

Figure 5
Rate of Turntaking Exchanges:
Staff and Handicapped Child
Urban Program 03

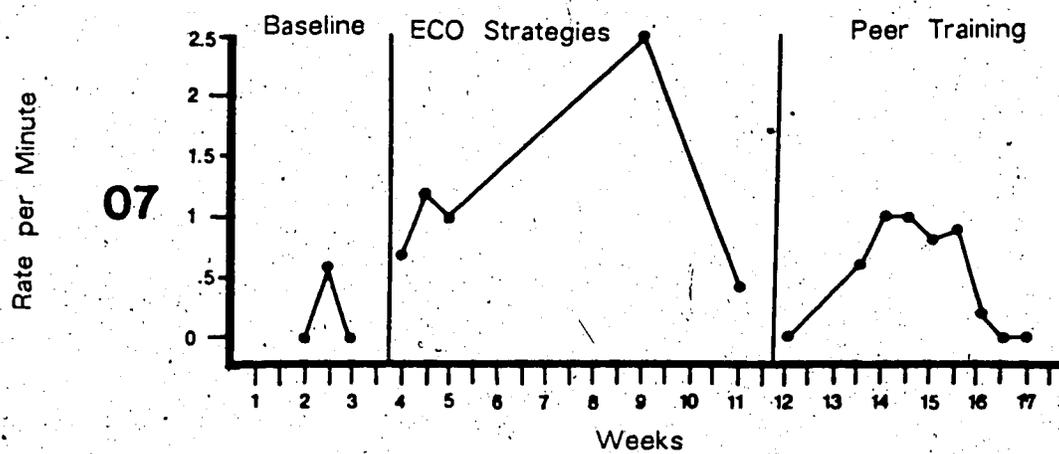


Figure 6
 Rate of Turntaking Exchanges:
 Staff and Handicapped Child
 Rural Program 04

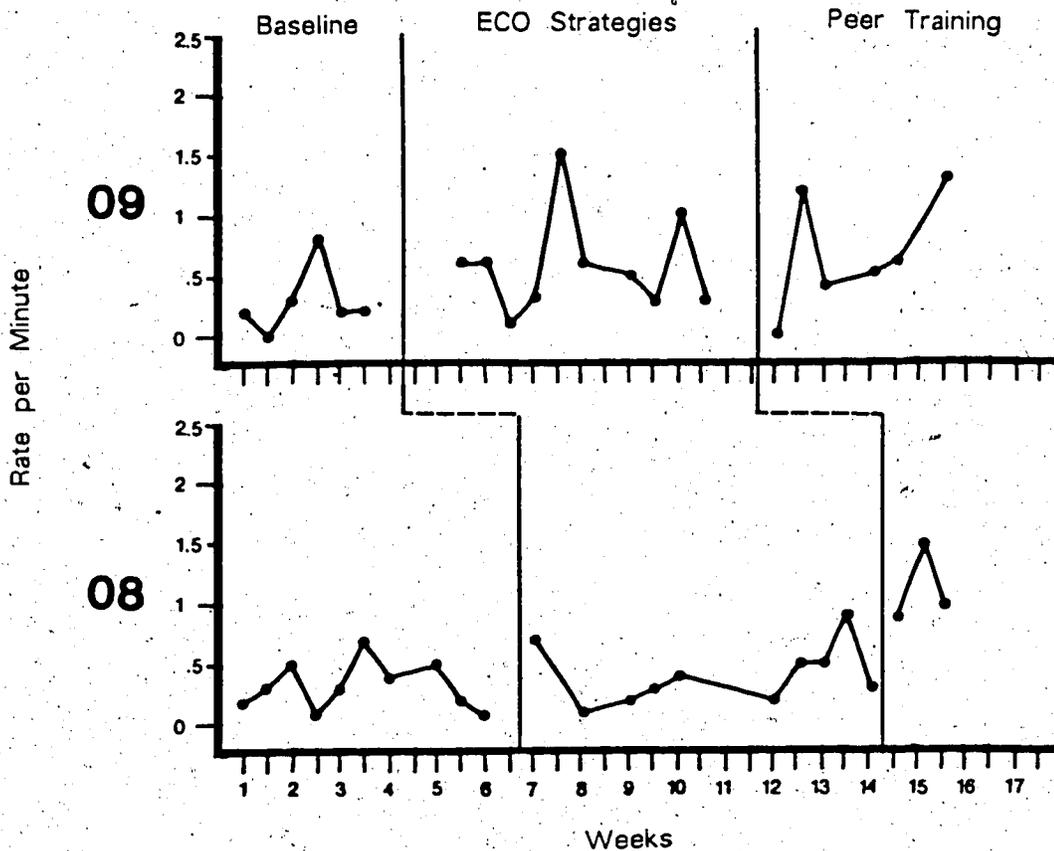


Figure 7
Rate of Turntaking Exchanges:
Staff and Handicapped Child
Rural Program 05

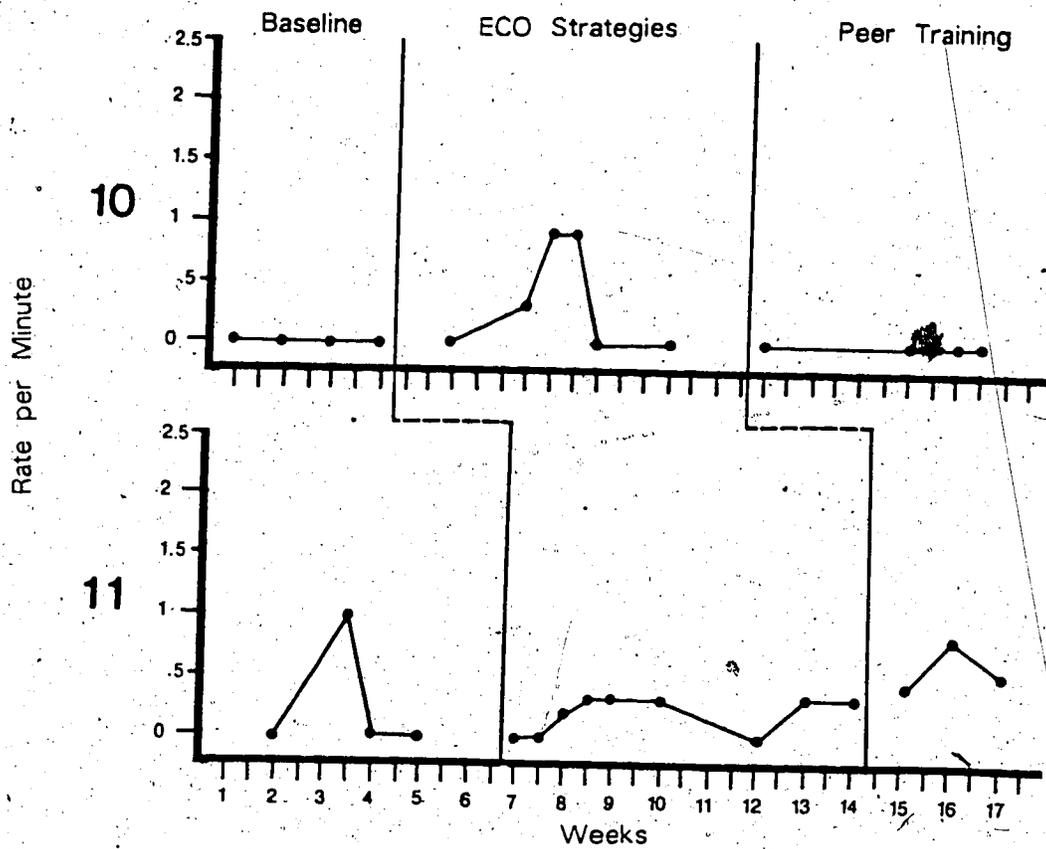


Figure 8
 Rate of Turntaking Exchanges:
 Staff and Handicapped Child
 Rural Program 06

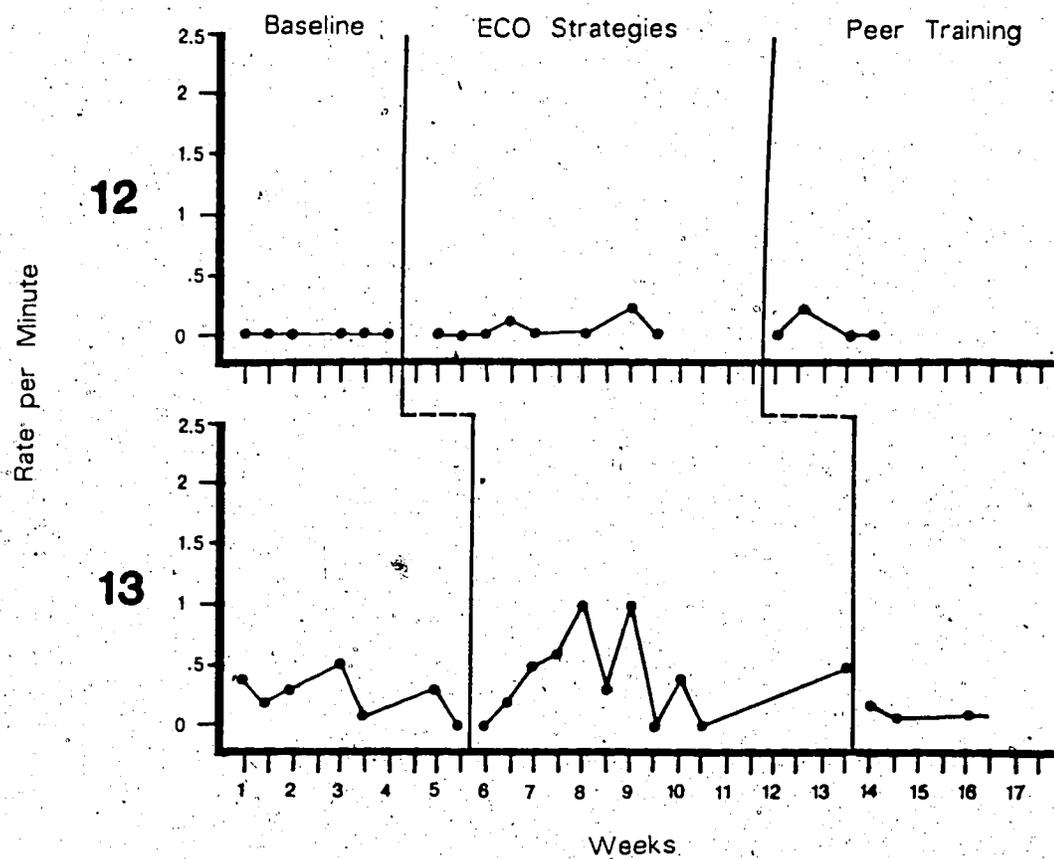
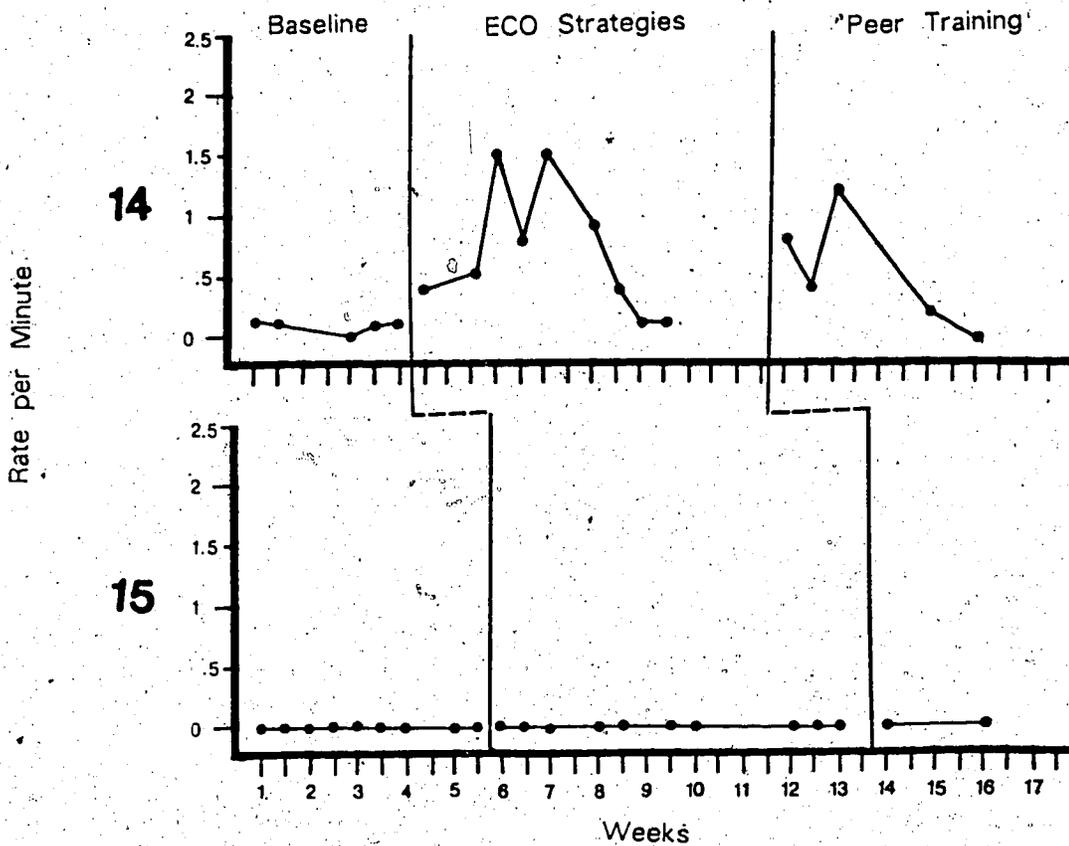


Figure 9
Rate of Turntaking Exchanges:
Staff and Handicapped Child
Rural Program 07



Research Question #2

As a result of training, was there a significant increase in the rate of the instructional staff's use of the ecological teaching strategies:

- a. Imitation
 - b. Signal
 - c. Physical Prompt
-

The data presented in Figures 10 through 16 indicates that instructional staff in all settings demonstrated minimal or no use of the imitation during their interactions with their handicapped students across all phases of the study. There was more frequent use of the signaling and prompting strategies, although there was a lack of consistency in the use of these strategies across subjects. These results were not unexpected, as MacDonald (1982) has indicated that different strategies may be more or less effective as a means of maintaining a turntaking relationship, depending on the unique behavior patterns exhibited by the child. This conclusion is particularly evident in the differential patterns of use of the ECO strategies seen across subjects within single settings.

Figure 10
Rate of Staff Use of Ecological
Teaching Strategies
Urban Program 01

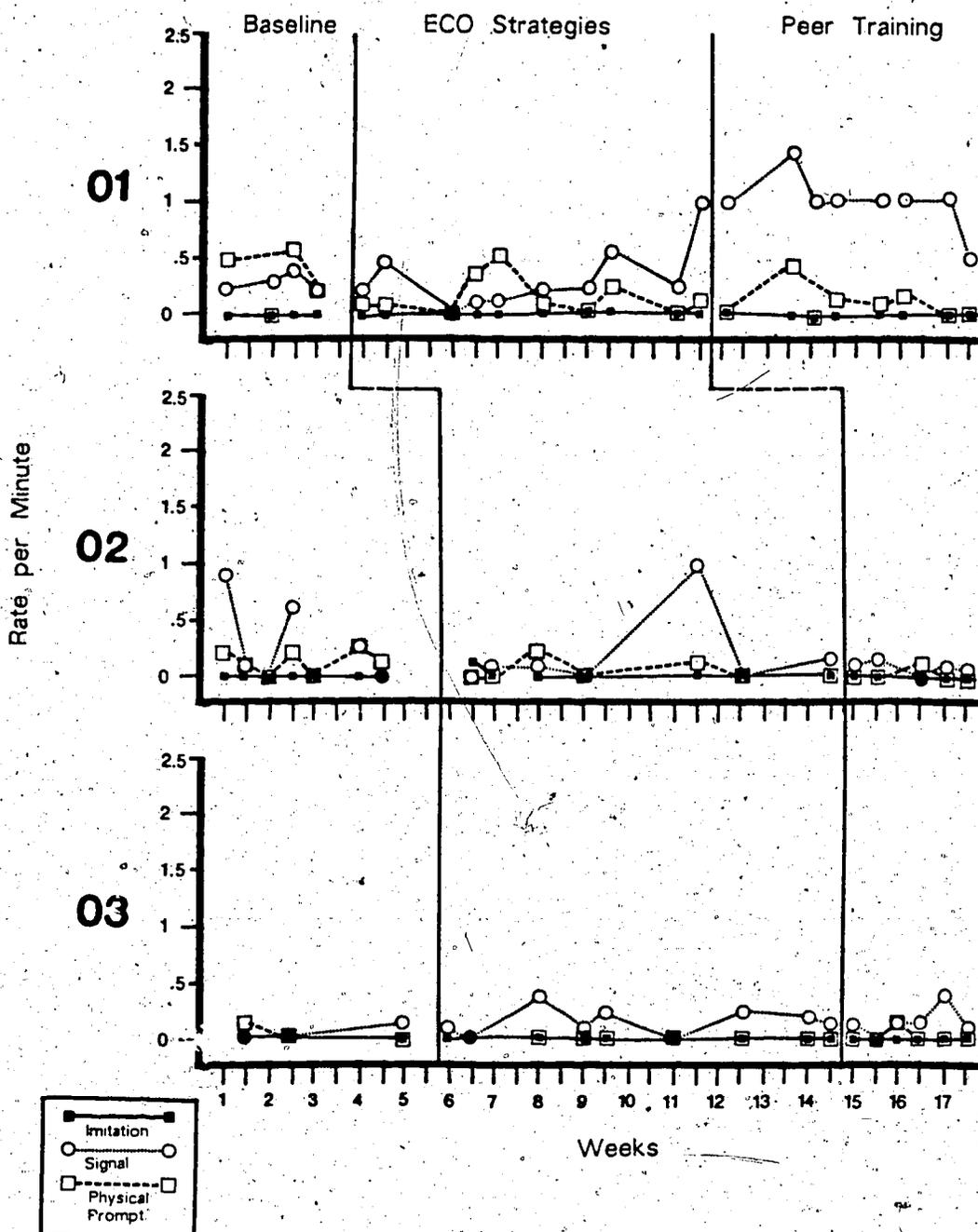


Figure 11
 Rate of Staff Use of Ecological
 Teaching Strategies
 Urban Program 02

