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request to persons interested in developmental disabilities. Beginning in January, 1979, monthly data were collected on the number of requests for materials and the number of items loaned. Until recently, these data were reported quarterly in tabular form. This material provided a look at the present status of TAC and a momentary look at changes in the use of TAC. In March, 1982, the Director of the UAF commissioned two staff members to take a closer look at the use of TAC over time. These two staff members decided to retrieve these monthly data and plot them on the monthly Standard Celeration Chart.

Chart 1 provides a continuous look at the use of TAC since monthly data were recorded. This Chart displays the number of requests for materials and the number of items loaned. The number of requests accelerated at the rate of X1.3 from January, 1979, through June, 1981. During this same period, the number of items loaned accelerated at the rate of X1.4. From Chart 1, it is evident that the use of TAC continuously increased for two and one-half years. Comparing the points at which the two celeration lines cross the first and last data months provides an additional conclusion: On the average, the number of items loaned per request doubled over this two and one-half year period of time.

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#### **DIGIT TYPING FOR MICRO-COMPUTER MATH PROGRAMS: TOWARD A DETERMINATION OF PROFICIENCY STANDARDS**

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Micanopy, Florida

**Donna McCarthy-Jensen**  
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## **Chart-sharing**

### **MONITORING THE USE OF A SPECIALIZED LIBRARY**

**Cori Brown and Beth Gibson**  
University of Missouri-Kansas City UAF

The University Affiliated Facility (UAF) at the University of Missouri-Kansas City has operated a library of print and non-print materials related to developmental disabilities since 1978. This library, referred to as the Technical Assistance Clearinghouse (TAC), provides materials upon

The recent influx of micro-computers into the American classrooms has placed several pressing demands upon educational researchers and product-materials developers. A critical need exists for rate-based software, adequate promotion and marketing of the developed materials, a timing standardization for precision-teaching software, and the sharing of computer-generated data to determine present proficiency standards.

Using Spark 80 multiplication tables software (Trifiletti, Trifiletti, & Williams, 1979), ten exceptional education middle school students with two months of intermittent keyboard practice were timed daily on 50 see-type random numerals (0-10) for a period of one school week. Frequency determination has been programmed into Spark 80, thereby making comparison with other frequency-oriented programs somewhat difficult. It is worthwhile to note that Spark 80 uses a clock-on/clock-off approach; the clock is on as the example is introduced, going off after the student response. With the introduction of the next example, the clock again comes on. We feel this is an excellent software approach. It reduces eye strain, anxiety, and video confusion, and, in our opinion, greatly increases the validity of the resulting scores. Time is also built into the program for introducing interventions.

The see-type random numerals program was improvised by Donna to give us an adequate gauge upon which to determine individualized proficiency standards. Donna transformed the Spark 80 Times 1 drill into a see-type random numerals (0-10) utilizing ordinary masking tape to cover the x1 on each example. The students and Ken were asked to quickly type the numeral displayed on their monitor. All the students (and Ken) completed all 50 numerals each day. The program computed digits typed per minute.

The resulting data are displayed in Chart 1. From these and other data, we conclude and generalize:

- (1) a see-type digits performance standard is presently 60-100 digits per minute;
- (2) a see-type digits on random math operations (sums to 18, differences from 18, multiplication 0-9, and simple division) proficiency standard ranges from 50 digits per minute for the beginning typist to 70-80 digits per minute for the more experienced;
- (3) an individualized performance standard should not be established for an individual until at least a week of data-gathering has taken place;
- (4) accelerations of  $x1.5+$  should be expected from novice typists during the first week of timings; frequency tends to level off at approximately 80-90 digits per minute after the first week of practice;
- (5) as more and more students acquire digit-typing proficiency, performance standards should rise accordingly; frequencies of 100-200 digits per minute with no errors should be commonplace

within several years; and

(6) for performance standard generalizations to be meaningful, software timing standardization is needed; for precision teaching to be meaningful as a national research tool in an age of micro-computer interactions, a standard timing gauge is critical; this must be accomplished while the technology is new, before the market is flooded with frequency-based software.

If you have questions about the software, please write us. We look forward to comment and similar data.

