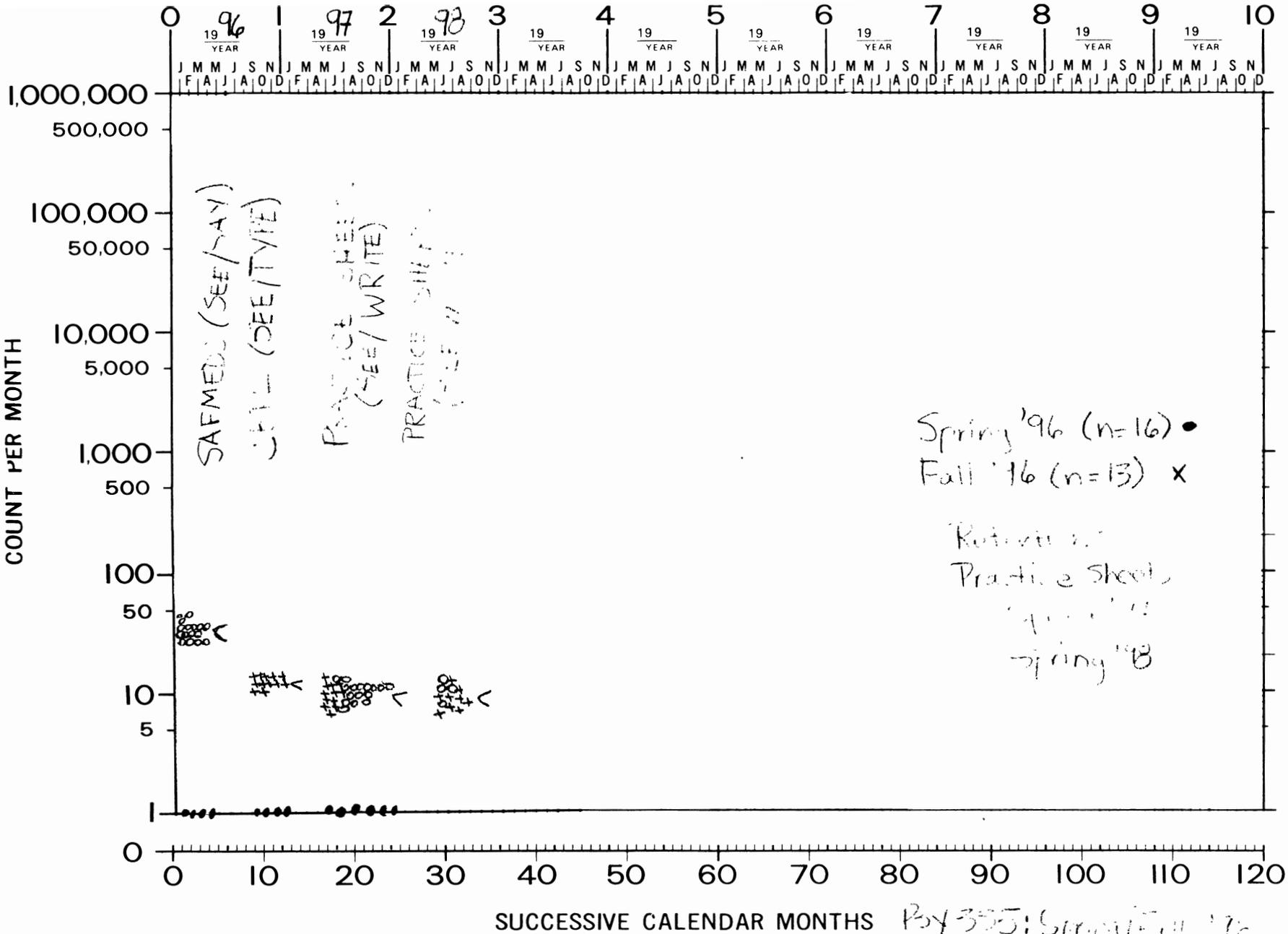
181

SUCCESSIVE CALENDAR DAYS

Psy 335: SPRING '98

SUPERVISOR	ADVISER	MANAGER	BEHAVIOR	AGE	LABEL	COUNTED
DEPOSITOR	AGENCY	TIMER	COUNTER	CHARTER		

CHART 4



SUPERVISOR	ADVISER	MANAGER	BEHAVIOR	AGE	LABEL	COUNTED
DEPOSITOR	AGENCY	TIMER	COUNTER	CHARTER	CHART 5	

term/Write the theorist associated with it". Data using this template follows:

Chart 4: Spring, 1998--Practice Sheets

The same class mid celerations as Chart 3 are paired here with the regularly scheduled Wednesday class interventions. Students were given one of 10 randomized "Practice Sheets: Theorists" and asked to "See/Write" or "See/Say". This Chart indicates that performance in both channels improved over the course of the semester.

Chart 5: Retention from Fall '96/Spring '96 classes to Spring '97/Spring '98

Students scheduling PSY 335 in Spring '96 took it at an off-campus site without benefit of computers (and thus the CBPL), so they used SAFMEDS instead (see McDade, Rubenstein, and Olander, 1983). Those taking the course in Fall '96 used CBPL. In Spring Semester, 1997 most of these students were "captured" in a senior seminar and asked to complete a see-write practice sheet (earlier version--not as nice as Bob Worsham's template). A ceiling of maximum correct answers on this sheet was 18. Note both the reasonably high fluency and tight range of students one semester to one year later. In Spring, 1998, 12 of these students were still available in graduate or undergraduate classes and completed another version of the same practice sheet. Again, the fluencies are still high given the amount of time since the course.

Conclusion:

Since I have included Precision Teaching strategies in combination with application essays in PSY 335, students have earned an unprecedented proportion of "A" and "B" grades in PSY 355 compared with other undergraduate psychology courses. These data have demonstrated to students, faculty, and administrators that student performance in this course requires high fluencies, resulting in both retention and application long beyond the course.

Reference

McDade, C. E., Rubenstein, S. B., and Olander, C. P. Parallels between frequency testing and performance on essay questions in a theories of personality course. *Journal of Precision Teaching, IV* (1), 1983.

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