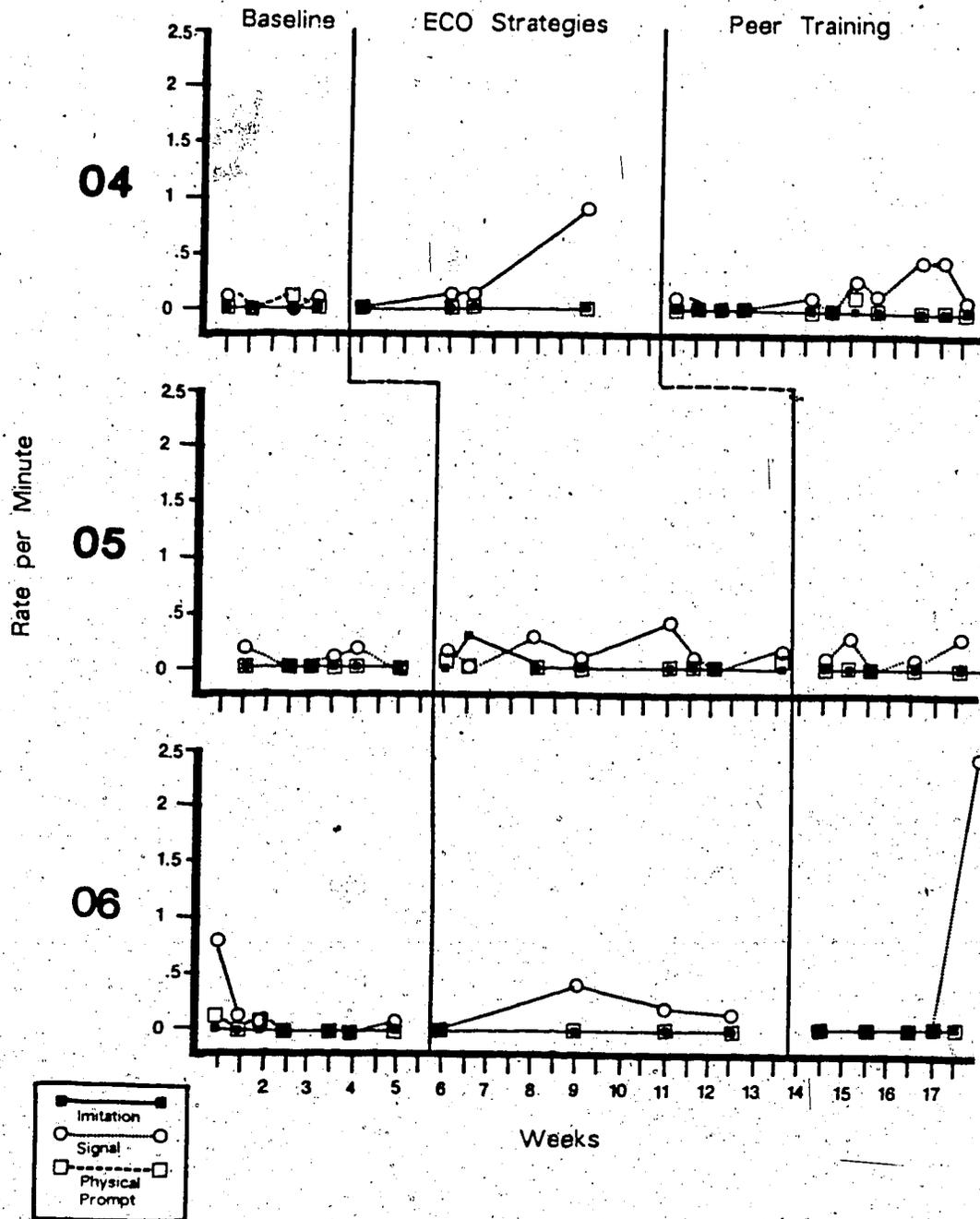


Figure 12
Rate of Staff Use of Ecological
Teaching Strategies
Urban Program 03

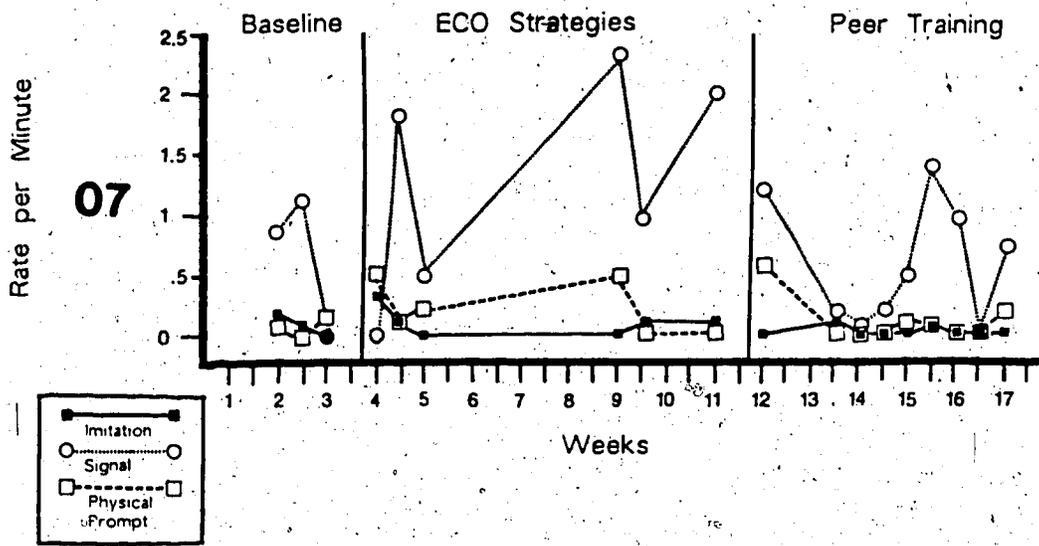


Figure 13
 Rate of Staff Use of Ecological
 Teaching Strategies
 Rural Program 04

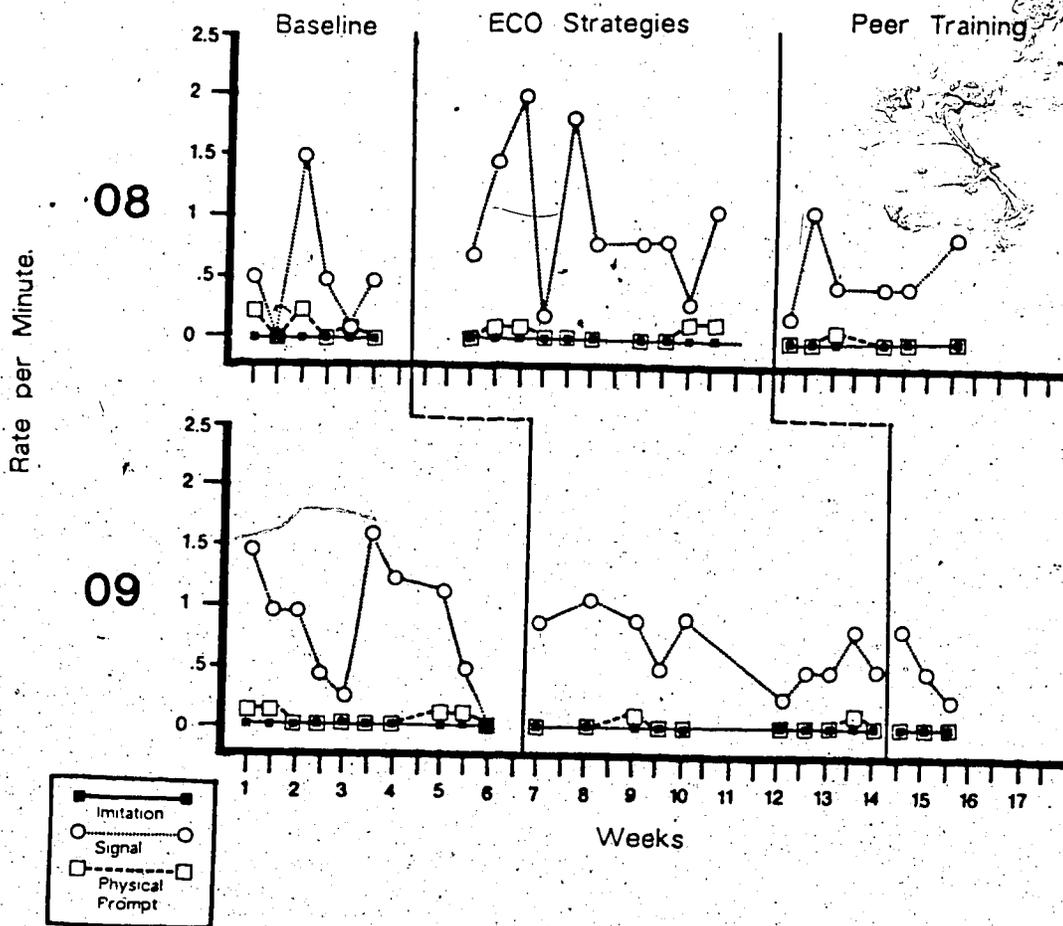


Figure 14
 Rate of Staff Use of Ecological
 Teaching Strategies
 Rural Program 05

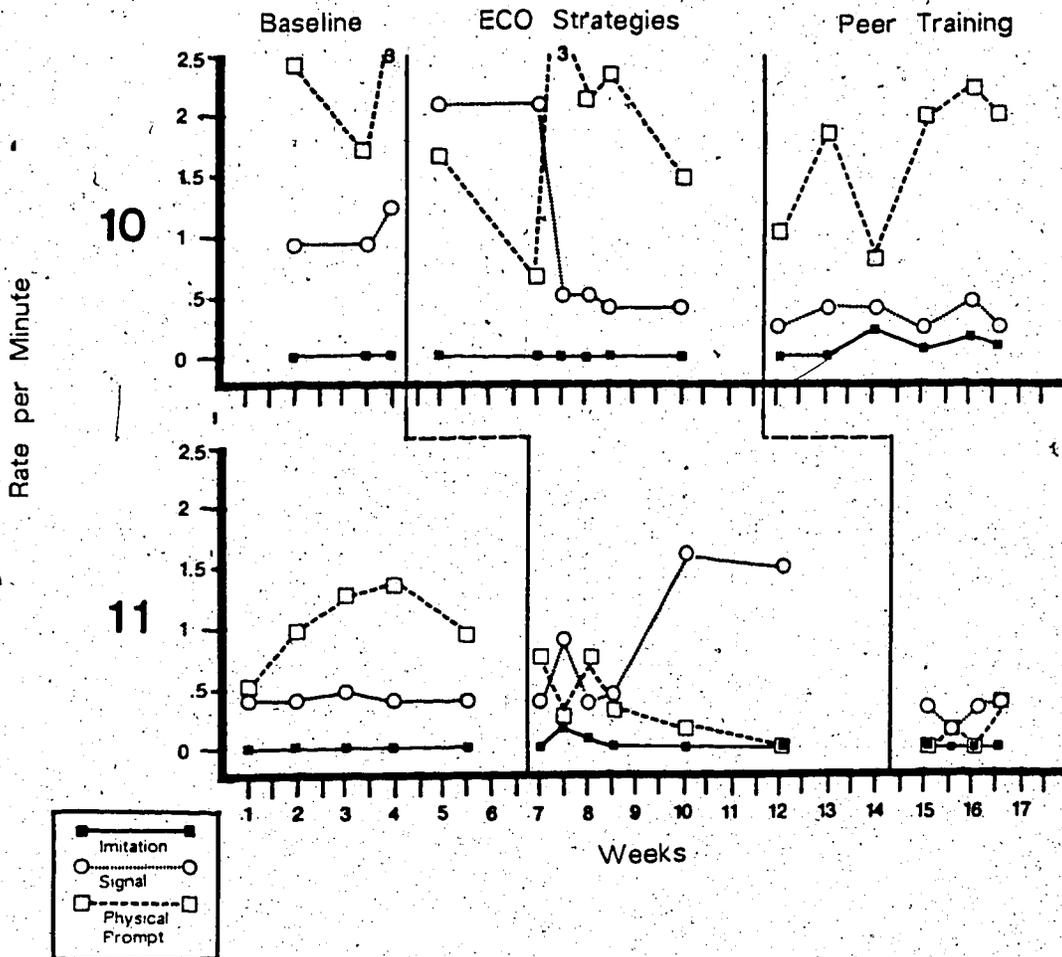


Figure 15
 Rate of Staff Use of Ecological
 Teaching Strategies
 Rural Program 06

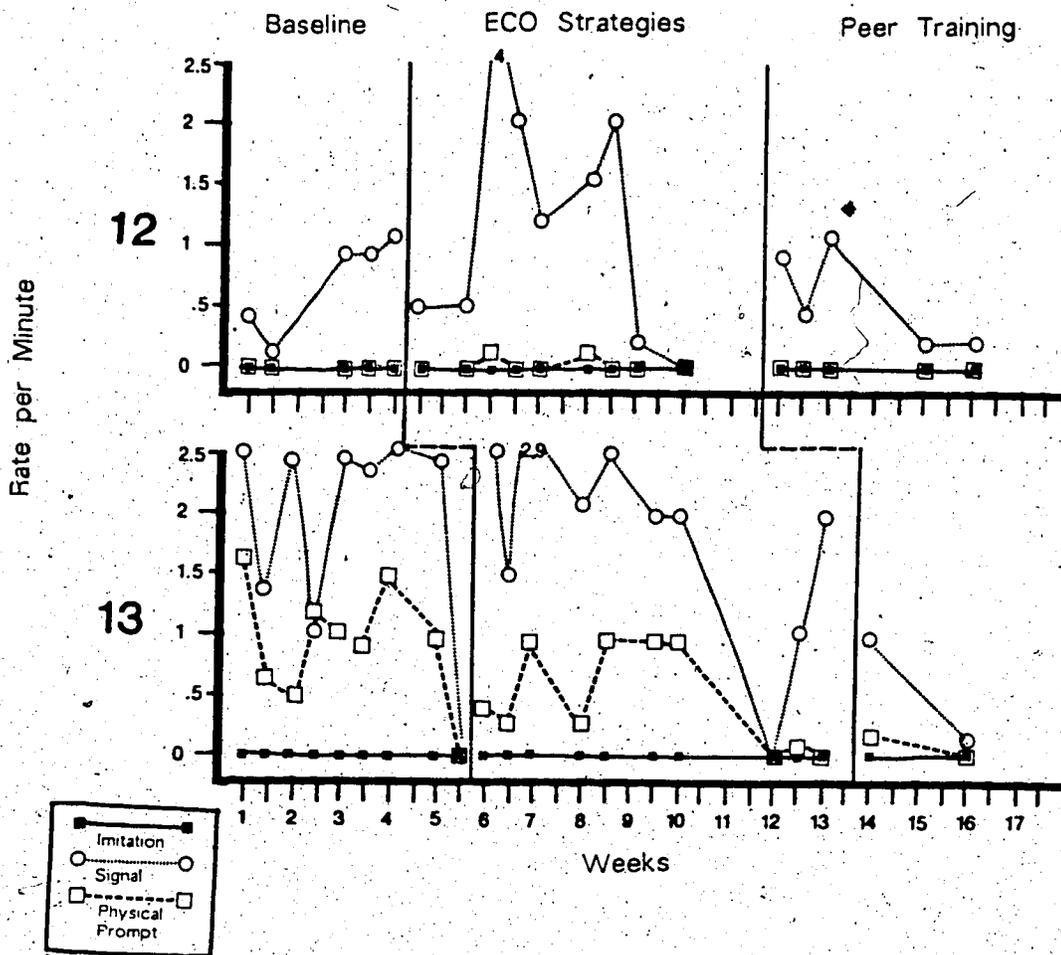
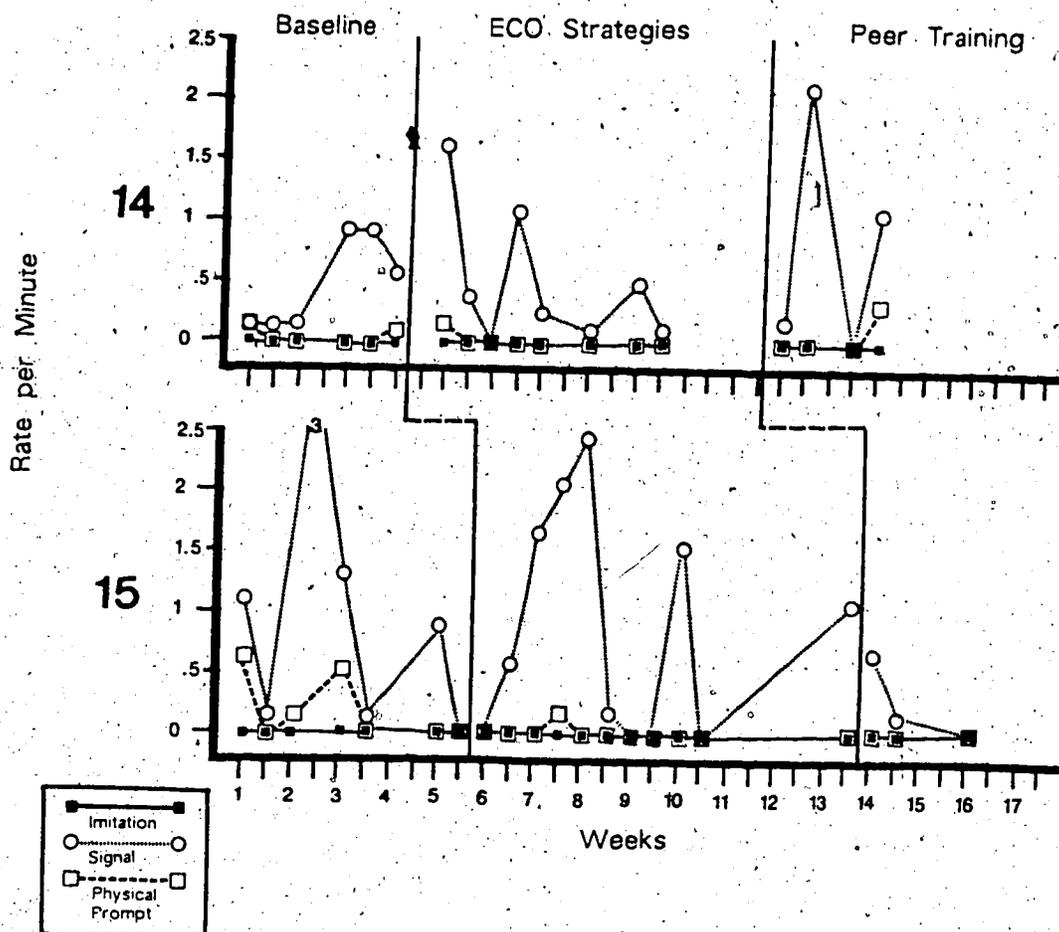


Figure 16
 Rate of Staff Use of Ecological
 Teaching Strategies
 Rural Program 07



Research Question #3 and #4

As a result of training, was there a significant increase in the rate of turns taken by the staff when they interacted with the handicapped child?