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## About PT

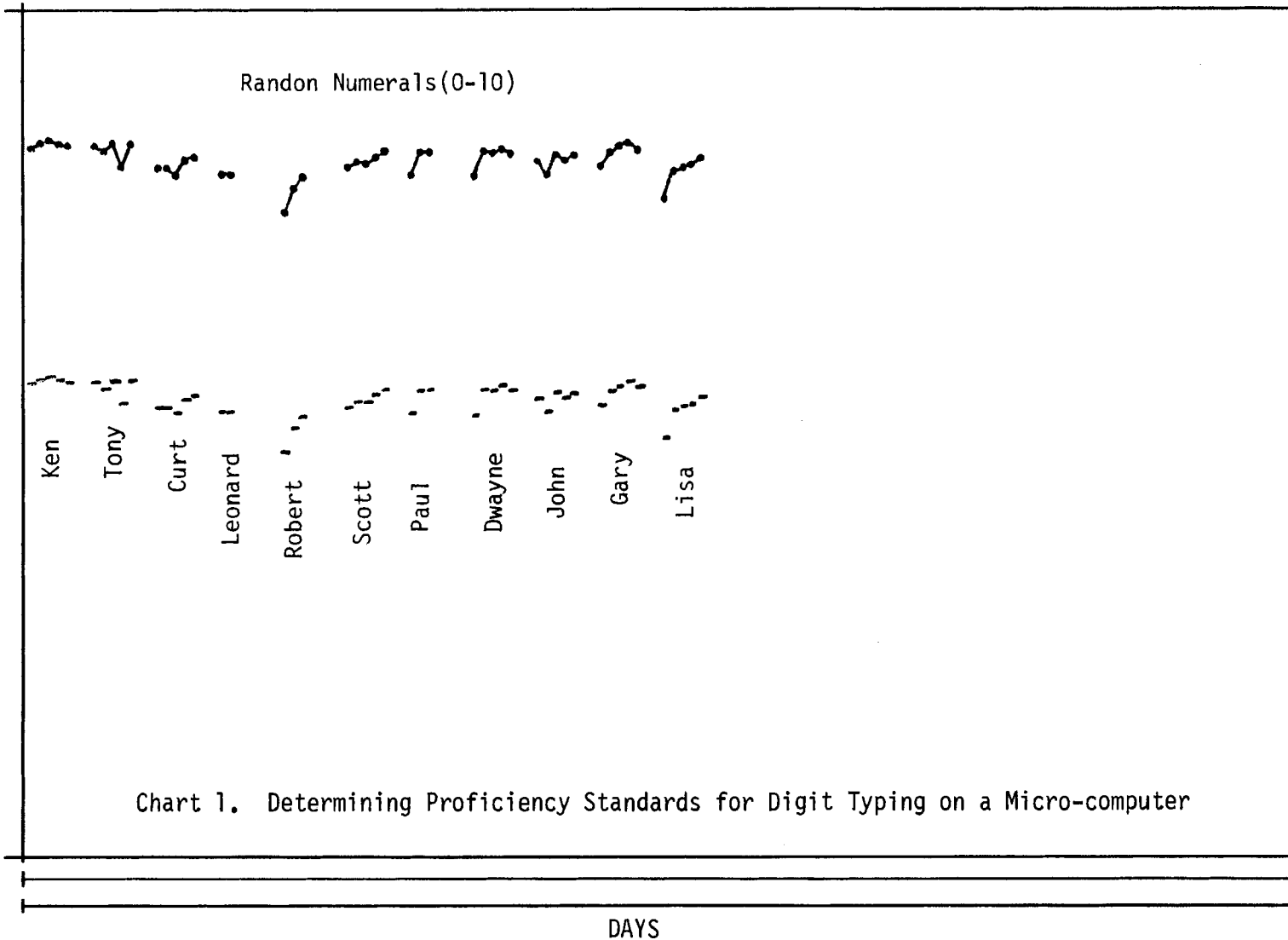
### NOTES FROM THE EDITOR

Patrick McGreevy

Welcome to Volume III, No. 3. I would like to remind everyone to please help us with subscriptions. Encourage your agency to subscribe or give the Journal as a gift to a friend.

I would like to welcome Lynette Lacy as our new associate editor. She will assist in coordinating the review of manuscripts and preparing each issue for publication. I would also like to welcome Susan Evans, Julie Vargas, William Evans, and John Eshleman to the editorial staff. I look forward to working with these people.

Data-sharing groups are beginning to spring up around the country. Recently, "a small group of Alachua and Marion County (Central Florida) teachers founded the Association of Precision Teachers (APT). This quiet but landmark happening took place on August 10, 1982 at the home of Marie LaFave. The primary purpose of the group is to improve teaching and student learning through Precision Teaching procedures. Monthly meetings will be held. Programs at the meetings will include sharing data and procedures on a specified topic, supporting new Precision Teachers and planning ways to advance the cause of Precision Teaching and data-based instruction



Campbell, Kenneth U. and McCarthy-Jensen, Donna. Digit typing for micro-computer math programs: toward a determination of proficiency standards. *Journal of Precision*, Volume III, Number 3, Fall, 1982.

Campbell/McCarthy-jensen

TRS-80

Spark 80

10 students

& 1 teacher

11-32

see-type digits

Campbell