

# Immediate Retelling of Current Events from Channel One by Students with Developmental Disabilities and Its Effect on Their Delayed Retelling

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A multiple baseline across participants design was used to analyze the effects of immediate retelling on the retention of information from Channel One News Broadcasts. Six high school students with developmental disabilities watched the twelve-minute program each school morning and either retold for one-minute into a tape recorder in the afternoon, or retold for one minute both immediately after the broadcast and again in the afternoon. In addition, the study investigated the effect of self-managed retelling compared with the results obtained with immediate retelling. During self-managed retells, students watched the broadcast as before, but instead of immediately retelling into a tape recorder, they retold to themselves for one-minute either on paper (think/write) or in their thoughts. Results indicate that students with developmental disabilities can increase their retention and can learn a method for self-managing their retention skills. They generally enjoyed learning about current events and using the immediate retelling method. Further, the immediate retelling method was correlated with an increased number of points retold in a delayed retelling for each of the 6 students and decreasing the number of incorrect points of information retold.

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Many teachers, parents, and school administrators believe that instruction should prepare students for success in the job market or higher education, primarily by improving the academic and vocational skill levels of students. Accordingly, teachers should not simply present information; they should help students acquire and understand effective repertoires. Students learn in many ways, but the instructional variable of active student response frequently correlates with students' improved academic accomplishment.

Beginning in the late 1970's, some educational researchers started focusing more on student response outcomes than on instructional processes as effectors to learning. These researchers demonstrated the relationship between active student response and academic achievement. The term active student response refers to an observable response made by the student to an instructional antecedent (Heward, 1994). The number of responses made within a certain period of time measures how much active student responding occurred. Heward (1994) described four reasons for incorporating active student response into an instructional lesson. First, active student re-

sponse provides the teacher with information regarding student participation during a lesson. The teacher considers the number of responses made by the student, rather than how long the student attends to a lesson. Second, active student response provides students with many opportunities for practicing the target skills, resulting in increased academic achievement. Third, teachers continuously evaluate their teaching and the students' learning during the lesson, instead of waiting until its completion. Teachers receive immediate feedback on student understanding by listening to or seeing the students' responses and adapt instruction as needed. Fourth, active student response correlates with increased on-task behavior. Heward (1994) differentiates between active student response from most definitions of on-task. Typically, a student on-task gives the appearance of paying attention and likely following the lesson, but may not make active responses to instructional stimuli. Conversely, active student response provides the students an opportunity to respond, which concurrently usually improves student on-task characteristics.

Active student responding takes many different response forms. For example, when teachers use response cards as a technique for increasing active student response, all students respond by holding up a sign or card in unison. Teachers use the student displays for determining which students need more instruction from those who do not. Response cards, as opposed to the common hand-raising method, not only increase the frequency of responding of students, but also may improve their retention of the content as shown by better quiz scores (Narayan, Heward, Gardner, Courson, & Omness, 1990).

Another example called choral responding evokes oral group responding to a teacher-presented question. Sterling (1991) showed that with choral responding, students responded with academic answers instead of simply listening to the teacher. Furthermore, the students recalled more health facts after being taught with choral responding than they did with on-task instruction.

One other example of active student response involves immediate retelling, as we used in the present study. Few researchers have investigated this technique (Brown, Dunne, & Cooper, in press), but some teachers report effectively using it in practice. Immediate retelling provides students with an active student response by arranging repetition of the material and engaging students in the lesson as soon after instruction as possible, orally or written. In their study using immediate retelling, Brown, Dunne, and Cooper (in press) reported that 9 out of 10 students improved their correct delayed retells (retention) and decreased their incorrect delayed retells by the use of immediate retells and repeated listening.

Active student response appears compatible with multiple modes of instructional presentation, even with an instructional mode such as Channel One. In 1989, Chris Whittle began offering a product to schools addressing common public school concerns of limited budgets (Winter, 1995, January). Whittle provides free use of a satellite dish, video recorders, and televisions to each school agreeing to classroom broadcasts of Channel One, a 12-minute daily news program. Channel One features current events and adolescent issues written for middle and high school students.

Little research exists concerning the educational value of Channel One, and the available reports give mixed results (Johnston & Brzezinski, 1994; Tiene, 1993). Empirically validating the overall effectiveness of Channel One, especially with developmentally disabled youth, captures the need for further research with Channel One.

We found no studies in the existing Channel One literature where students with developmental disabilities served as participants. These students may benefit from learning about current events because of their deficiencies in general knowledge and social adaptive behavior. The exposure to current issues, places, and people in the world around them may facilitate normalized and socially significant conversations with others. Further, presenting material in multiple formats may facilitate retention. Many students with developmental disabilities experience difficulty with retention.

Many instructional techniques correlate with improved retention of acquired knowledge and skills, such as active student responding (e.g., Test, Cooke, Heward & Heron, 1983) and fluency building (i.e., speed plus accuracy and quality) (Binder, 1993). Immediate retelling as an instructional technique encourages active student responding and fluency building. With immediate retelling, students retell as much information as they can during a short counting period (e.g., 30 seconds, 60 seconds) immediately after reading a text or hearing a presentation.

In an effort to extend the present body of literature on academic retention, self-management, and the limited research on active student responding with students with developmental disabilities (e.g., Barbetta, Heron, & Heward, 1993; Cuvo, Ashley, Marso, Bingju, & Fry, 1995; Dugan, Kamps, Leonard, Watkins, Rheinberger, & Stackhaus, 1995), we examined the effects of immediate retelling on the retention of information by students with developmental disabilities. Specifically, we compared our students' delayed number of correct and incorrect current events informational points (i.e., retention) retold per minute from Channel One broadcasts, during conditions with and without immediate retellings. Finally, we studied the effect of students' self-managed, immediate retells on the maintenance of instructional effects obtained from audio-taping their immediate retelling for the teacher.

We considered the following questions: (a) What effect will immediate retelling of current events information have on students' retention of correct and incorrect informational points retold during a delayed retelling? (b) What effects will self-managed immediate retelling have on informational points retold during delayed retelling? (d) Will student opinions concerning current events instruction and using immediate retelling change at the end of our research?

## METHOD

### *Participants*

Six high school students from a self-contained classroom for students with developmental disabilities served as participants. The 6 students, 2 female and 4 male students, ranged in age from

15 to 19 years, and were enrolled in grades 10 to 12. They may or may not have been mainstreamed into one of the following: study hall, lunch, physical education, choir, Drawing I, General Science, Integrated Math, Civics, Construction, Home Care, Typing II, and a resource room Algebra class for students with learning disabilities.

These students were selected because they were in the first author's (hereafter referred to as teacher) first period English class when they watched the Channel One broadcast every morning. All but one student regularly attended a seventh period Life Skills class, during which the students taped their delayed retellings. Table 1 presents specific individual participant information.