As a result of training, was there a significant increase in the rate of turns taken by the handicapped child when interacting with the instructional staff?

In general, the majority of subjects demonstrated a significant increase in the number of turns taken during social interactions with staff during the treatment phase of this study (See Figures 17-23). The increase seen in staff turns closely matched that of the handicapped children, indicating that the turntaking exchanges were typically not dominated by either one of the participants. Again, a minimal number, or no turns were exhibited by subjects 13 and 14, who were previously shown as not to have engaged in turntaking exchanges.

Figure 17
 Rate of Turns: Staff and Handicapped Child
 Urban Program 01

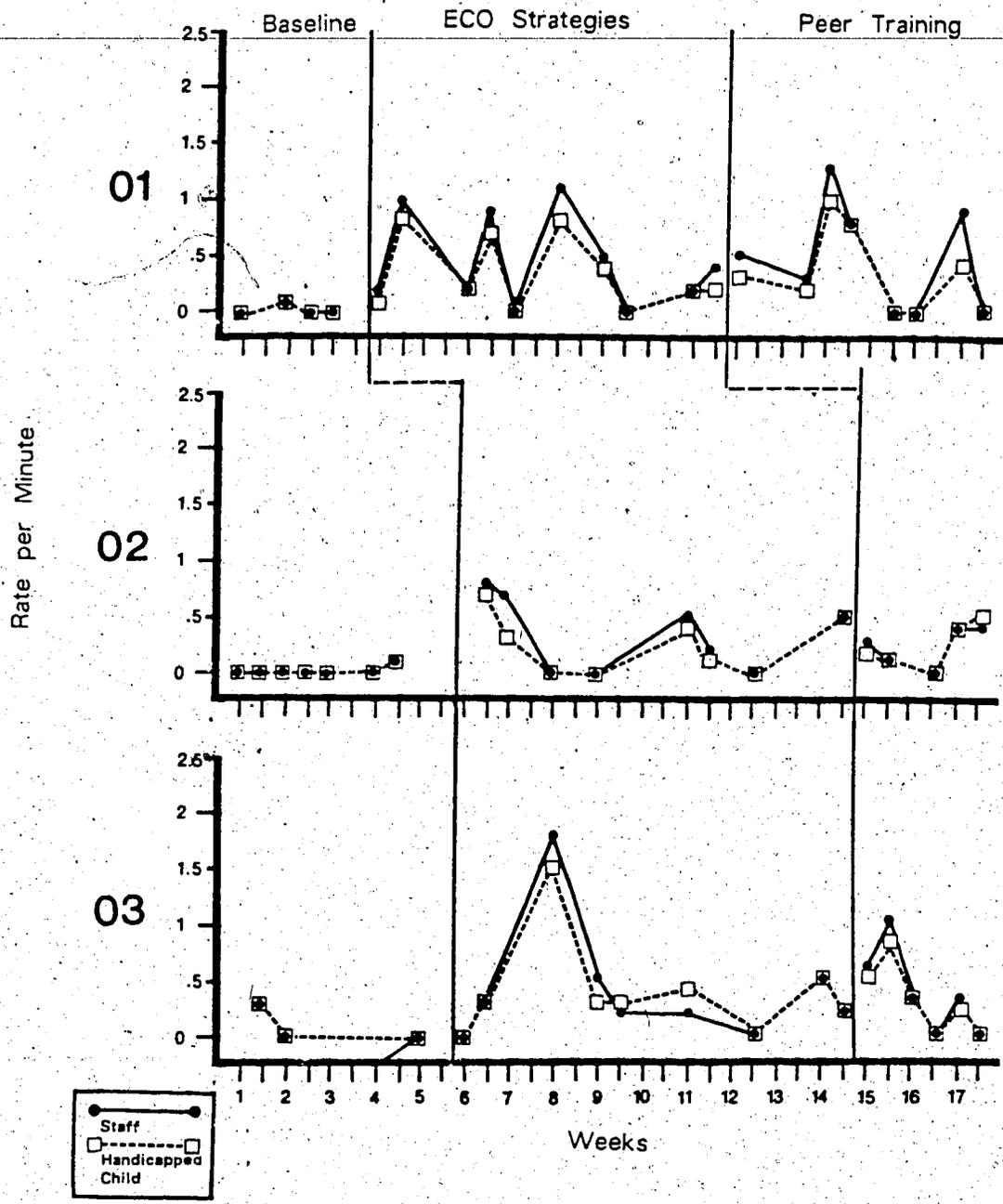


Figure 18
 Rate of Turns: Staff and Handicapped Child
 Urban Program 02

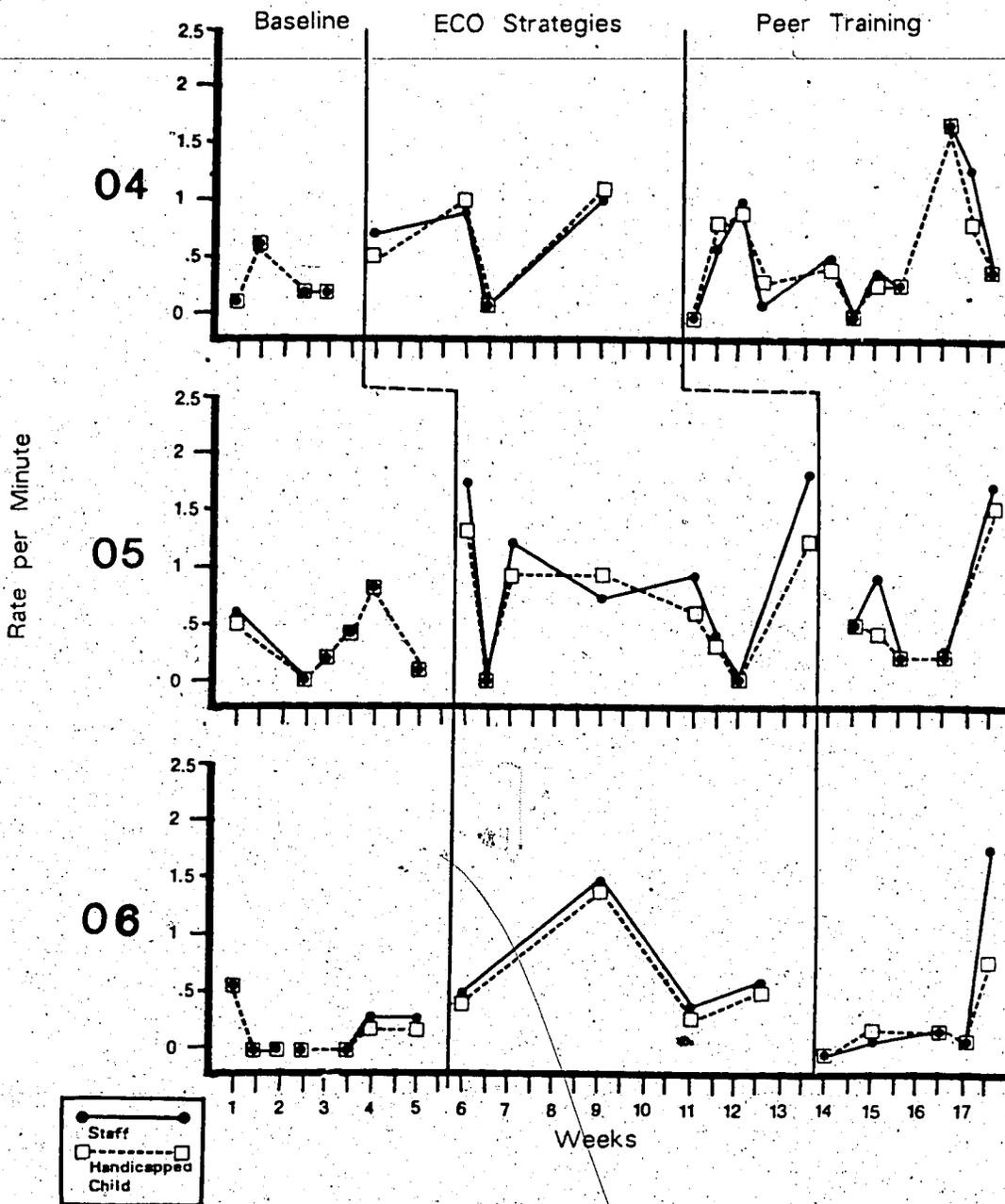


Figure 19
Rate of Turns: Staff and Handicapped Child
Urban Program 03

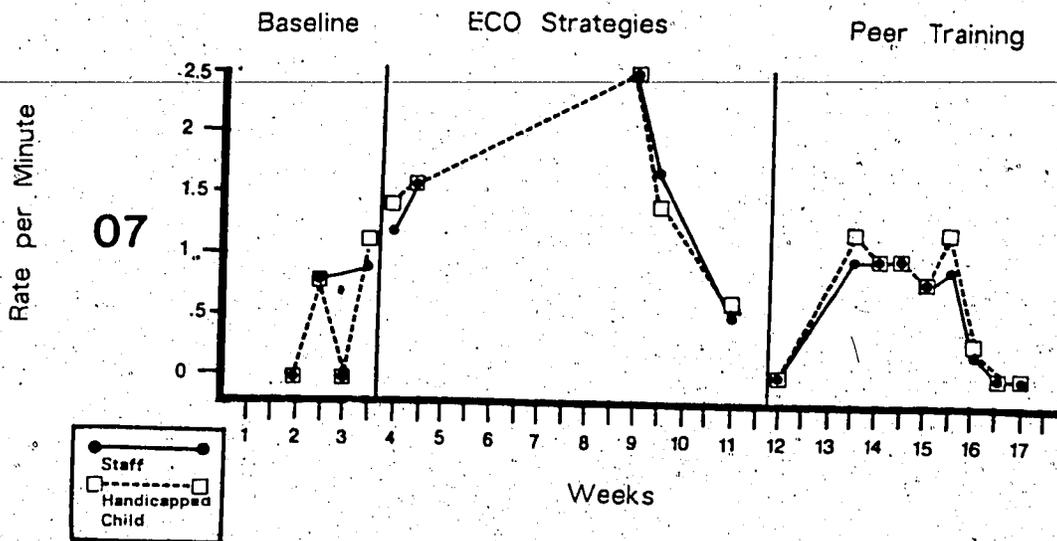


Figure 20
Rate of Turns: Staff and Handicapped Child
Rural Program 04

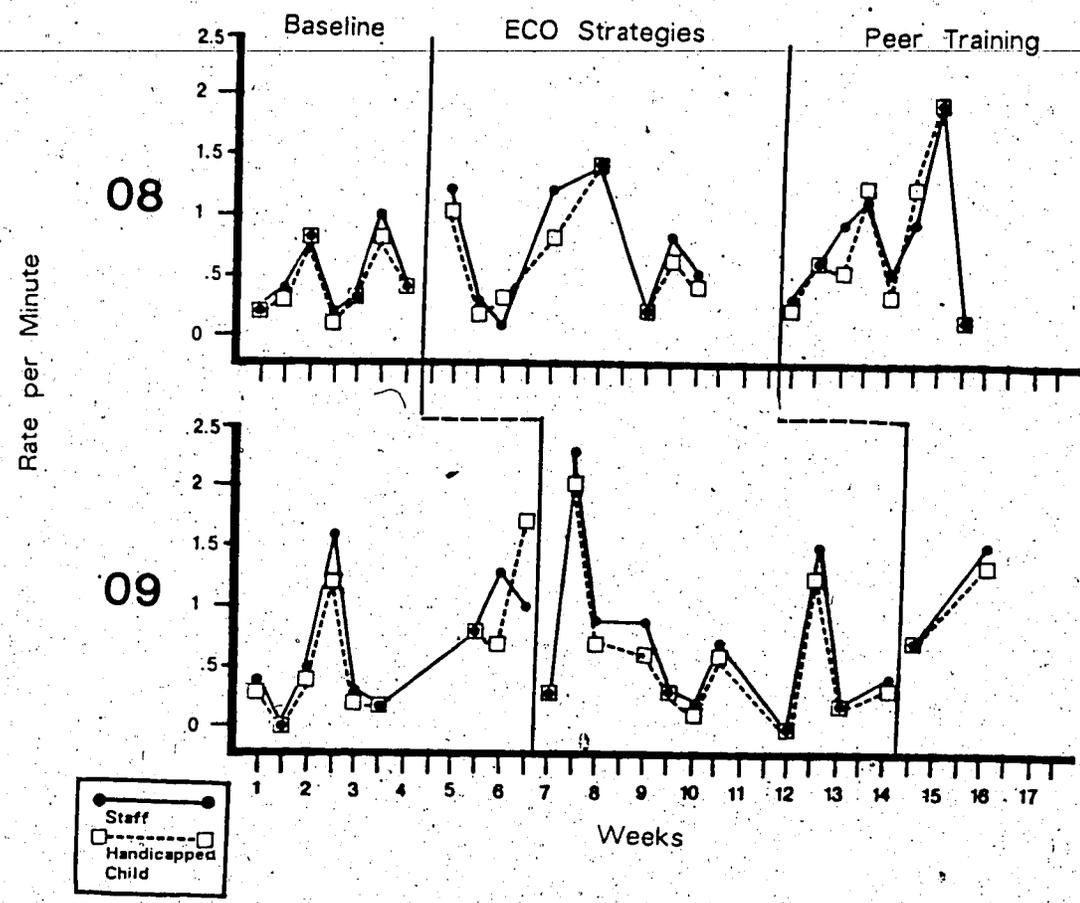


Figure 21
 Rate of Turns: Staff and Handicapped Child
 Rural Program 05

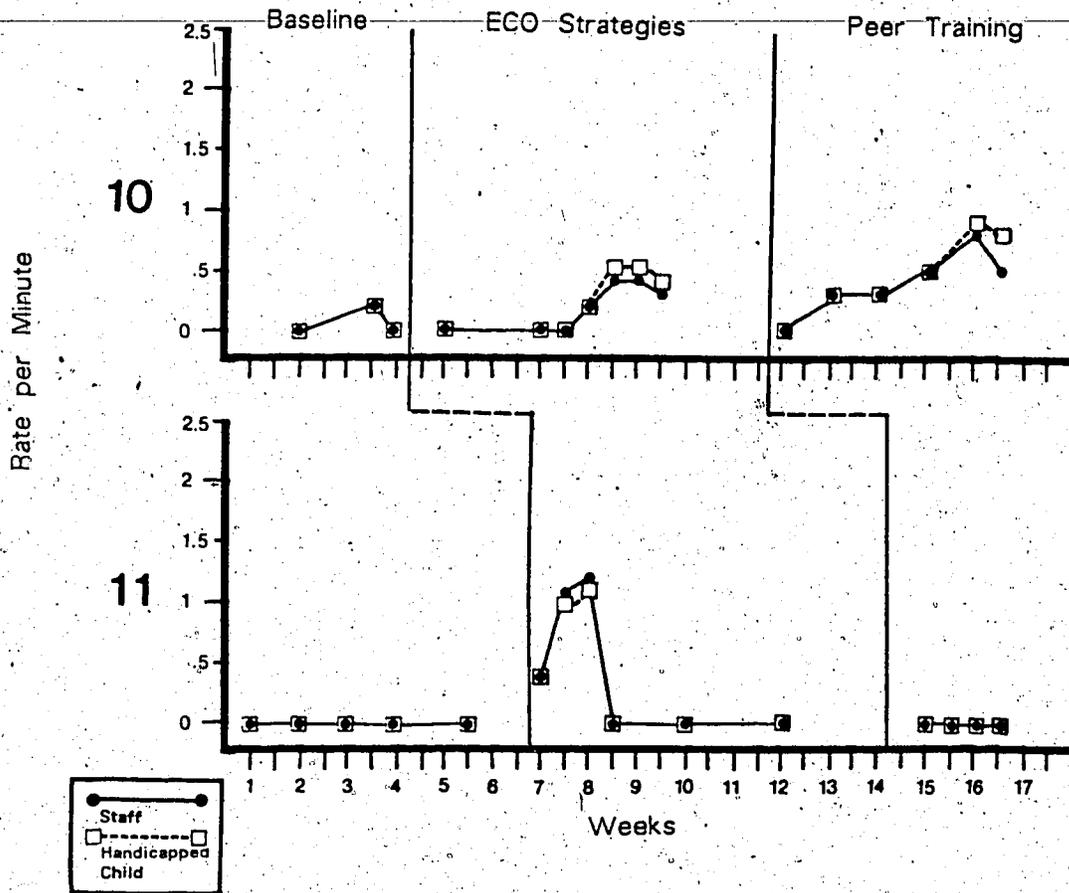


Figure 22
 Rate of Turns: Staff and Handicapped Child
 Rural Program 06

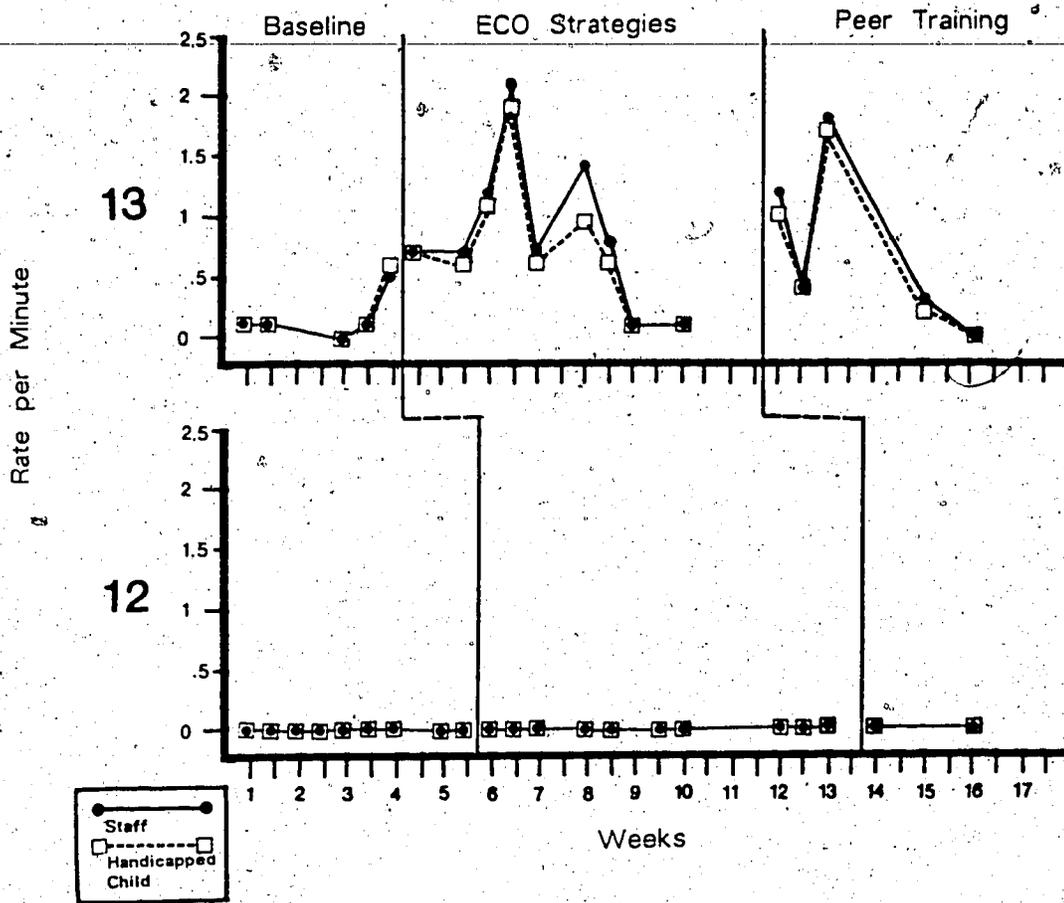
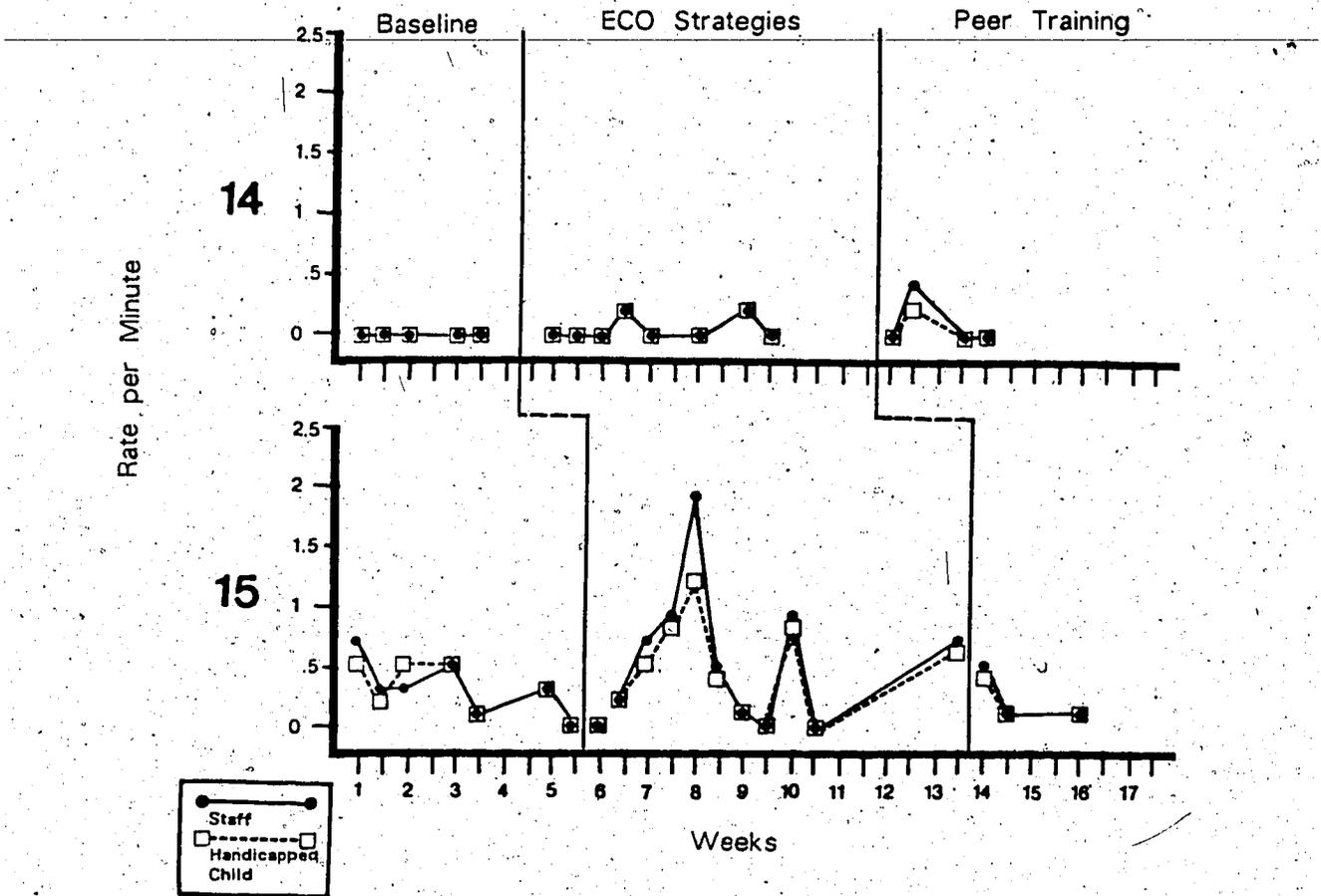


Figure 23
Rate of Turns: Staff and Handicapped Child
Rural Program 07



Research Question #5

As a result of training was there a significant increase in the length of turntaking exchanges between the instructional staff and the handicapped child?

In general, the data presented in Figures 24 through 30 indicated that there was a marked increase in the mean length of the turntaking exchanges associated with the introduction of the treatment for the majority of the subjects under investigation.

However, in most cases, while a change in the level was evident, the data paths within the treatment phase were characterized by a considerable degree of variability and no marked trends were demonstrated. It would appear that while staff demonstrated the ability to increase the length of the turntaking exchanges, the behavior pattern was relatively unstable, and generally did not show an increasing trend over time.