Table 1

### *Participant Information*

Participant	Gender	Grade	Age Yrs./Mos.	SES	IQ <sup>a</sup>	Adaptive
						Behavior Composite <sup>b</sup>
1	F	11	18-8	Low	71	68 +7
2	F	12	19-9	Middle	76	70 +7
3	M	12	18-9	Low	73	53 +7
4	M	10	17-6	Middle	72	66 +7
5	M	10	16-10	Middle	71	65 +8
6	M	10	17-3	Middle	72	47 +8

### Note.

<sup>a</sup>Full Scale Intelligence Quotient. WAIS-R used for the scores of participants 1 - 3 and WISC-III used for participants 4 - 6.

<sup>b</sup>Composite score from the Vineland Adaptive Behavior Scale. The composite combines communication, daily living, and socialization.

### *Setting, Materials, and Media*

The setting was a first-floor classroom for students with developmental disabilities measuring approximately 9.3 m by 6.2 m. There were nine desks arranged in three rows in the middle of the room. These desks faced the east wall that contained a large chalkboard with two smaller bulletin boards on each side. A television was affixed to the wall to the students' left, 2 m from the floor. Audio-tape recorders were arranged in stations around the periphery of the room. Two audio-tape recorders were located on the waist high counter which ran the length of the north wall. A third audio-tape recorder was placed on the kitchenette counter along the west wall. Also on the west wall was the door to the hallway. The fourth audio-tape recorder was located on a table along the south wall. The final two audio-tape recorders were placed along the east wall, one at a computer table and one on a desk. The teacher's desk was located near the desk holding the sixth audio-tape recorder. Two small windows faced each other on the east end of the north and south walls. The room also contained a bathroom in the southwest corner of the room.

A 16-inch Magnavox television was permanently mounted to the wall, and angled downwards for easy viewing. Each morning, the media center specialist broadcasted Channel One to the classroom. Channel One is a 12-minute news program designed for students in grades 6 through 12 and produced by Channel One Communications. Early each morning, the program was transmitted to the satellite at the high school and recorded on one of two video cassette recorders in the media center. The program was then retransmitted to each of the networked televisions in the classrooms around the school. The television was automatically turned on, and the program began. Volume was controlled with the buttons on the television, and the power button on the television allowed the broadcast to be turned off at any time. At the end of the broadcast, the television automatically turned off.

Six audio-tape recorders were used during the study by the students to tape their one-minute retellings and by the teacher to listen to the retellings while counting retells. Three of the audio-tape recorders were Bell and Howell recorders, model number 3191A. The other three were EIKI audio-tape recorders with model number

5090A. Each student had a sixty-minute Maxell brand Communicator Series audio-cassette tape with name and student number clearly displayed on the tape's label. A second set of six identical tapes was accessible in case of the teacher's or observer's unavailability to score the first set in time for the next day. The teacher used a stopwatch to accurately signal the start and end of the one-minute retelling time. The teacher also used data collection sheets to record daily behavior counts and Standard Celeration Charts (Pennypacker, Koenig, & Lindsley, 1972) to chart student progress.

### *Definition and Measurement of Retelling*

The number of correct and incorrect informational points of current events retold by students in one-minute as a delayed retell, five hours after a 12-minute Channel One broadcast were counted. Correct informational points consisted of accurate details from that morning's broadcast. A point was counted as correct when the student used the correct pronunciation of it, or when the pronunciation was close enough in approximation that the teacher understood the informational point. Understood pronunciations of the following parts of speech counted as correct informational points: (a) **proper nouns**--people's first and last names; titles; names of cities, countries, continents; (b) **names of buildings, rivers, lakes, oceans; names of organizations or companies; titles of books, newspapers, magazines; days of the week, months, holidays** (e.g., President, Bill, Clinton, Paris, France, White House, Pacific Ocean, United Nations, *War and Peace*, Labor Day); (c) **common nouns**--objects, general places, concepts (e.g., book, grocery store, wealth); (d) **adjectives and adverbs**--modifiers used in the broadcast, modifiers not used in the broadcast but synonymous with those used, modifiers not stated but student generated to describe video shown in the broadcast (e.g., blue, five, large, huge, outside, slowly); (e) **verbs**--actions performed by someone or something, linking verbs with the correct complement (e.g., repaired, appointed, may become president, was healthy); and, (f) **prepositions**--only used with the correct object as part of a prepositional phrase (e.g., in the water, off the committee).

Informational points were counted as incorrect as follows: (a) words said that the teacher could not understand (e.g., "He lives in Calabash, Ohio." Calabash would count as 1 incorrect - should be Columbus); (b) inaccurate retelling of informational points (e.g., "There was an earthquake in Peru." Peru would count as 1 incorrect - should be Columbia); (c) information from commercials (e.g., "Charles Barkley dunked the ball on the shoe commercial." One sentence about a commercial would count as 1 incorrect); (d) information from old broadcasts (e.g., Informational points not reported in that day's broadcast would count as 1 incorrect for each sentence corresponding to an old broadcast or 1 incorrect for each incorrect informational point included in a sentence with corrects); (e) information from other news sources (e.g., Informational points from newspaper, magazine, and network news not on the Channel One broadcast would count as 1 incorrect for each sentence completely from other news sources or 1 incorrect for each single informational point from another source included in a sentence with corrects); (f) information about the newscasters or about non-news conversations between news stories (e.g., "The newscaster wore a t-shirt that a school in Los Angeles sent." One sentence about a newscaster or non-news conversation would count as 1 incorrect); and, (g) opinion phrases about the broadcast (e.g., "I think", "I did not like").

Not all information given by the students was counted as either correct or incorrect. The following words used were not counted: **conjunctions** (e.g., and, or), **pronouns** (e.g., he, she, it), **interjections** (e.g., yea, oh), **articles** (e.g., a, an, the), **repetitions** of previously counted corrects (e.g., the name of a person used more than once when retelling a news story would count as correct the first time and not counted on subsequent times), and **nouns, verbs, or modifiers** with no essential information (e.g., "They went to this one place.").

During the daily broadcast of Channel One, the teacher wrote important facts and key phrases from the broadcast on a teacher-developed data collection sheet. Six copies were made of this data collection sheet, one for each student's retelling. The teacher then listened to the audio-taped one-minute retelling of each student and recorded correct and incorrect responses by writing each counted informational unit at the bottom

portion of the data collection sheet. Each informational point to be counted, as defined earlier, was written under the corresponding column for correct or incorrect informational points.

### *Interobserver Agreement of Measurement*

Because "observer drift" could relate to potential confounds in this study, interobserver agreement measures were taken. An independent observer trained to assess the believability of the teacher's measurement of the dependent variable assisted. The teacher explained the purpose of the study, the definition of the correct and incorrect informational points, the procedures for listening to and scoring the audio-taped retellings, and the use of the data collection sheets to the independent observer. The teacher and independent observer practiced scoring using the one-minute retellings the students recorded as tool skill practice. The teacher and observer compared correct and incorrect responses after independently scoring an audio-tape. If 100% agreement was not reached on the first comparison, the observer and teacher again listened to that audio-tape until 100% agreement was reached. Practice continued on additional audio-tapes until the teacher and observer reached 90% agreement or higher on three consecutive audio-tapes.

During the study, the observer randomly chose three of the six students' audio-tapes to score in three day intervals. The teacher made copies of the unmarked data collection sheets for the observer and to assure independence of observation, the observer listened to the audio-tapes at a different time and in a different setting than the teacher. For each retelling scored by the observer, the observer's data were compared to the teacher's and interobserver agreement was calculated. The percentage of agreement was computed by dividing agreed upon informational points by the agreements plus the disagreements, and multiplying by 100. Interobserver agreement is reported as an overall middle agreement, the high and low points in the spread of agreement overall, and a mean agreement for each student.

The teacher and observer's overall middle agreement was 88 percent, with a spread from 71 to 100 percent agreement. The mean interobserver agreement for individual students spread from a

low of 81 percent for Participant 3 to a high of 94 percent for Participant 5.

### *Experimental Design and Procedures*

We used four conditions--Channel One broadcast, Channel One broadcast with immediate retelling, Channel One broadcast with cues and immediate retelling, and Channel One broadcast with a self-managed immediate retelling--in a multiple baseline experimental design (Cooper, Heron, & Heward, 1987) to analyze the effects of the immediate retelling on the retention of current events informational points. We manipulated the condition across students where there were three baselines of two students each. All students began baseline condition (delayed retelling without immediate retelling) at the same time. The first two students moved to the second condition after a minimum of five data points, or whenever they reached steady state responding, whichever occurred first. When a treatment effect began with the first two students, the treatment began for the second baseline of students. Procedures were the same for the third baseline of two students.

A sequential-withdrawal design (Rusch & Kazdin, 1981) programmed for maintenance. The sequential-withdrawal design consists of sequentially withdrawing different components of the treatment in successive experimental phases following a noticed treatment effect. For this study, when a treatment effect was shown, treatment components were withdrawn in this order: audio-taped immediate retelling, instruction for self-managed retelling, and self-management cue cards. This sequential-withdrawal design programmed for maintenance by increasing the probability of maintaining the treatment effect shown by the immediate retelling, even after all cues and contingencies were removed.

General procedures. Before the study, the teacher and students discussed that they watch news broadcasts to (a) learn about current events and the world around them and, (b) that knowing current events will give them access to conversations in school, home, leisure, and work settings.

Throughout the study, one-minute retellings of remembered informational points of current events retold by the students were taped on

audio-cassette tapes for later assessment by the teacher. Each morning at 7:30 a.m., at the beginning of the school's first period class, the teacher instructed the students to complete their preparations for the day and sit at their desks. As soon as the television was turned on for the beginning of the Channel One broadcast, the teacher said, "Please, quiet down and listen carefully to today's Channel One. Later you will each be asked to recall all that you remember from today's program." During the broadcast, the teacher prompted the students as needed to refrain from speaking during the news sections of the broadcast by saying such things as, "Please, no talking", "Quiet down, so others can hear", or "Please, save your comments for your retelling later." Students could quietly talk during the commercials. The teacher answered, but did not solicit, students' questions about the preceding program after the broadcast. The teacher used questions like who, where, when, what, and why to help lead students to an answer to their questions. Throughout the watching of Channel One and the taping of their retells, the teacher gave intermittent praise comments to the students such as, "Nice listening", "Thank you for paying such close attention", or "Good participation on the retells."

Developing tool skills. The teacher had students practice the steps they would later need to perform before the study began by assigning an audio-tape recorder station to each of the students and instructing them to always tape their retellings at that station. Students practiced the following procedures to assure their understanding of how to record their retellings correctly:

1. Students sat at their respective stations and followed directions of the teacher.
2. The teacher had students practice putting the audio-cassette tape in the recorder and taking it out.
3. Students practiced finding and pressing record and play buttons simultaneously and the stop-eject button.
4. Students were instructed to leave the volume indicator at the pre-set level.

On two consecutive days, students watched a 12-minute pre-taped portion of network news.

Commercials during this broadcast were also watched to match the Channel One format. Procedures for watching the broadcast followed those mentioned previously. Students then went to their stations and practiced a one-minute retell of information remembered from the broadcasts. Feedback on content, speed, number of informational points retold, correct and incorrect responses was given to each student.

Channel One broadcast. At 12:45 p.m. each day, five hours after Channel One, students were asked to record a one-minute retelling of that morning's broadcast. (Occasionally, due to scheduling difficulties, one of the students recorded delayed retell at 10:45 a.m. three hours after Channel One.) The teacher instructed the students to go to their assigned audio-tape station and wait for further instructions. When each student was ready, the teacher said, "You are going to have one minute to tell as many informational points as you can remember from this morning's Channel One broadcast. When I say 'record', press the record and play buttons. When I say 'date', state today's date and that it is seventh period. When I say 'begin', you may begin to retell." The teacher used a stopwatch to time the one-minute period starting with 'begin' and said, "Time. Please press stop on your audio-tape players." at the end of the one-minute.

Channel One broadcast with a one-minute immediate retelling. During the intervention condition of the study, students retold for one minute immediately following the Channel One broadcast at approximately 7:47 a.m. Procedures were the same as for the delayed retelling explained above, except that students were instructed to state that it was first period, not seventh period. Students also did a one-minute retelling, as described above, during seventh period.

Channel One broadcast with cues and a one-minute immediate retelling. During this condition of the study, students were given a cue for each story from that day's broadcast as a reminder of how many different stories there were and what they were about. The cues were either one or two words and were intended as a reminder to the students to think about telling as much as they could from the entire broadcast. The teacher either showed the cues to the students written on a hand-held index card, or wrote the cues on the chalkboard, depending upon whether everyone

was in this condition or only some of the students. Procedures were the same as for the delayed retelling with an immediate retelling condition with the addition of the teacher, either showing or reading from the chalkboard the cues for that day.

#### Channel One broadcast with a self-managed immediate retelling

##### Teacher instruction for self-management.

At the beginning of the self-management condition of the study, the teacher explained that, as preparation for the afternoon delayed retell, students would learn a new way of immediate retelling. Students now knew how to retell, and this new method was a way of having students be responsible for using the method best to keep ideas in their memory. The teacher demonstrated and explained two methods for students to use when retelling to themselves: retell to oneself or retell on paper. With both methods, the students could choose to use or not to use a self-management card that served as an outline for reviewing a news story using the five W's of questioning (i.e., Who, What, When, Where, Why).

The teacher displayed a sample self-management card on the overhead projector and explained to the students what type of information would fit under each of the categories. Next, the teacher demonstrated the card's use with a newspaper article. The teacher read aloud the article to students and then, answering each question on the card, generated possible informational points from the story. Students were also asked to add any additional informational points they remembered from the story and what category under which they would belong.