Figure 24
 Length of Turntaking: Staff and Handicapped Child
 Urban Program 01

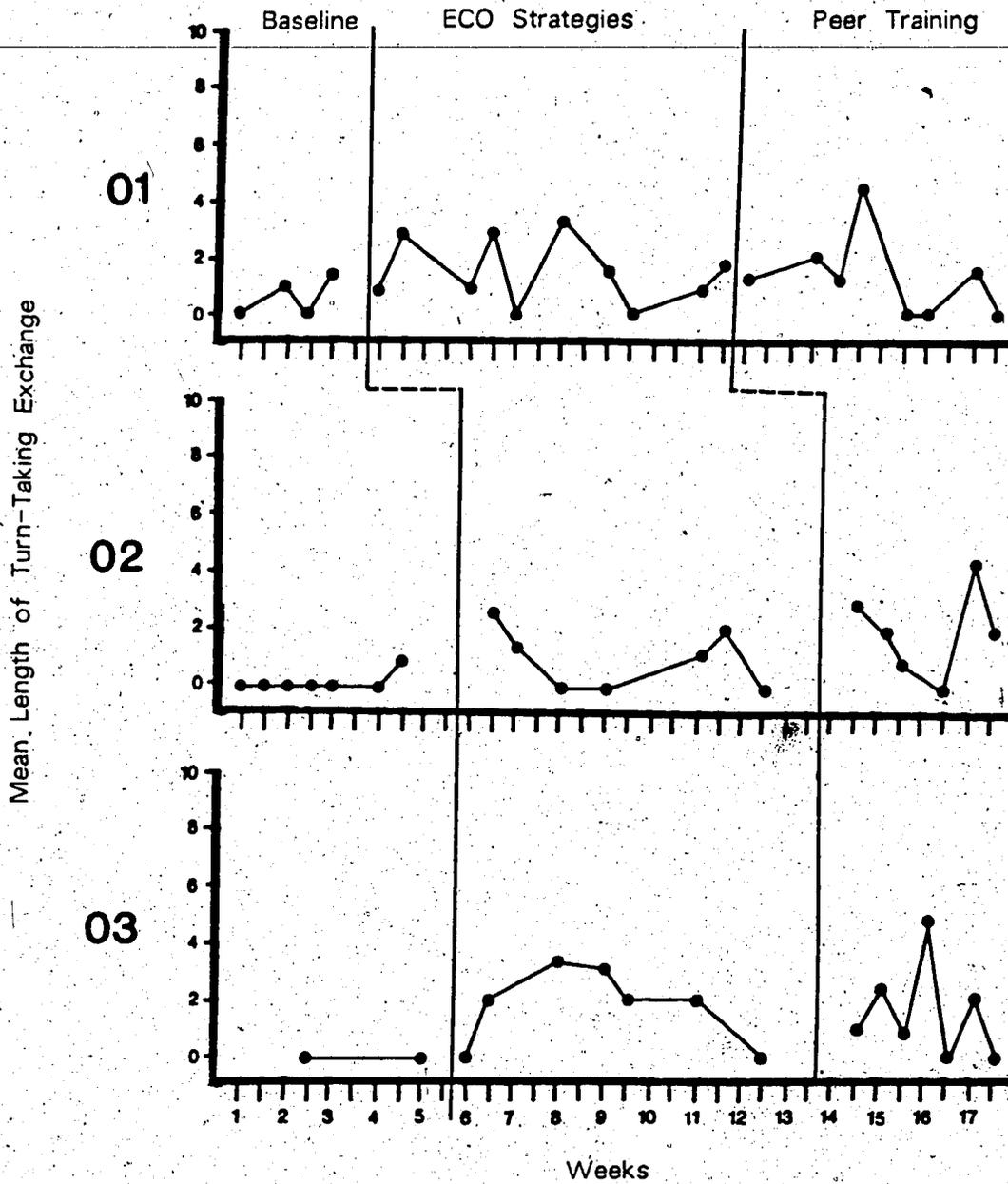


Figure 25
 Length of Turntaking: Staff and Handicapped Child
 Urban Program 02

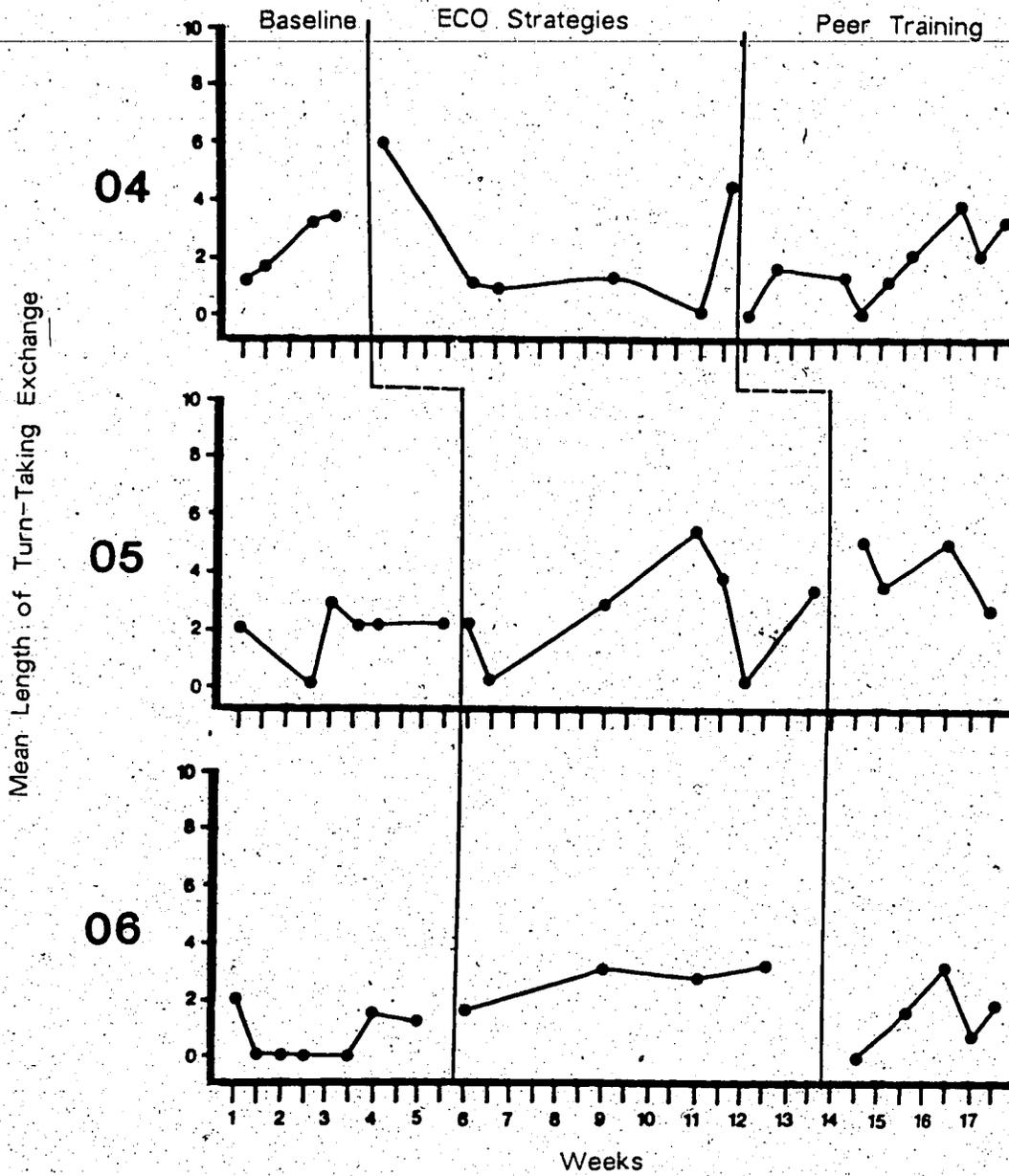


Figure 26
Length of Turntaking: Staff and Handicapped Child
Urban Program 03

Mean Length of Turn-Taking Exchange

07

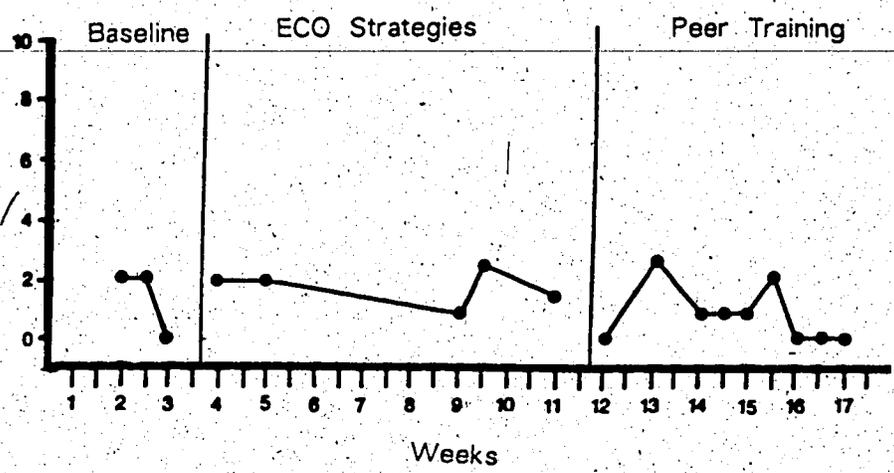


Figure 27
Length of Turntaking: Staff and Handicapped Child
Rural Program 04

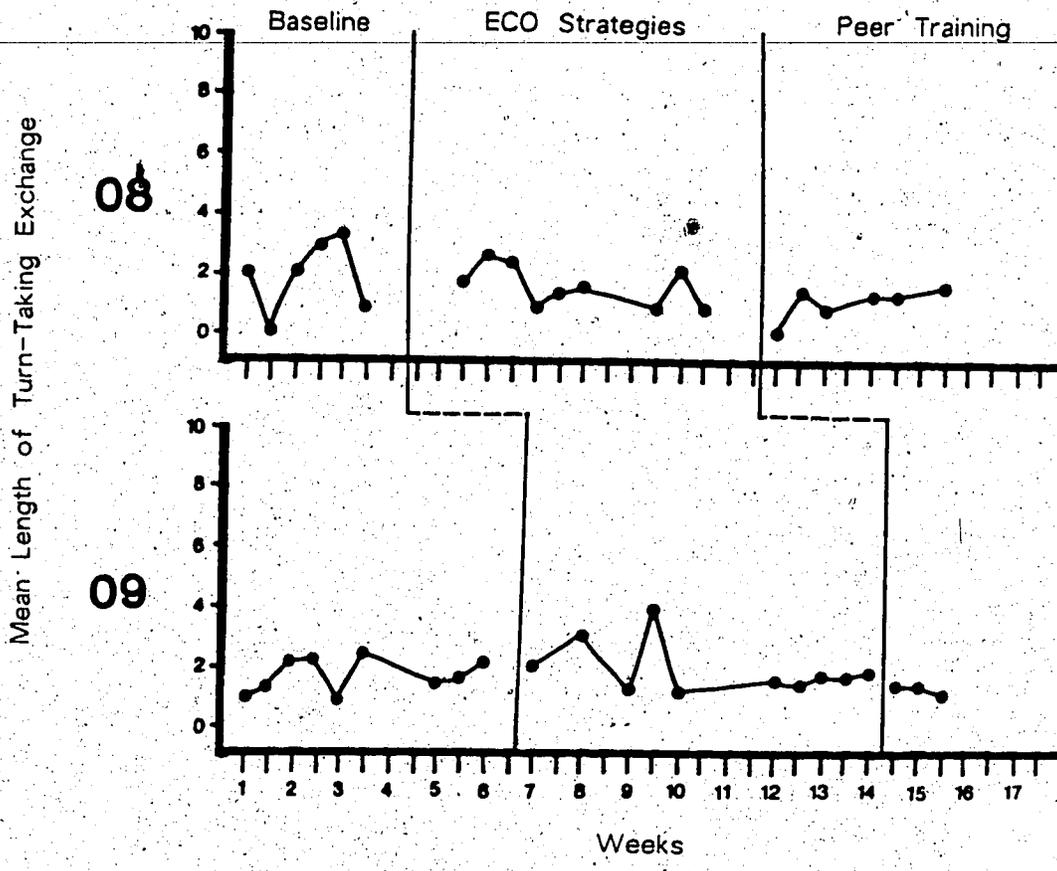


Figure 28

Length of Turntaking: Staff and Handicapped Child

Rural Program 05

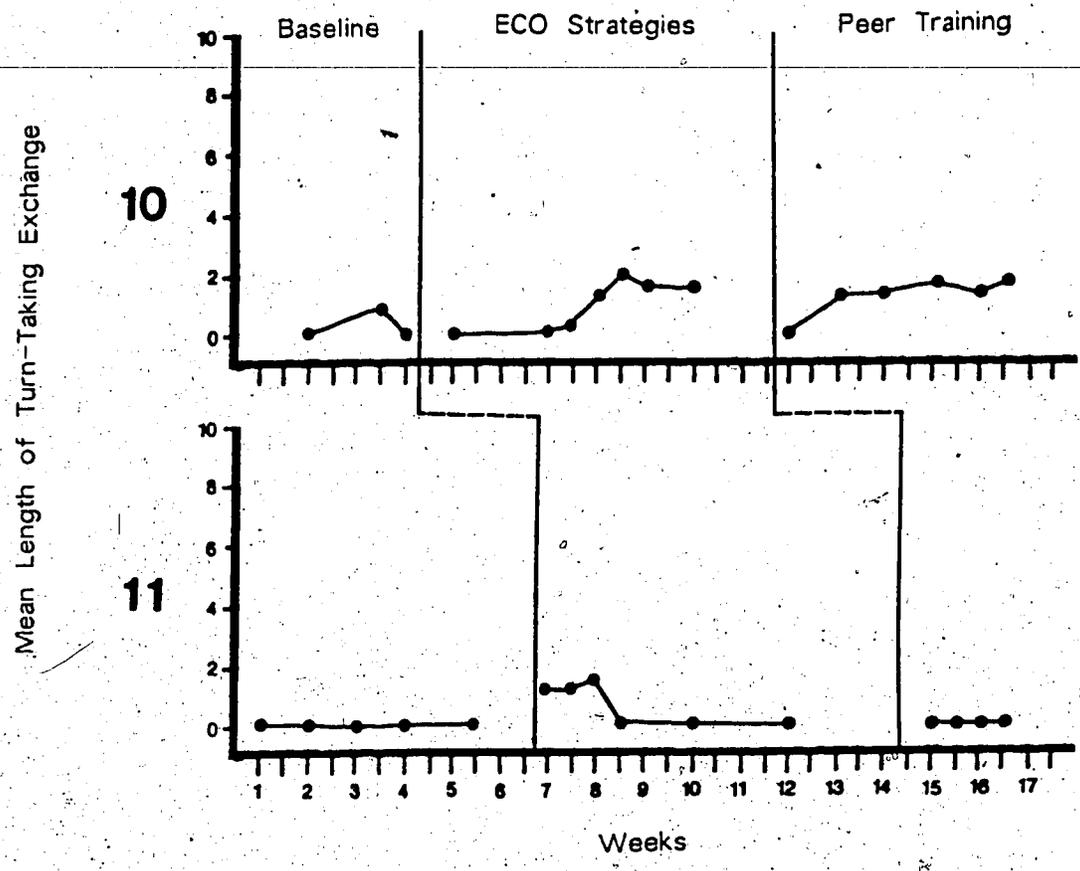


Figure 29
Length of Turntaking: Staff and Handicapped Child
Rural Program 06

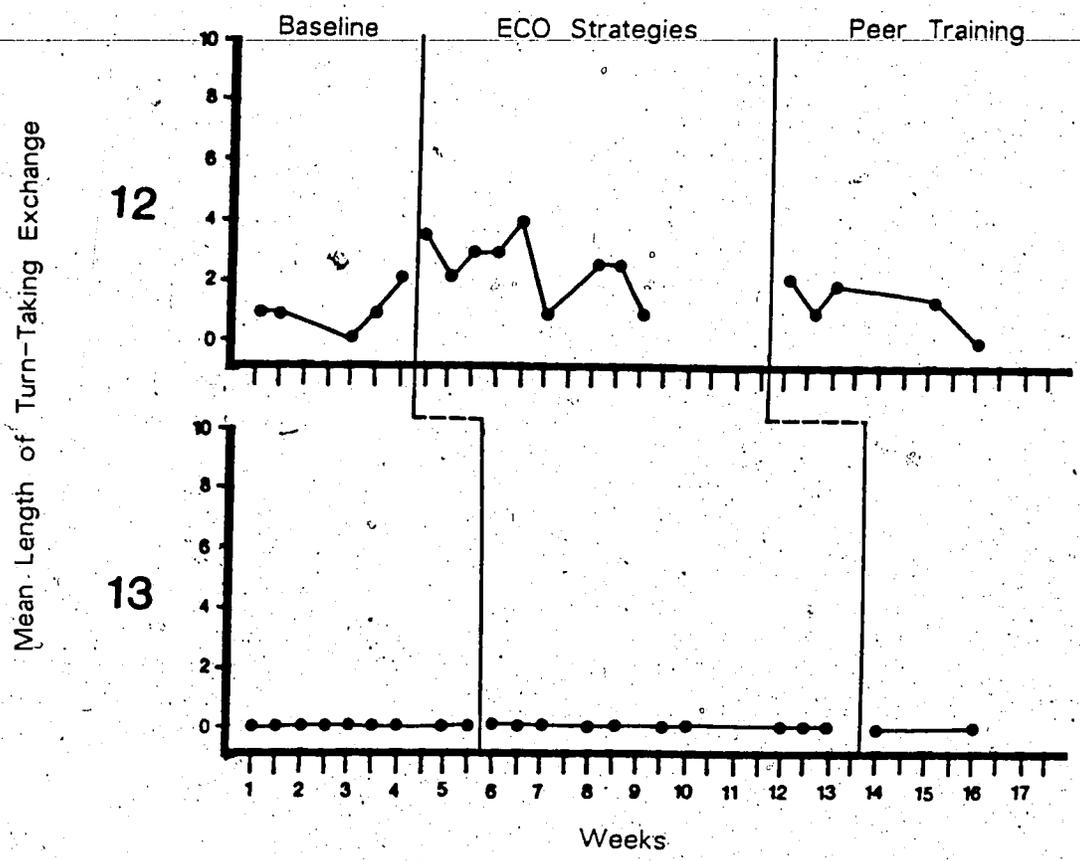
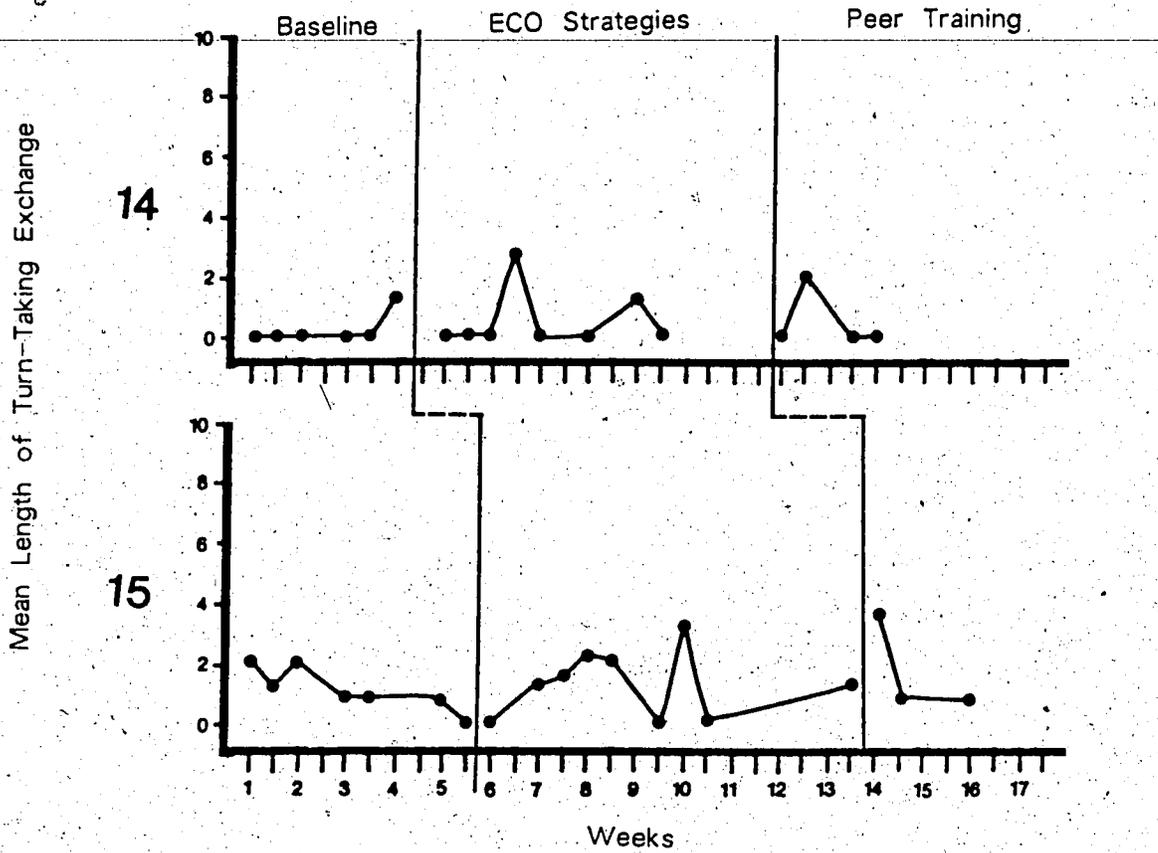


Figure 30
 Length of Turntaking: Staff and Handicapped Child
 Rural Program 07



Summary

The observational data gathered on staff/handicapped child interaction patterns indicates that, for a majority of the subjects, staff use of the skills presented during the first inservice module resulted in a significant increase in the rate of turntaking exchanges between the staff and their handicapped students. Staff demonstrated minimal use of imitation during their interactions with the students, and while signaling and prompting were used at a much higher rate, there was a lack of consistency in the use of these strategies across subjects. The majority of subjects also demonstrated an abrupt change following the introduction of the treatment in the length of the turntaking exchanges which occurred between the staff and the handicapped child. However, the observational data indicated that there was a considerable degree of variability seen in this behavior within the treatment phase, and no evident trend was seen across time. As well, it was noted that typically, the rate of turntaking exchanges and therefore, number of turns, occurred at a lower level following the implementation of the peer-mediated strategies. This decreased level of occurrence could have been a reflection of the increased amount of interaction occurring between the handicapped children and their peers, with the resulting decrease in the opportunity for turntaking with instructional staff.

Subjects 13 and 14 demonstrated very minimal or no change in behavior as a result of the introduction of the treatment. Although staff demonstrated some use of the signaling and prompting strategies, visual analysis typically revealed a considerable degree of variability in both occurrence of these behaviors both across and within phases; thus the use of these strategies did not reliably increase following training. Additionally, subjects 10 and 12 demonstrated an abrupt change in behavior immediately following the implementation of the treatment, but the effects were rapidly diminished and the behaviors returned to baseline levels were re-established.