The teacher then introduced the methods of retell in one's head and retell on paper. The teacher explained how each method followed the steps they just did together with the card, but that it would not be done out loud or with another person. Neither method was favored over the other by the teacher. The teacher also explained that students would still be timed for one minute when doing this method of retelling.

Self-management. During the self-management condition of the study, procedures for viewing Channel One were the same as de

scribed in the general procedures section. Immediately following the broadcast, students were asked to get their self-management cards and a piece of paper if they chose to do a retell on paper. Once all the students were ready, the teacher said, "You are going to have one minute to retell to yourself as fast as you can all that you can remember from this morning's Channel One. When I say begin, start reviewing in your mind or writing on paper." The teacher again used a stopwatch to time the one-minute period and said, "Time. Please stop your retelling" at the end of the one-minute. The teacher received no record of the immediate retelling. Procedures for the delayed retelling were the same as described earlier.

Procedural Integrity. To assess the likelihood that the procedures were applied as planned and described (Billinsley, White, & Munson, 1980), four independent observers on alternate days used a checklist of steps in the procedures to provide a measure of procedural integrity. The teacher made the checklist which included each specific step as explained in the procedures section. An observer either listened to an audio-taped recording of the entire session (from the beginning of the Channel One broadcast to the end of the one-minute retellings) or observed in the classroom during the actual intervention at least once every three days. We calculated procedural integrity by dividing the number of steps checked as completed by the total number of steps on the checklist. If discrepancies arose between the checklist and the observed procedures, the observer discussed them with the teacher, and they verbally practiced a sample intervention with the observer acting as a participant. The observers found that the teacher followed the specified procedures 99 percent of the time during the 16 sessions checked. Total agreement was achieved for all but one session, with 92 percent agreement.

## RESULTS AND DISCUSSION

Standard Celeration Charts display correct and incorrect informational points of current events retold in one minute as a delayed retelling for students 1 through 6. A focus line was used to draw the celeration courses shown on the Charts. All students consistently retained and retold more

current events from the Channel One Broadcast with Cues and Immediate Retelling than during other conditions. Moreover, the frequency of correct delayed retells during the Cues and Immediate Retelling had less bounce (variability) from session-to-session. Cues and Immediate Retelling were functionally related to the improvement of delayed recall. Objectively, these changes in delayed recall were large enough to warrant attention. Subjectively, the students' response to the immediate retelling indicated they knew the immediate retelling helped them to do their delayed retelling. Often, they mentioned they remembered what Channel One was about because they could remember what they said that morning. These results support Heward's (1994) analysis that active student responding enhances learning because of the increased practice students receive. Consistency with other related research on immediate retelling as an independent variable (Brown, Dunne, & Cooper, in press) also suggests the Cues and Immediate Retelling package is functionally related to increases in correct delayed retells.

Results are unclear, however, concerning how the addition of the one or two word reminders (i.e., cues) to immediate retelling affected the delayed recalls. Researchers report (e.g., Bransford, Franks, Owings, Vye, & McGraw, 1982; Lukose, 1987) that students with developmental disabilities seem less able than regular students to provide their own organization to incoming information and therefore need help in arranging information for retention. The four students in this study who received the immediate retelling condition without the cues made little or no improvement in delayed recall. This lack of student improvement evoked use of additional cues. Perhaps the addition of cues provided enough of a response prompt to occasion consistent responding. Cues in this case were likened to headings in reading text that function to make the organization clear to the student as an aid in retention (Holley, Dansereau, Evans, Collins, Brooks, & Larson, 1981). Further, the cues might have influenced the improvement in recall because these cues changed the immediate retelling from a free recall to one of recognition plus recall. Students needed to only recognize, not come up with the cues, and then the cues perhaps triggered the recall of other points of information. This interpretation appears consistent with Skin



ner's definition of the intraverbal operant (Skinner, 1957).

Channel One provided the context and content for the retelling. Results further the research already done on increasing students' knowledge of current events (Johnston & Brzezinski, 1994; Tiene, 1993). Teachers and researchers report mixed opinions as to whether Channel One by itself significantly improves current event knowledge. This study suggests that some classroom practice procedures can improve any effects that passive watching may have.

Despite the positive results of the immediate retelling method, it is labor intensive for the teacher. Classroom teachers can, however, reduce the intensive labor of our method. For example, teachers could arrange partner sharing following a presentation where the teacher would not have to listen to all student retells; or teachers could use reciprocal teaching with immediate retelling. Palinscar and Brown (1984) correlated reciprocal teaching with increased comprehension and retention.

The frequency of incorrect delayed information points retold by students decelerated from the Channel One Broadcast to Channel One Broadcast with a Self-Managed Immediate Retelling, the final condition. Although students continued to make some incorrect responses, they more often made no, or only 1 incorrect response per minute of retelling. Again, these improvements can be attributed to incorrect delayed recall to the Cues with Immediate Retelling method. Students are likely to make some incorrect delayed recalls, and an instructional goal of no incorrects would probably be difficult to consistently attain. This conclusion is consistent with other findings that report students with developmental disabilities make more errors when remembering and taking longer to recall than students without special needs (Caruso & Detterman, 1983).

In their research on Channel One, Johnston and Brzezinski (1994) and Tiene (1993) found that students who viewed Channel One without discussion, quizzes, or other methods to increase retention, scored only a little better on test scores compared those who did not watch the broadcast. Further, the students who watched Channel One still incorrectly answered 50% of the test items. Rapid pace of presentation, the lack of student

knowledge about the complete background of the stories, and the difficulty level of some of the content in this story likely contributed to the occurrences of incorrect delayed responses. Students usually made fewer correct and more incorrect responses when the Channel One broadcast had especially difficult topics such as congressional term limits or the balanced budget amendment. The difficulty level of some broadcasts probably accounted for many occurrences of incorrect recalls.

All students showed favorable delayed recall of information during the Channel One broadcast with the Self-Managed Immediate Retelling condition. Students demonstrated that they could apply a recall strategy on their own that could be used when watching news at home. This result is an important outcome for students because knowledge of current events may increase their normalization in society and improve their adaptive behavior. Whether the students transferred the self-managed retell is unknown because this generality issue was not addressed. It is possible, however, that students will use the method. O'Sullivan and Pressley (1984) found that their participants learned a mnemonic strategy and transferred its use to other situations. Clearly, the assessment of generality of the self-managed immediate retelling represents an important area for future research on recall, beyond this assessment of maintenance which is also a type of generality.

Several limitations are related to subjects, independent variables, and the experimental design. First, many student absences and school scheduling conflicts often broke up and lessened the number of sessions available for data collection. Since this study was completed at the end of the school year, students had no opportunity to view Channel One during spring break, field days, or class trips. Participation in field days and class trips always increase during the last few weeks of the academic year in this school.

Second, Channel One was developed for use with middle and high school students. The difficulty level of some content above was the understanding of most students in this study. Also, the amount of information that students recalled from difficult broadcasts probably depended on the students' understanding of those topics. Students' previous knowledge of the content

presented or their knowledge of the theoretical as opposed to concrete nature of the topics was not assessed.