B. Inservice Module #2: Training Nonhandicapped Peers

Research Question #1 and #2

The frequency of verbal and/or motoric behaviors which function to initiate social interaction directed towards the handicapped child by his/her nonhandicapped peers will increase.

The frequency of verbal and/or motoric behaviors which function to initiate a social interaction emitted by the handicapped child will increase.

In the following graphic presentation, the initiation behaviors of both the handicapped children as well as the nonhandicapped peers are presented simultaneously. Visual analysis of the data presented in Figures 31 through 37 reveals that the majority of the subjects demonstrated a significant increase in their rate of social initiations. However, the rate was relatively stable across phases for subjects 05, 08 and 09.

Additionally, the rate of initiation behaviors directed towards the subjects typically increased as the treatment was implemented, although for a number of subjects (01, 04, 06, 11, 12, 14, 15) there was a considerable overlap in measures across phases. However, it was noted that for most of these subjects, the rate of initiations emitted by the peers was generally more stable, and did not exhibit the considerable variability which was demonstrated during the baseline phase. Hence, it would appear that while the general level of initiation behavior did not change abruptly, the handicapped children were receiving these initiations at a more stable rate over time.

However, it was noted that one subject, 10, demonstrated little or no change in the rate of initiation behavior: the target child was shown to initiate social interactions only during one observation session, although this behavior did occur during the peer training phase the peers exhibited a minimal increase in behaviors directed towards this subject, which resulted in a minor increase in the level of behavior associated with the treatment phase.

Figure 31
Rate of Social Initiations:
Peers and Handicapped Child
Urban Program 01

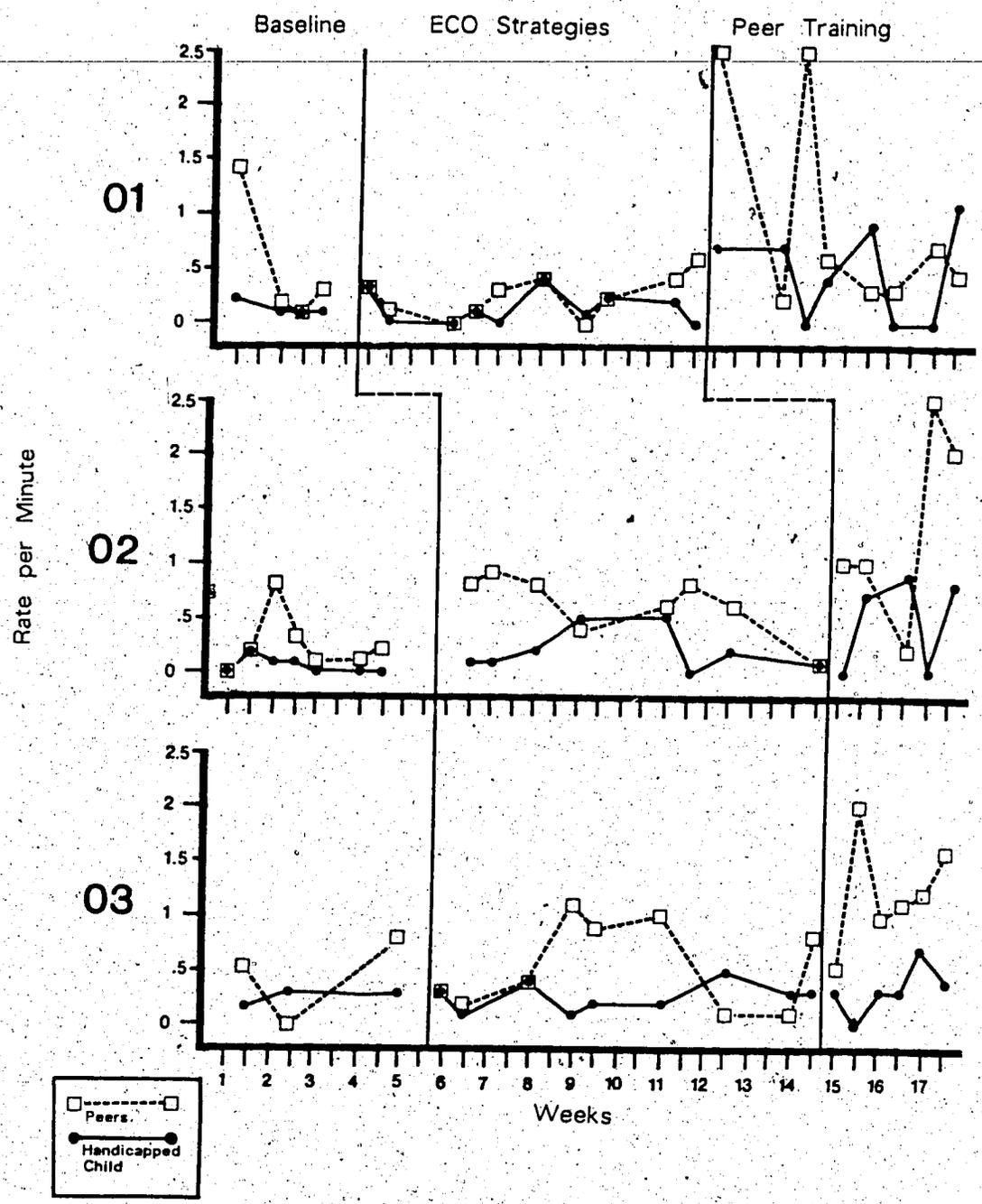


Figure 32
Rate of Social Initiations:
Peers and Handicapped Child
Urban Program 02

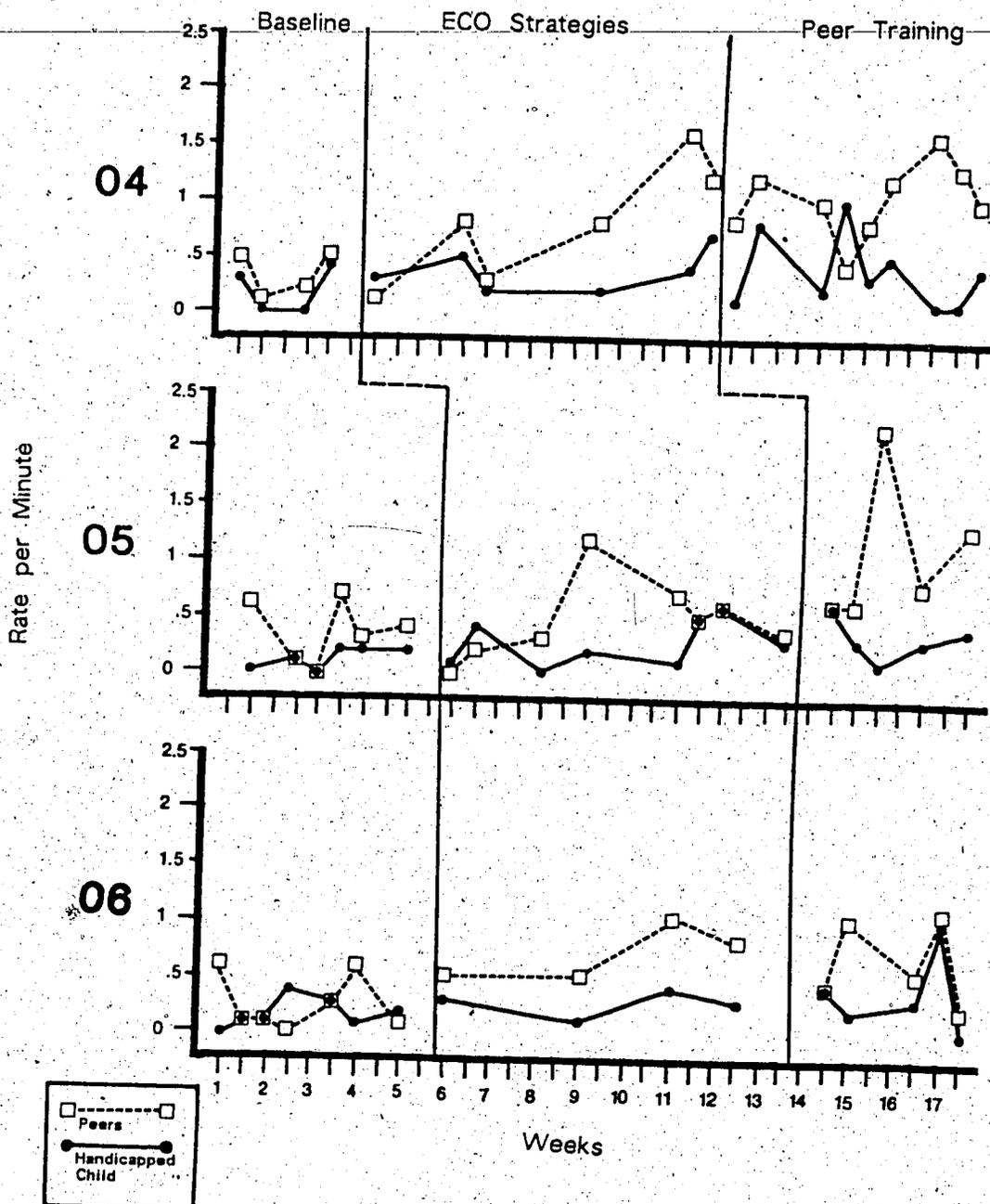


Figure 33
Rate of Social Initiations:
Peers and Handicapped Child
Urban Program 03