Third, few studies have used immediate retelling as an independent variable. Because of this lack of research and evidence to support its use, the generality of using retelling as an independent variable is still questionable.

Fourth, although the sequential-withdrawal design (Rusch & Kazdin, 1981) was used to program for maintenance, other generality concerns were not assessed. For instance: Did the use of self-management occur in other settings (e.g., homes) or with other content (e.g., network news broadcasts)?

Finally, delayed retells during the end of the seventh school period, the class period that provided the most distraction to remembering were assessed. Students during this period and the preceding period were often involved in enjoyable activities such as cooking, shopping, and volunteering that broke up the academic context of the school day and perhaps made it difficult to refocus on academic performances. This limitation, however, further argues for the efficacy of immediate retelling.

Students completed a questionnaire about Channel One before and after this research to evoke their opinions about watching and learning from Channel One. They did not report a large change of opinions, but opinions that changed from the before to the after assessment changed in a positive direction. Absence of large change in opinions was probably due to the high rankings the students gave on the questionnaire before the study. Certain questions did show, however, a larger change in opinion than others. For instance, after the study, more students reported talking about what they saw on Channel One with both people at home and at school, finding the commercials less interesting, and becoming increasingly interested in the news content.

After the study, when students were asked what they did not like during the study, they answered that (a) they could not remember enough information for the 1-minute assessment, (b) they found retelling difficult, and (c) they could not talk to their neighbor during Channel One. Four students reported that what they did for this study

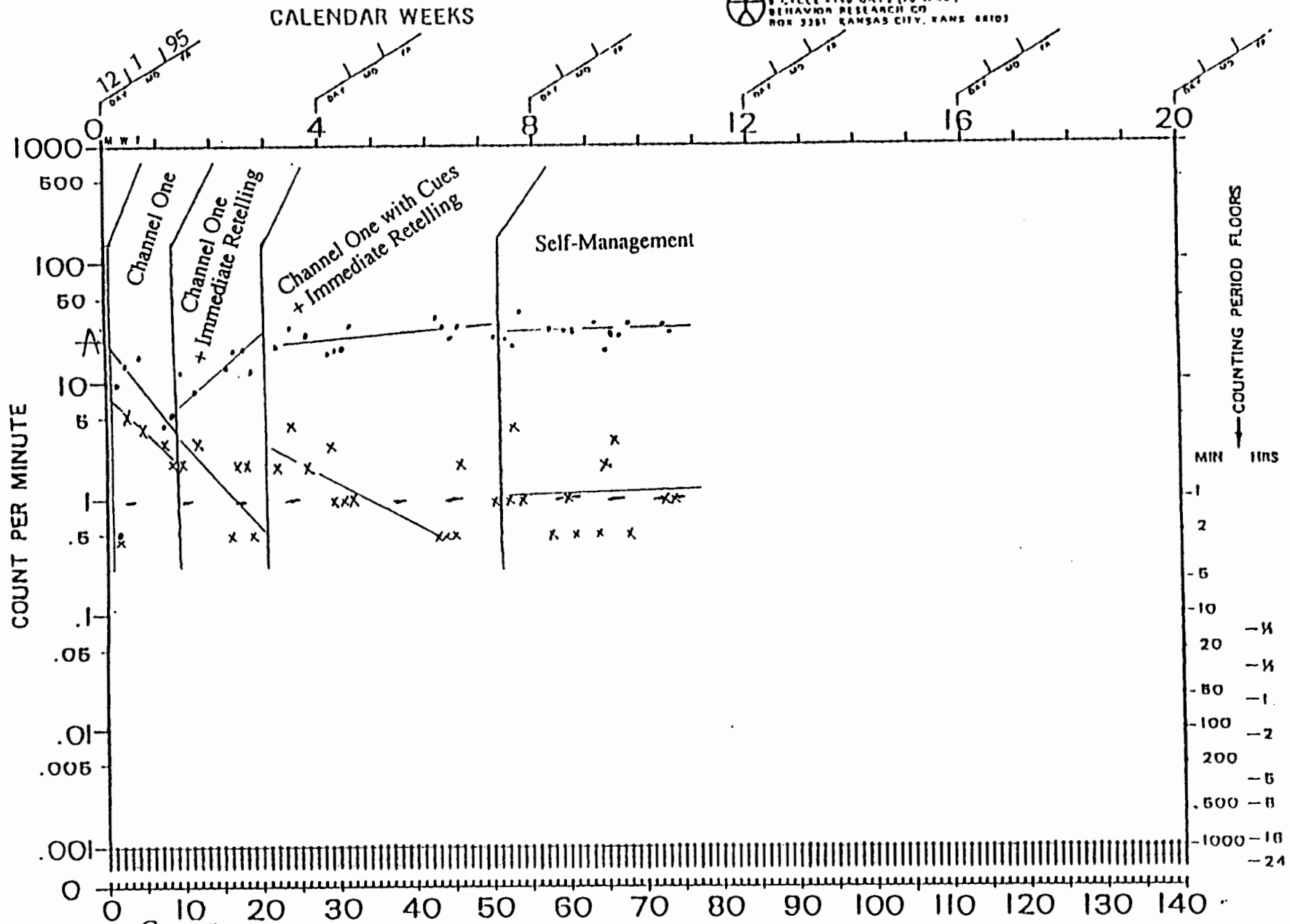
would help them in the future. When asked why, the students said because they knew how to listen better or that they had practice remembering. The other 2 students could not think of a reason for how it could or could not help them. All 6 students reported that they believed they remember more from Channel One now than they did before the study.

The method of immediate retelling as an independent variable is a novel one. The present study suggests that retelling as an independent variable did aid in increasing retention. Behavior analysts need to study the effects of retelling on retention with other populations, other school curricula, and other presentation formats (e.g., reading). Further research is needed to determine the effectiveness of immediate retelling without the addition of cues.

Some questions still remain after the completion of this study that could focus the replications of this study or variations of it. What are the long-term benefits of using immediate retelling as a practice activity with Channel One? Will the students transfer the self-managed retell to home situations? Will the students transfer the self-managed retell to other learning situations?