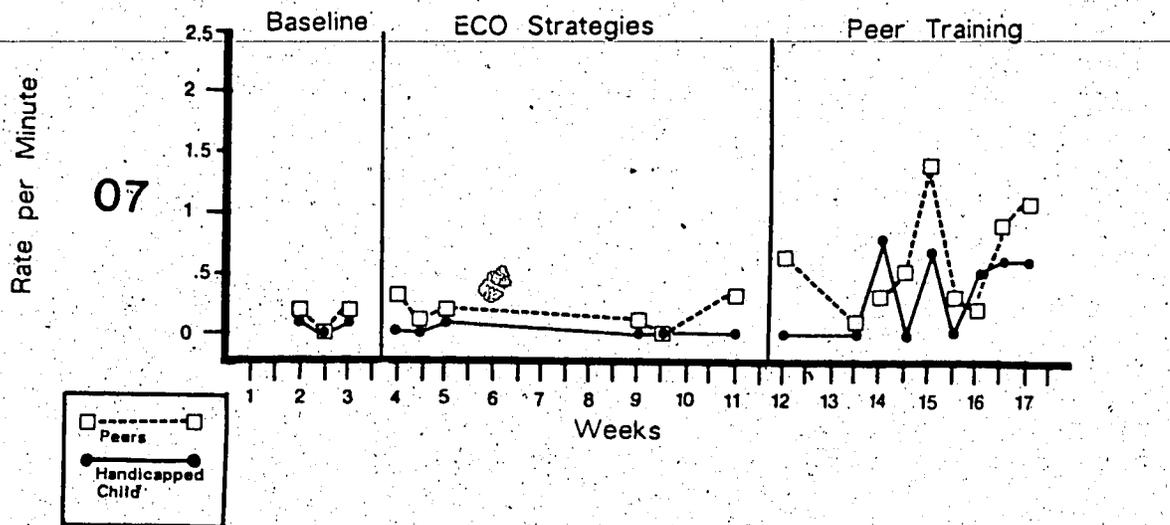


Figure 34
Rate of Social Initiations:
Peers and Handicapped Child
Rural Program 04

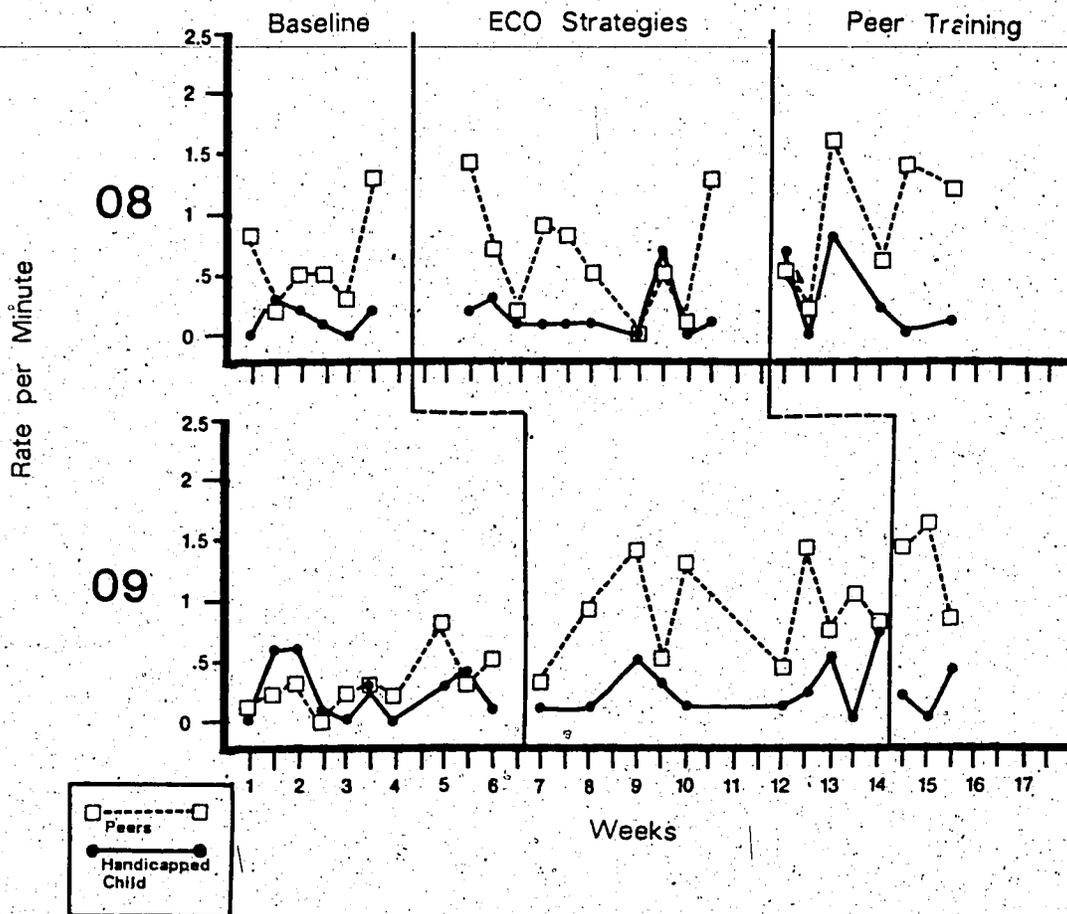


Figure 35
 Rate of Social Initiations:
 Peers and Handicapped Child
 Rural Program 05

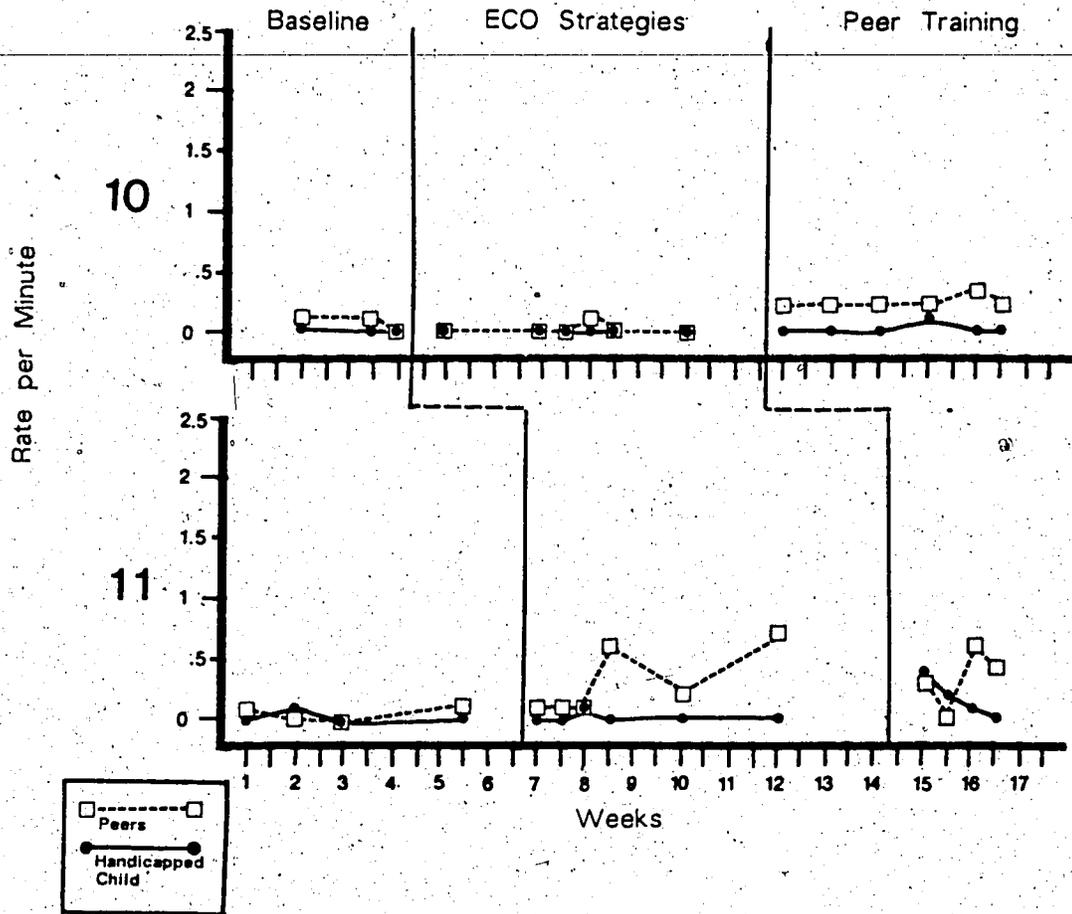


Figure 36
 Rate of Social Initiations:
 Peers and Handicapped Child
 Rural Program 06

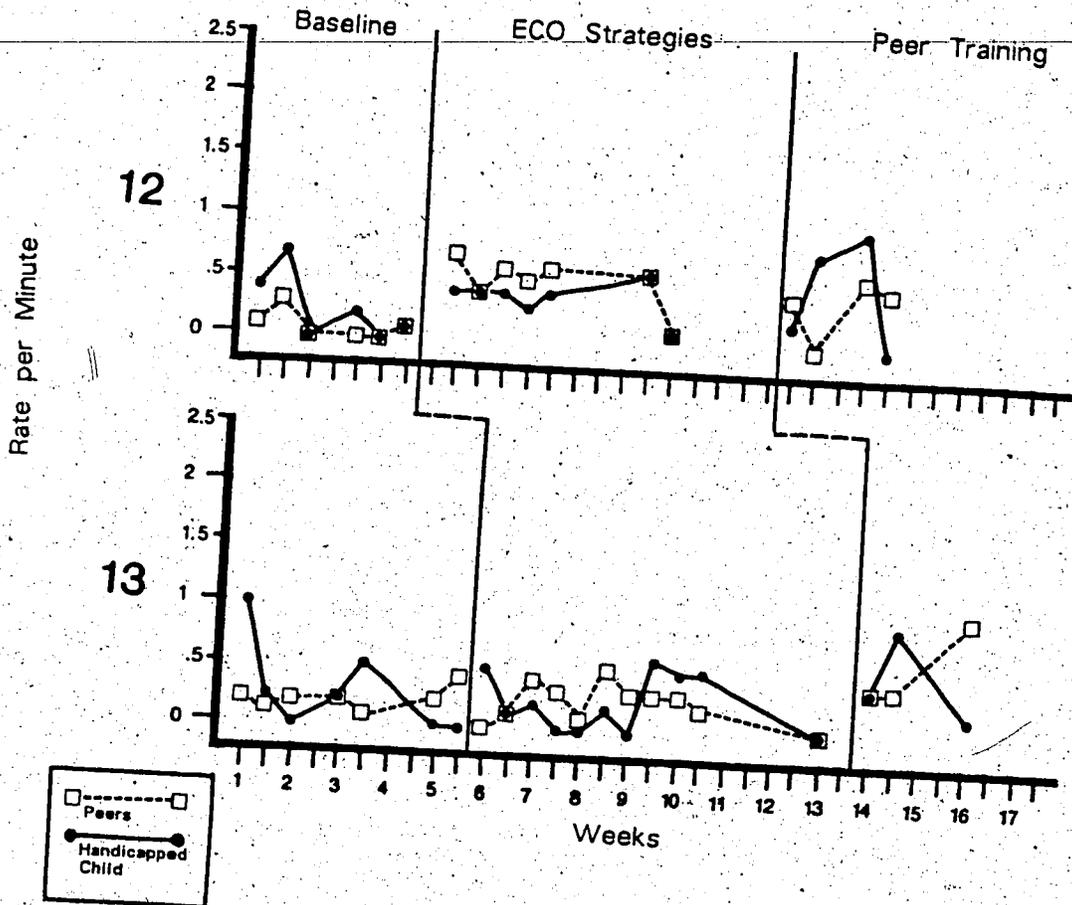
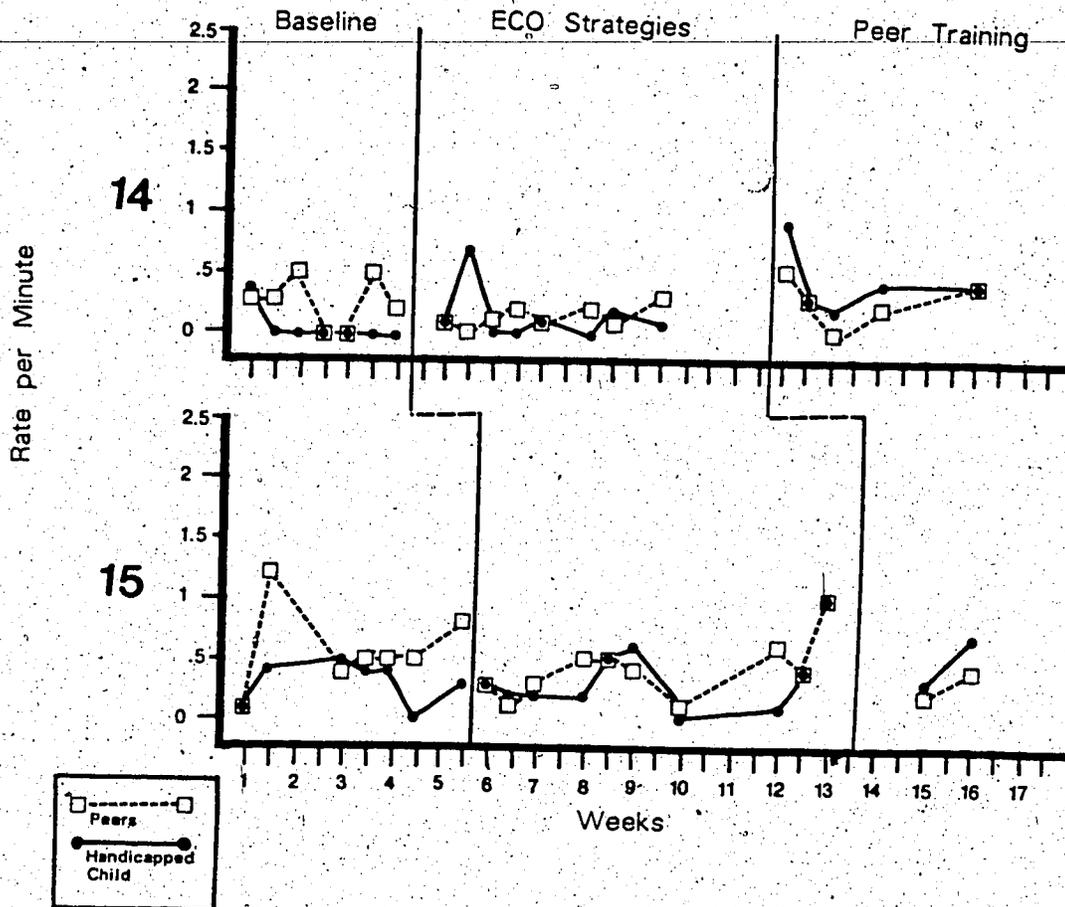


Figure 37
 Rate of Social Initiations:
 Peers and Handicapped Child
 Rural Program 07



Research Questions #3 and #4

As a result of training, was there a significant increase in the rate of social behaviors exhibited by the nonhandicapped peers during interactions with the handicapped child?

As a result of training, was there a significant increase in the number of social behaviors exhibited by the handicapped child?

Again, the total number of interactive behaviors exhibited by the handicapped,

children and the nonhandicapped peers is presented simultaneously in Figures 38 through 44. In general, three different behavior patterns characterized the treatment effects exhibited by the research subjects. First, one group of subjects (03, 04, 06, 07, 08, 11, 13 and 15) demonstrated an increased level of interactive behaviors subsequent to the implementation of the peer mediated treatment. Typically, this increase was a continuation of the upward trend which was demonstrated during the first treatment phase. However, the level of behavior exhibited during the treatment phases was significantly higher than that observed during the baseline phase.

Second, the data obtained for subjects 05, 09 and 14 demonstrated a considerable degree of variability in behavior across phases. Given the significant overlap of the measures across phases, no definitive statements concerning treatment effects can be made. However, it was noted in the case of subject 05 the introduction of the treatment was associated with increased stabilization of the level of the behavior. The third characteristic behavior pattern was demonstrated by subjects 01, 02, 10, and 12 who showed little or no response to the introduction of the treatment. The baseline level of behavior was consistently maintained across phases.

The rates of interactive behaviors exhibited by the nonhandicapped peers was also characterized by a general lack of consistency across subjects. Again, three different behavior patterns characterized the behaviors exhibited by the peers. In the first case, the peers interacting with subjects 03, 04, 06, 07, 08 and 15 demonstrated an increase in the level of social behavior following the introduction of the treatment, and in most cases this increase was maintained or was characterized by an increasing upward trend across time. Secondly, it was seen that the rate of peer social behaviors directed towards subjects 01, 02, 05, 09, 11, 12, 13 and 14 remained relatively stable across phases. However, it

should be noted that for three of these subjects (O1, O2, and O3) the peer-mediated strategies included only the joint task activities and social reinforcement as other classroom programming demands precluded the possibility of training peers to socially initiate. Finally, it was noted that peers interacting with subject 10 demonstrated very minimal levels of social interaction behaviors, a pattern which remained relatively stable across time.