28



CALENDAR WEEKS

12 17 195

4

8

12

16

20

1000

500

100

50

10

5

1

.5

.1

.05

.01

.005

.001

0

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

Cooper  
 Malanga  
 Seevers  
 Canal Winchester HS

Ritsema  
 Ritsema  
 MANAGER

SUCCESSIVE CALENDAR DAYS  
 Ritsema  
 Ritsema

Participant 1  
 17-6  
 Ritsema/Cooper

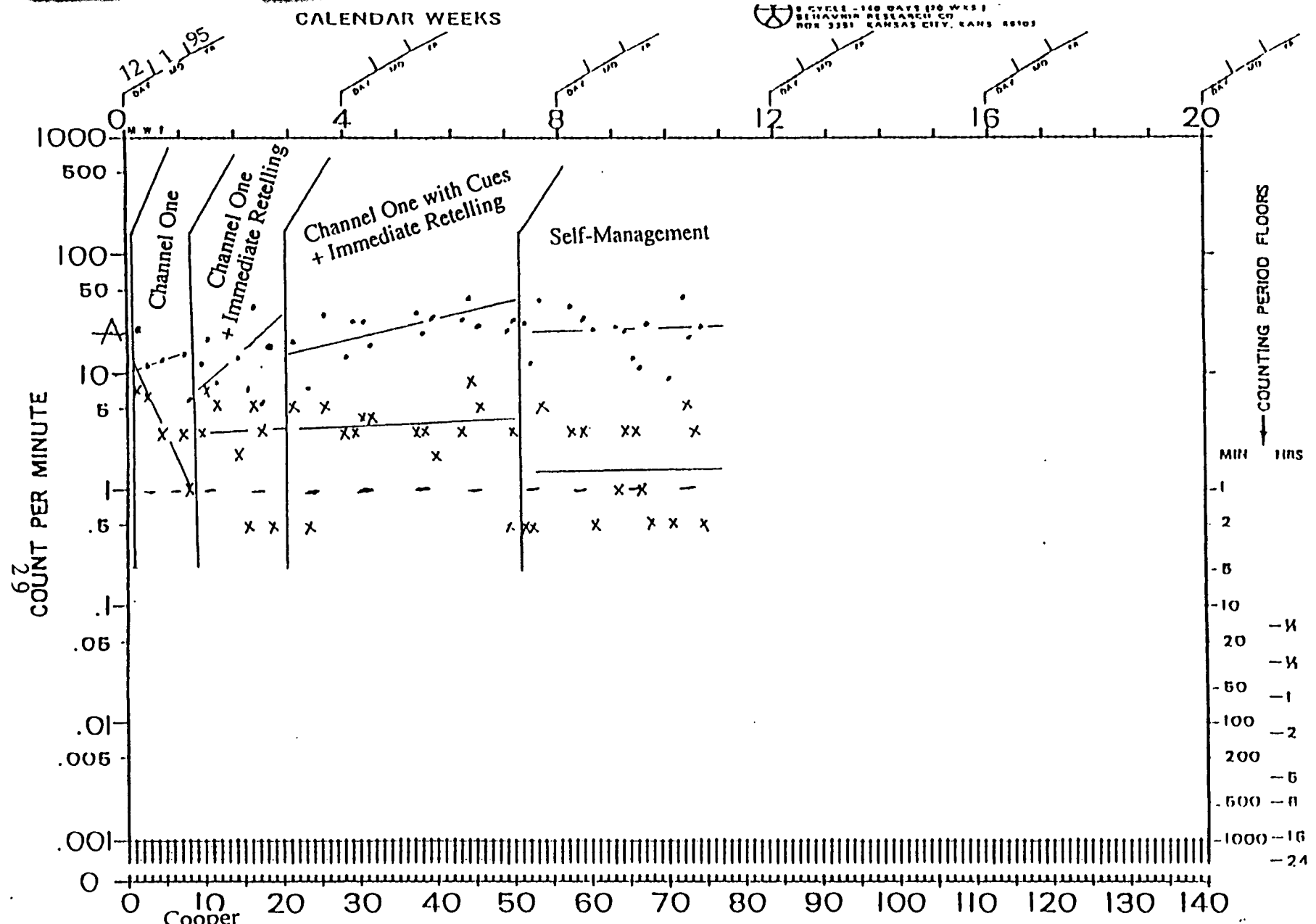
DH  
 LABEL

Think-Say  
 Delayed Retelling  
 COUNTED

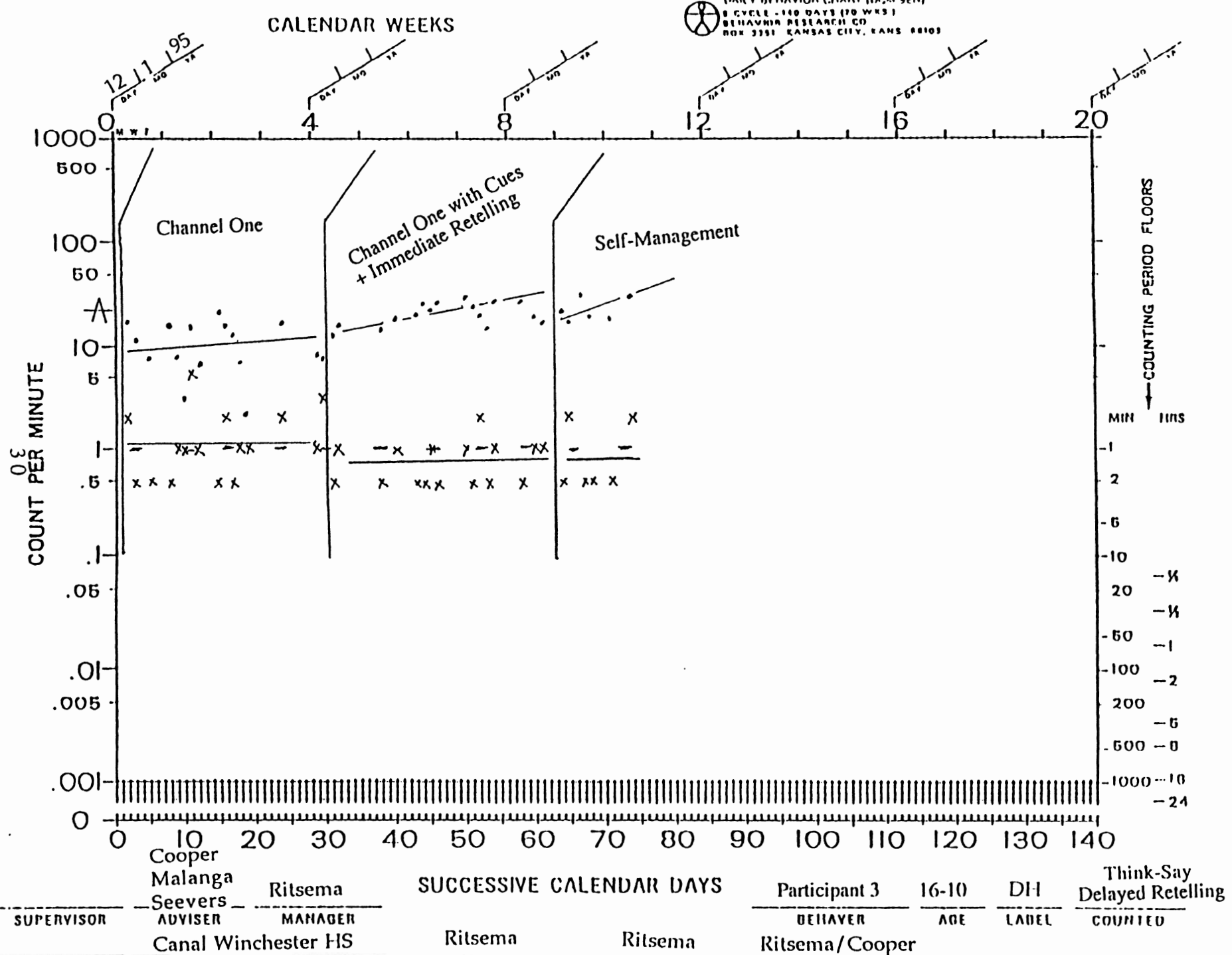
COUNTING PERIOD FLOORS  
 MIN HRS  
 1  
 2  
 5  
 10  
 20  
 50  
 100  
 200  
 500  
 1000  
 24