Figure 38
Rate of Social Behaviors:
Peers and Handicapped Child
Urban Program 01

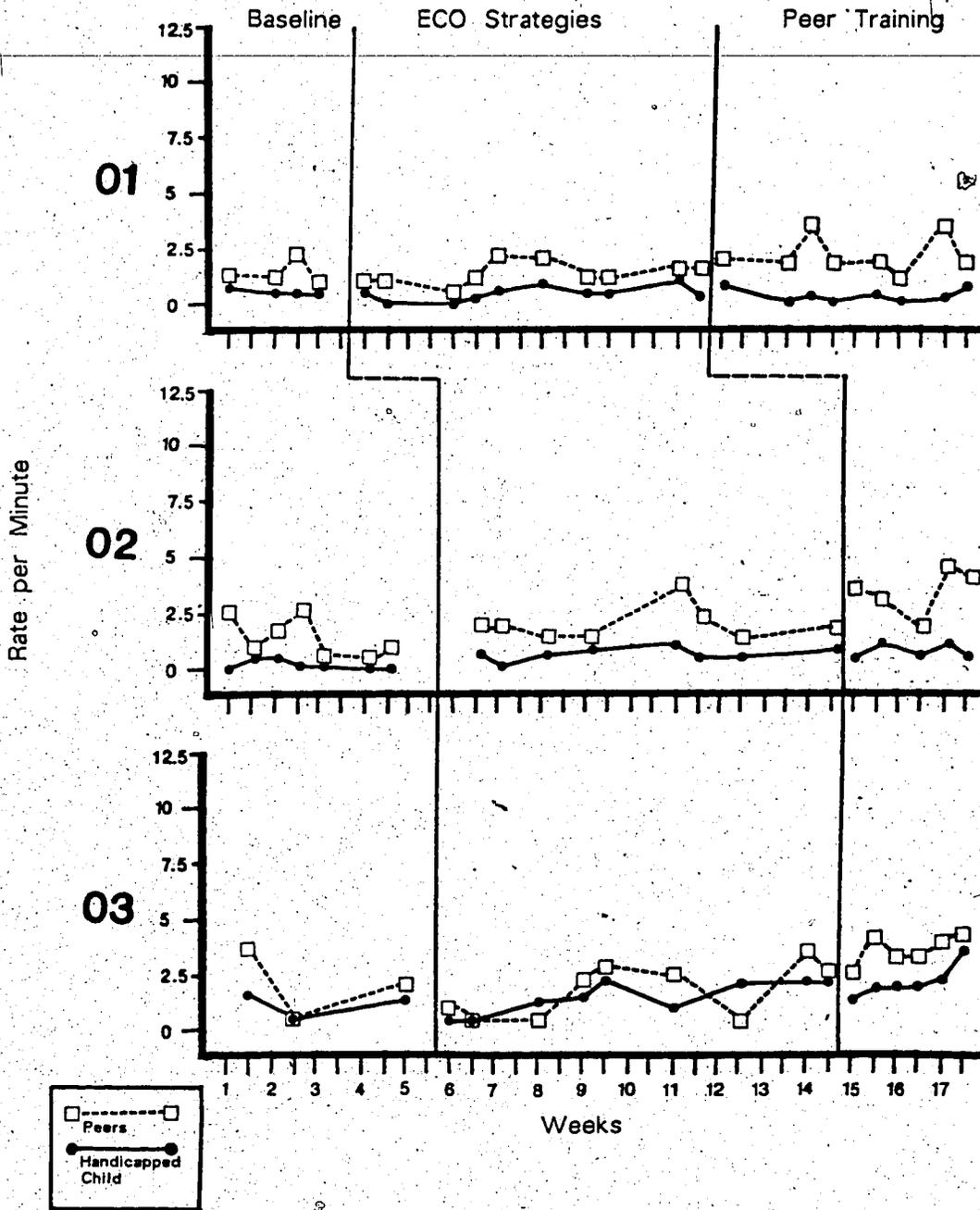


Figure 39
 Rate of Social Behaviors:
 Peers and Handicapped Child
 Urban Program 02

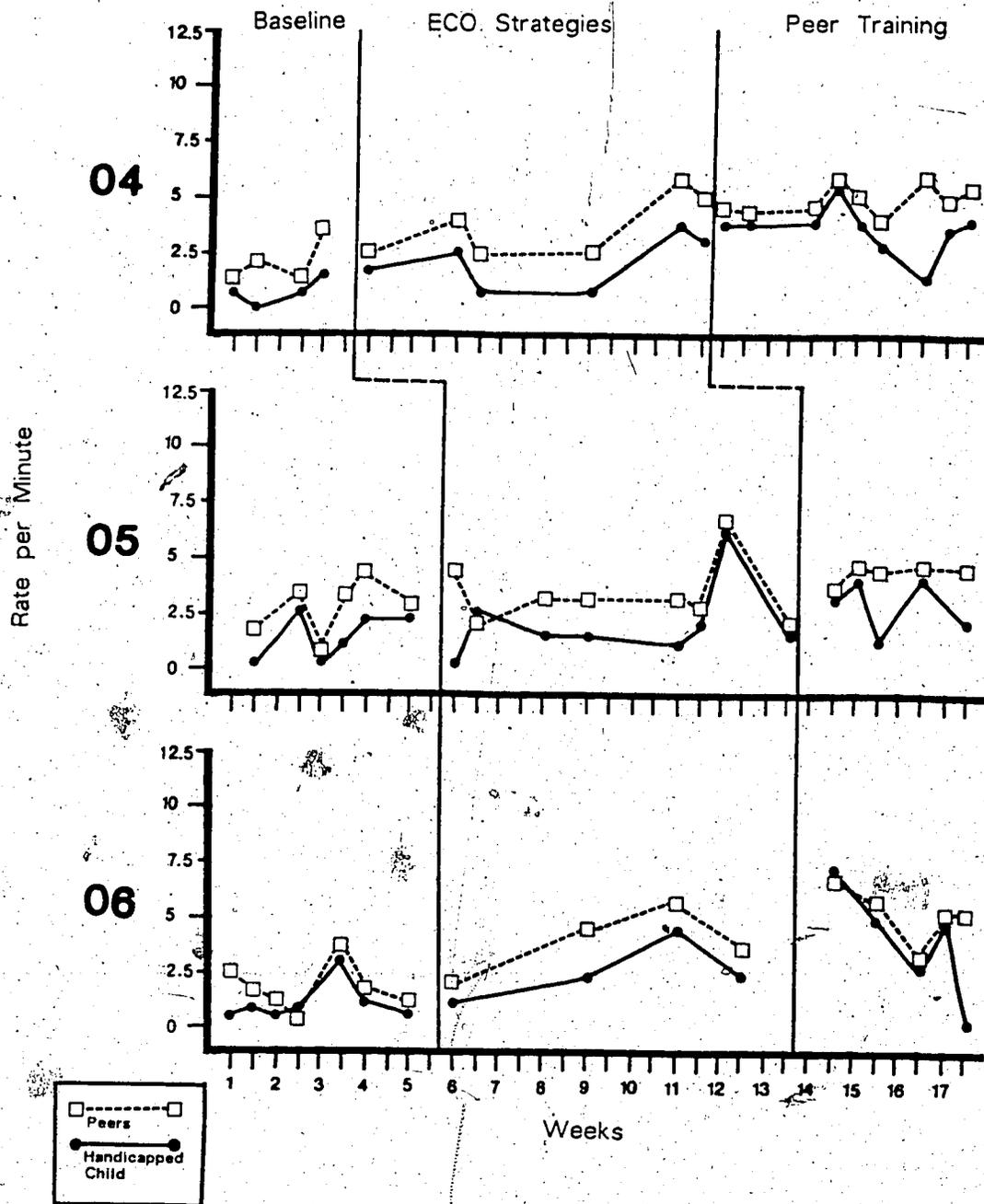


Figure 40
Rate of Social Behaviors:
Peers and Handicapped Child
Urban Program 03

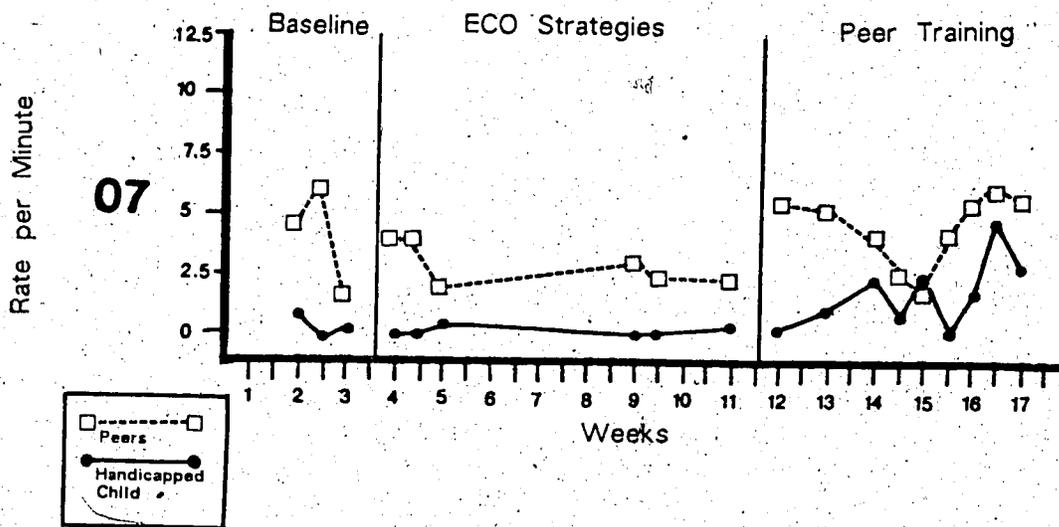


Figure 41
 Rate of Social Behaviors:
 Peers and Handicapped Child
 Rural Program 04

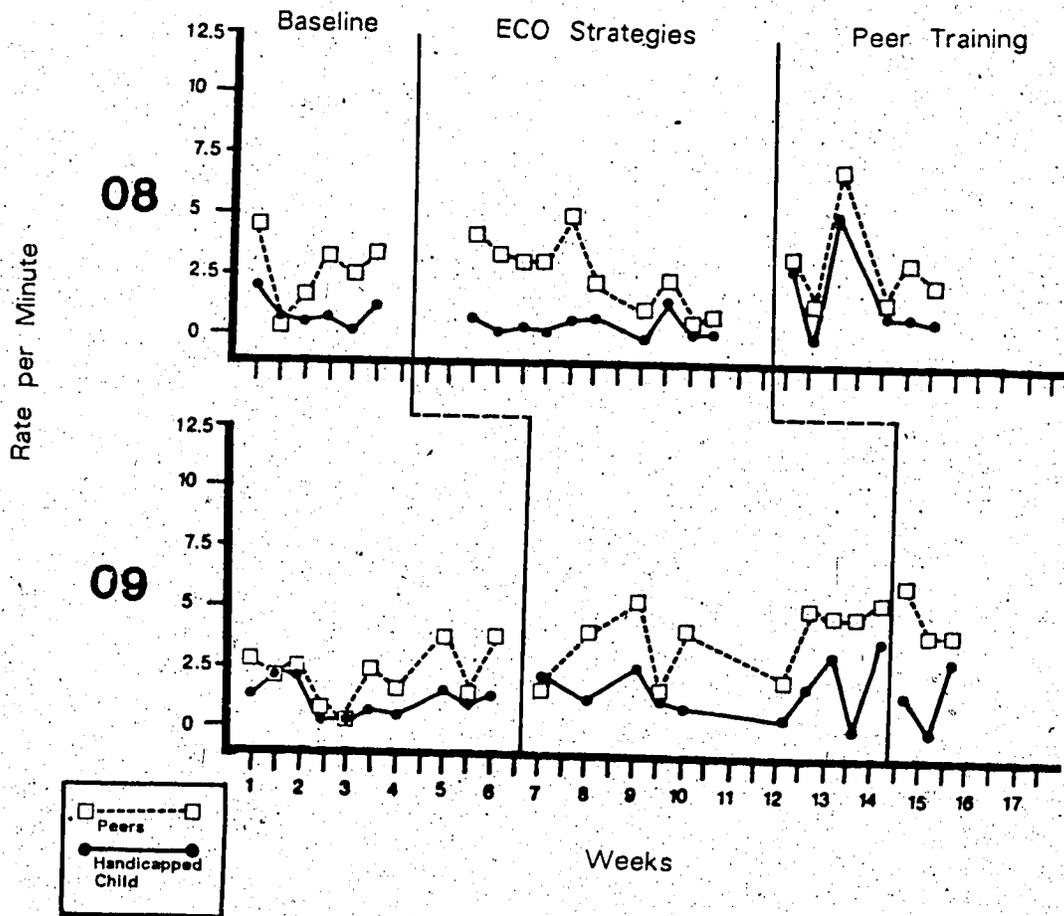


Figure 42
 Rate of Social Behaviors:
 Peers and Handicapped Child
 Rural Program 05

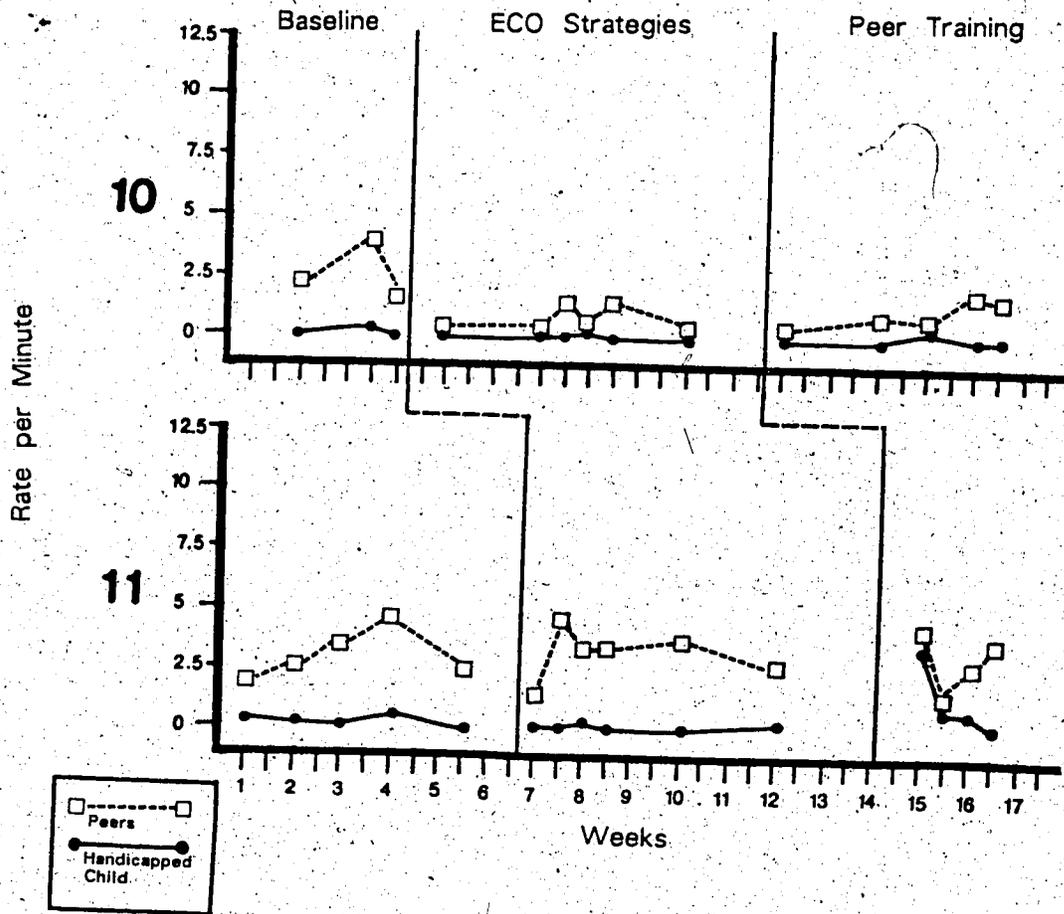


Figure 43
 Rate of Social Behaviors:
 Peers and Handicapped Child
 Rural Program 06