CALENDAR WEEKS





SUPERVISOR		MANAGER		TIMER		COUNTER		CHARTER	
Cooper	Malanga	Ritsema	SeEVERS	Ritsema	Ritsema	Participant 2	17-3	DH	Think-Say Delayed Retelling
DEPOSITOR	AGENCY					BEHAVIOR	AGE	LABEL	COUNTED
	Canal Winchester HS					Ritsema/Cooper			



DEPOSITOR

AGENCY

TIMER

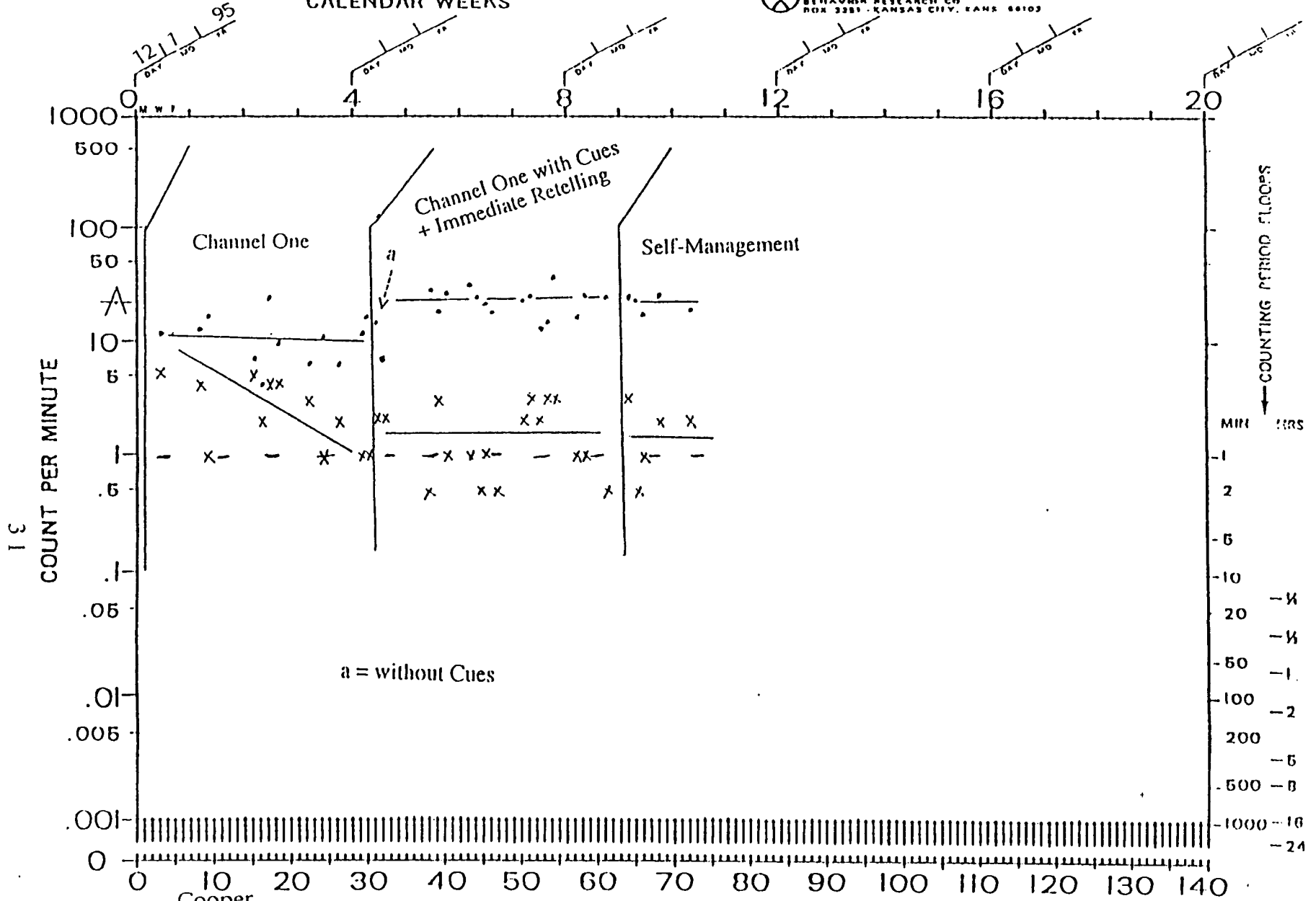
COUNTER

CHARTER

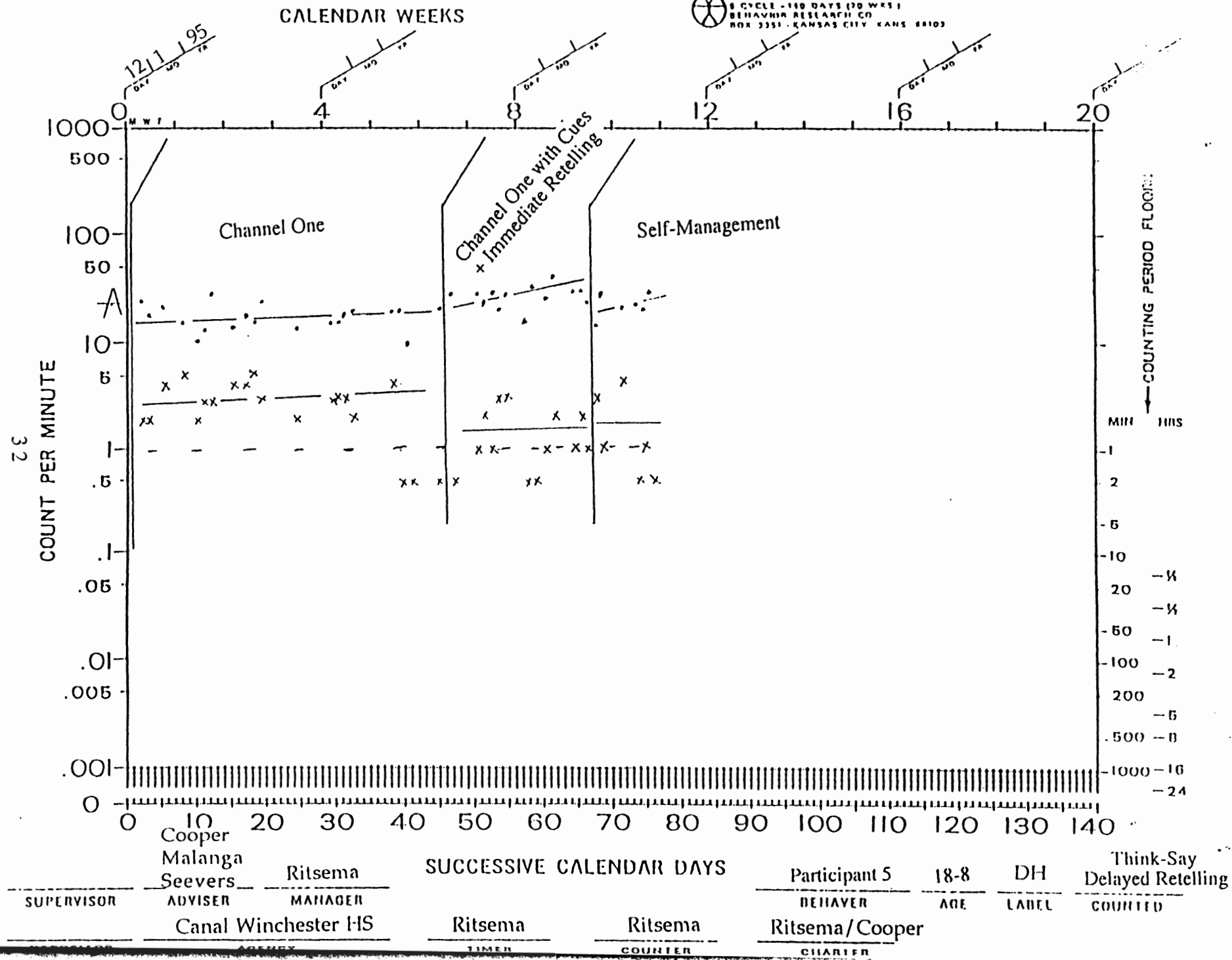
Canal Winchester IIS

CALENDAR WEEKS

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SUPERVISOR		Cooper	Ritsema		Participant 4		18-9	DH	Think-Say
ADVISER		Malanga	Ritsema		Ritsema/Cooper		AGE	LABEL	Delayed Retelling
MANAGER		Seevers	Ritsema		Ritsema				COUNTED
DEPOSITOR		Canal Winchester IIS	Ritsema		Ritsema				
AGENCY			TIMER		COUNTER		CHARTER		



CALENDAR WEEKS

COUNT PER MINUTE

COUNTING PERIOD FLOOR

SUCCESSIVE CALENDAR DAYS

CALENDAR WEEKS

32

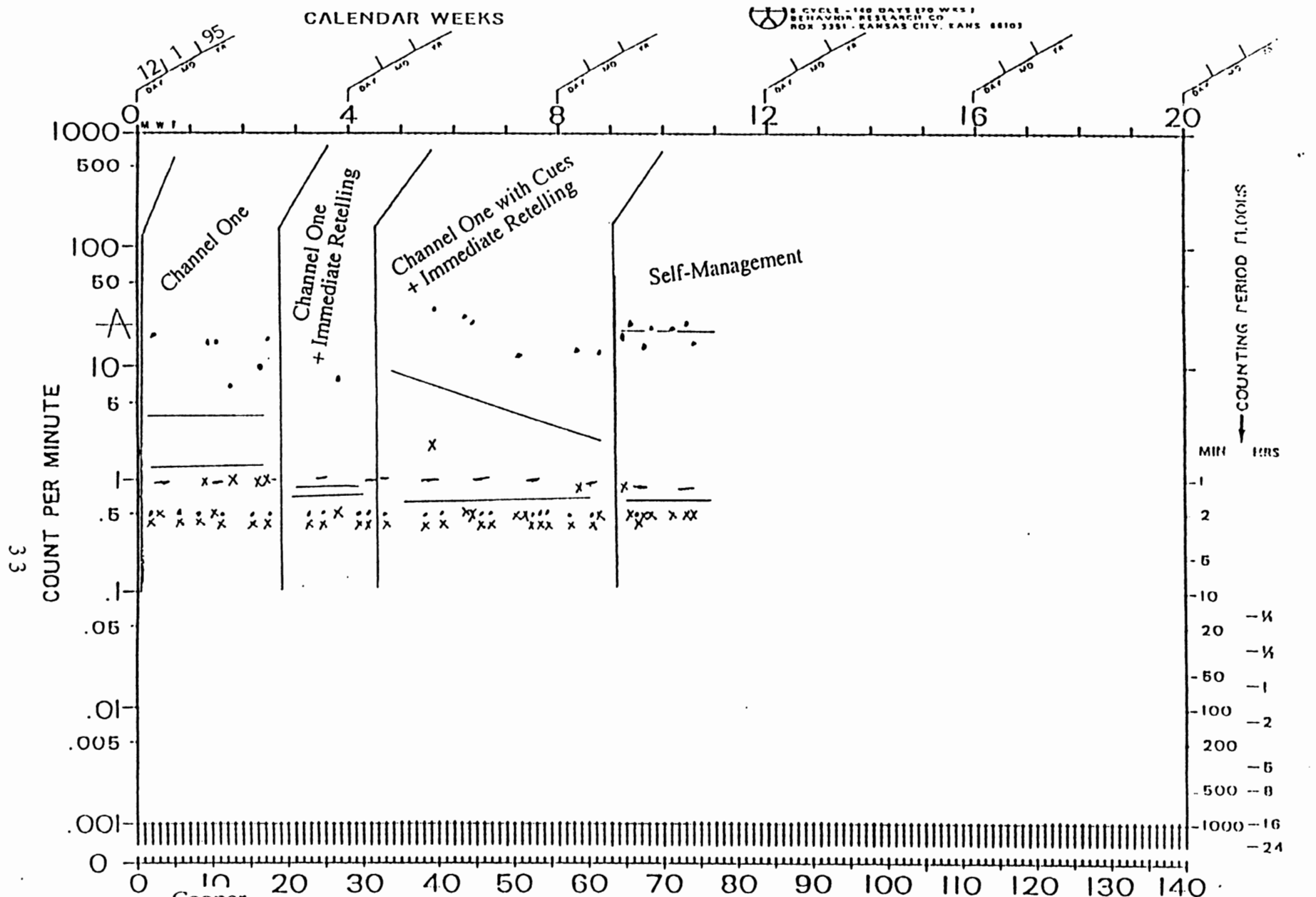
DEPOSITOR

AGENCY

TIMER

COUNTER

CHARTER



	Cooper Malanga Seevers	Ritsema			Participant 6	19-9	DH	Think-Say Delayed Retelling
SUPERVISOR	ADVISER	MANAGER			BEHAVIOR	AGE	LABEL	COUNTED
DEPOSITOR	Canal Winchester HS	Ritsema	Ritsema		Ritsema/Cooper			
	AGENCY	TIMER	COUNTER		CHARTER			



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