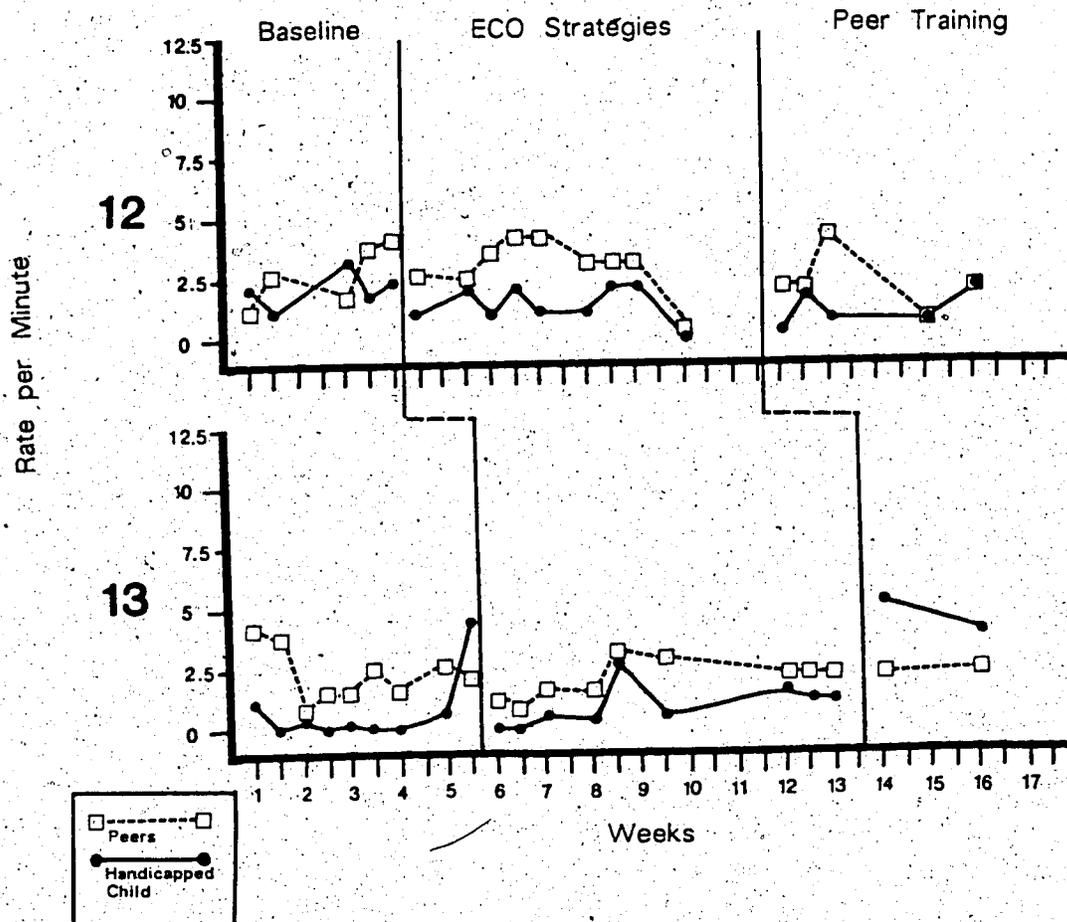
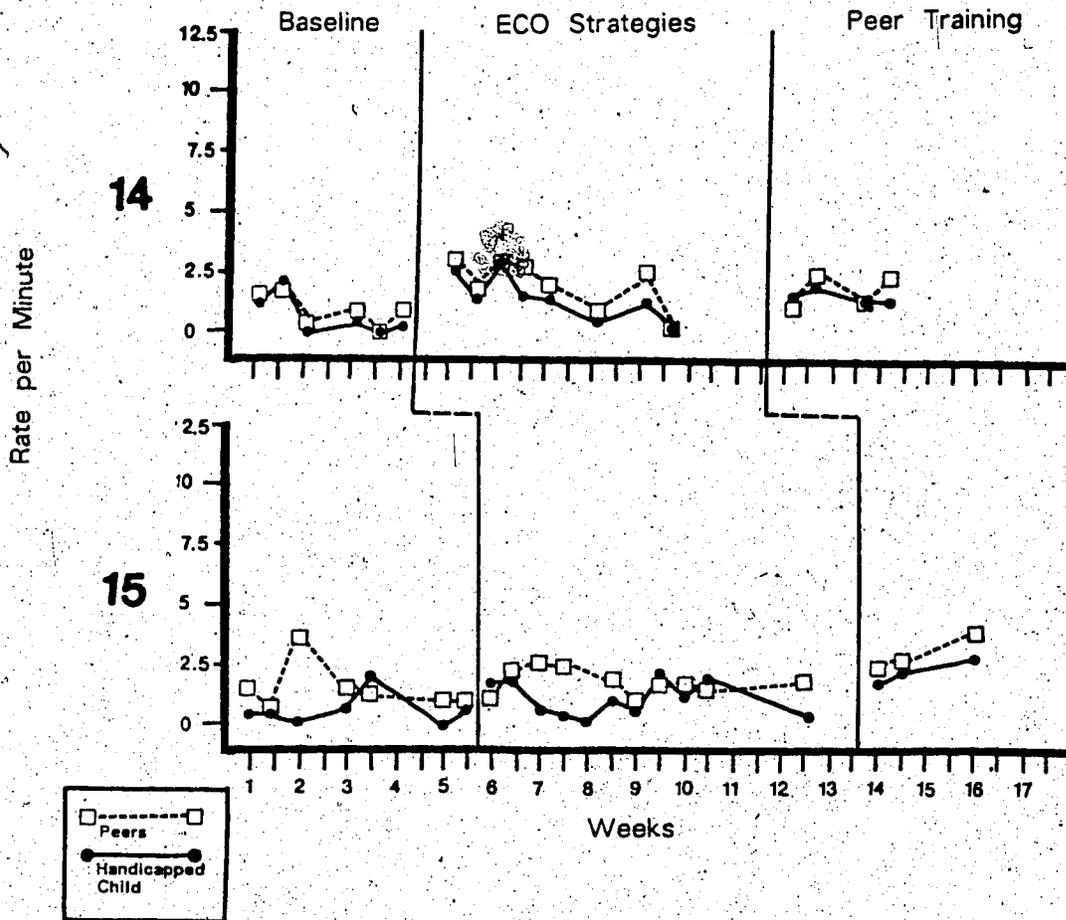


Figure 44
 Rate of Social Behaviors:
 Peers and Handicapped Child
 Rural Program 07



Research Question #5

As a result of training, was there a significant increase in the frequency of adult praise, which was contingent on social interaction between children outside the structured interaction episodes?

Unfortunately, the self recording of contingent social praise was found to be an inappropriate measure for use within kindergarten classrooms. Instructional staff generally found that the use of paper and pencil recording was inconvenient for them, as it required them to leave their students momentarily in order to complete the task. Since this was not always feasible, the staff reported that the collection of accurate data was not possible through use of this method. As a result, a number of centres, while continuing to use contingent praise, did not chose to employ the self-recording procedure. Those centres who agreed to continue monitoring this behavior reported that they believed the results obtained to be not representative of the behavior demonstrated in their classrooms. As a result, the data obtained for participating centres is presented, but caution should be exercised in the interpretation of the results.

In general, the data presented in Table 6 indicates a considerable degree of variability in the recorded use of the rate of contingent praise over the course of the peer-mediated treatment phase. As well, the rate of occurrence of this behavior recorded by staff in centres 06 and 07 demonstrated a decreasing trend over time. Staff members attributed this effect to the fact that the students were frequently taken on field trips during the last weeks of the study. As a result, the amount of time spent in the classroom setting was significantly reduced during this time, and the rate of occurrence of social reinforcement was not recorded during these outings.

Table 6

Contingent Social Praise: Rate per Week

Centre	Week:							
	10	11	12	13	14	15	16	17
01	---	---	---	---	---	---	---	---
02	---	---	---	---	---	---	---	---
03	---	---	---	---	---	---	---	---
04	---	---	---	---	---	---	---	---
05	---	---	---	---	---	---	---	---
06	---	---	30	34	36	15	21	---
07	---	---	25	6	27	18	45	---

Research Question #6

As a result of training, was there a significant increase in the rate of turntaking exchanges between the handicapped child and his/her nonhandicapped peers?

Visual analysis of the data presented in Figures 45 through 51 indicates that there is a general lack of consistency across subjects in the rate of occurrence of turntaking exchanges. It was demonstrated that subjects 03, 05, 07, 08, 09 and 15 exhibited an increase in the rate of turntaking exchanges following the implementation of treatment. Subjects 01, 02, 04, 06, 12 and 14 demonstrated minimal change in the rate of turntaking exchanges, as the level of behavior remained relatively stable across the baseline and treatment phases. Finally, it was noted that subjects 10, 11 and 13 were observed to engage in a very minimal level, or no turntaking exchanges with the nonhandicapped peers.

Figure 45
 Rate of Turntaking Exchanges:
 Peers and Handicapped Child
 Urban Program 01

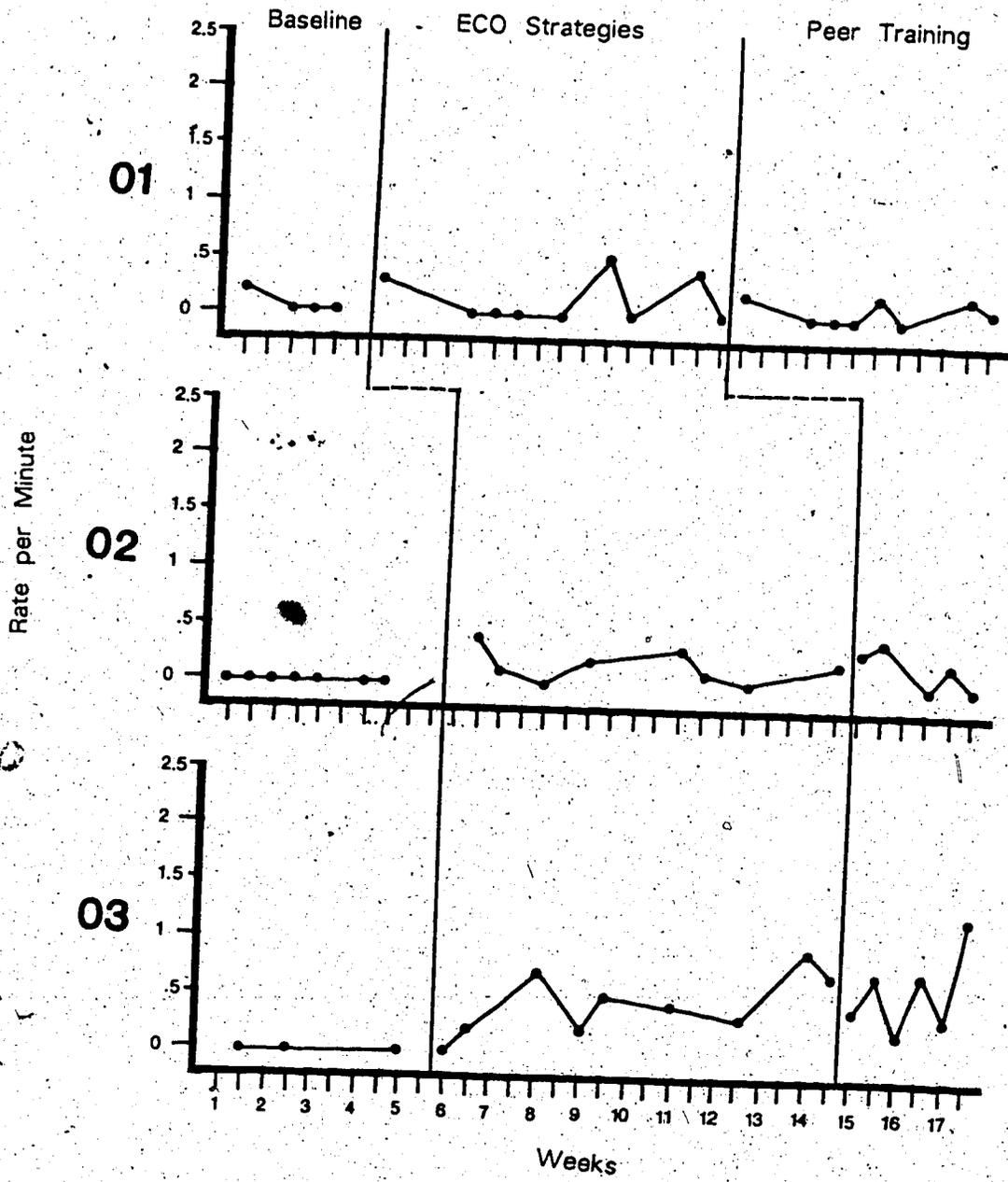


Figure 46
 Rate of Turntaking Exchanges:
 Peers and Handicapped Child
 Urban Program 02

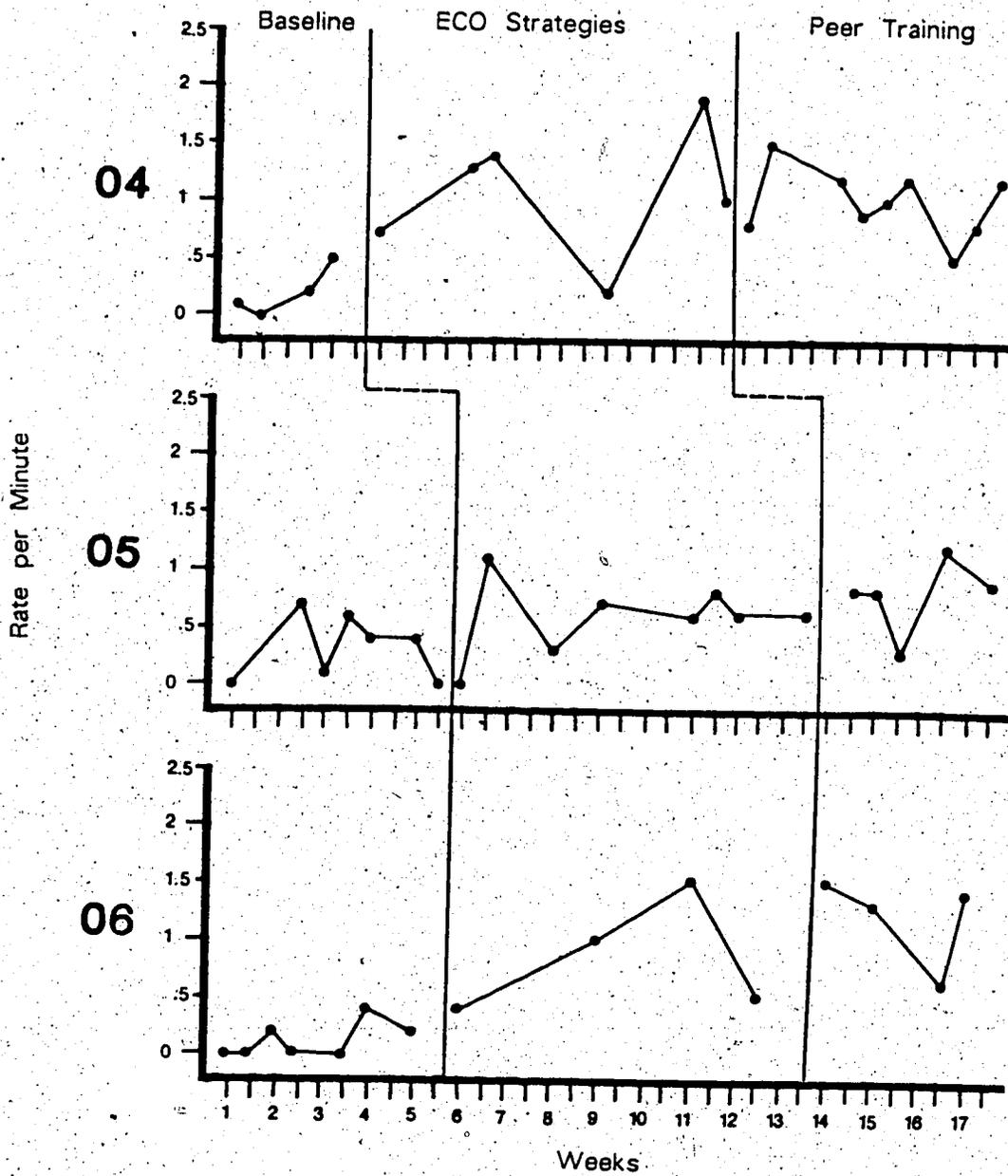


Figure 47
Rate of Turntaking Exchanges:
Peers and Handicapped Child
Urban Program 03

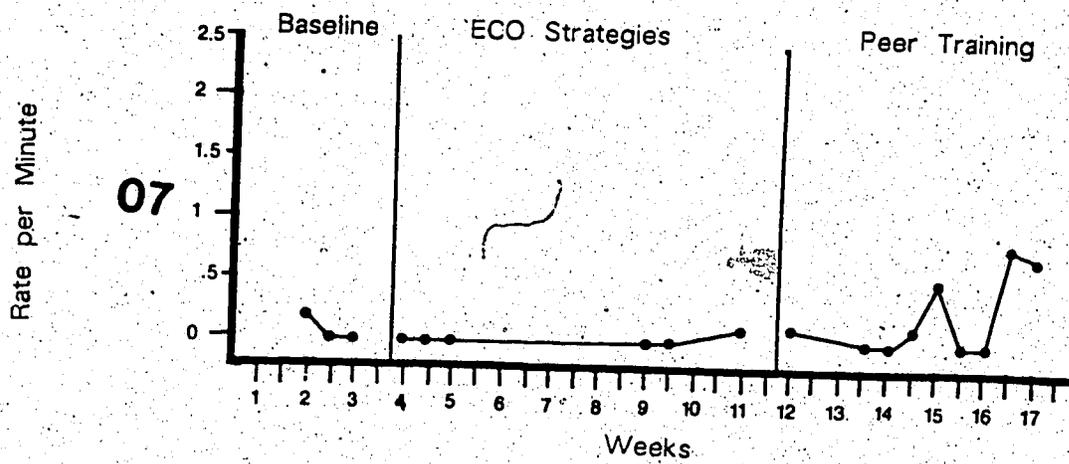


Figure 48
 Rate of Turntaking Exchanges:
 Peers and Handicapped Child
 Rural Program 04

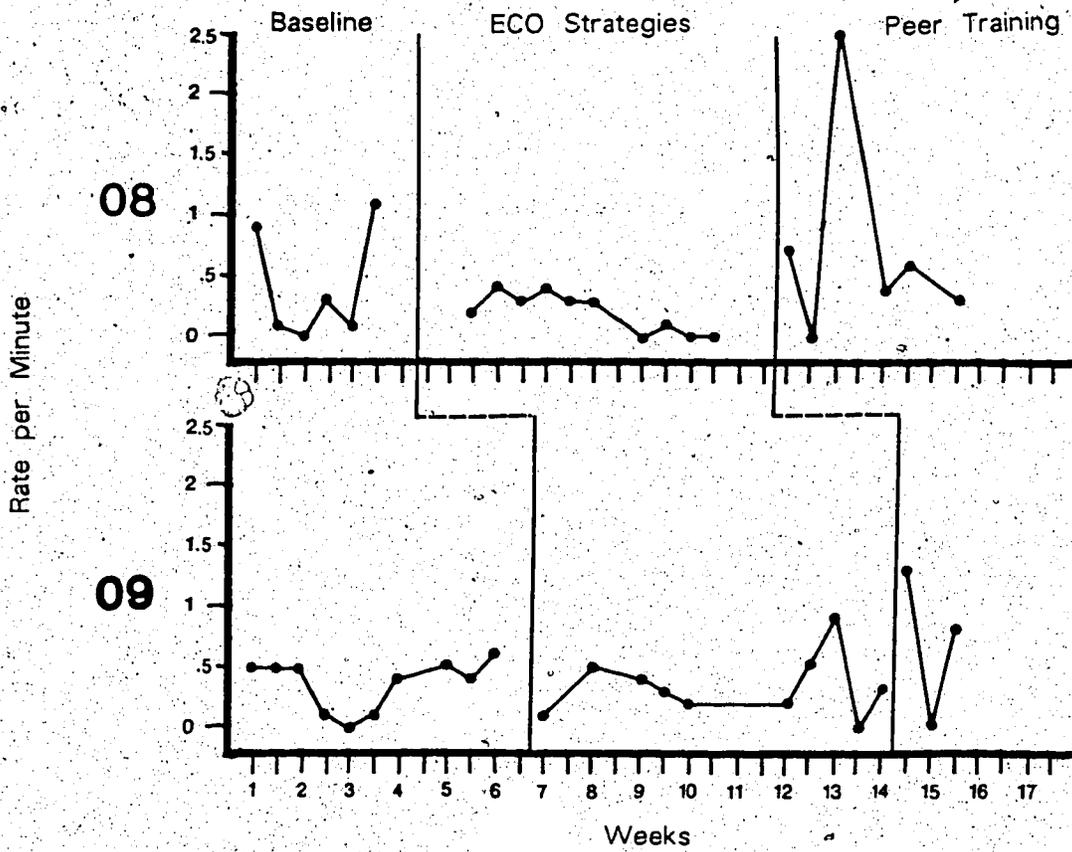


Figure 49
 Rate of Turntaking Exchanges:
 Peers and Handicapped Child
 Rural Program 05

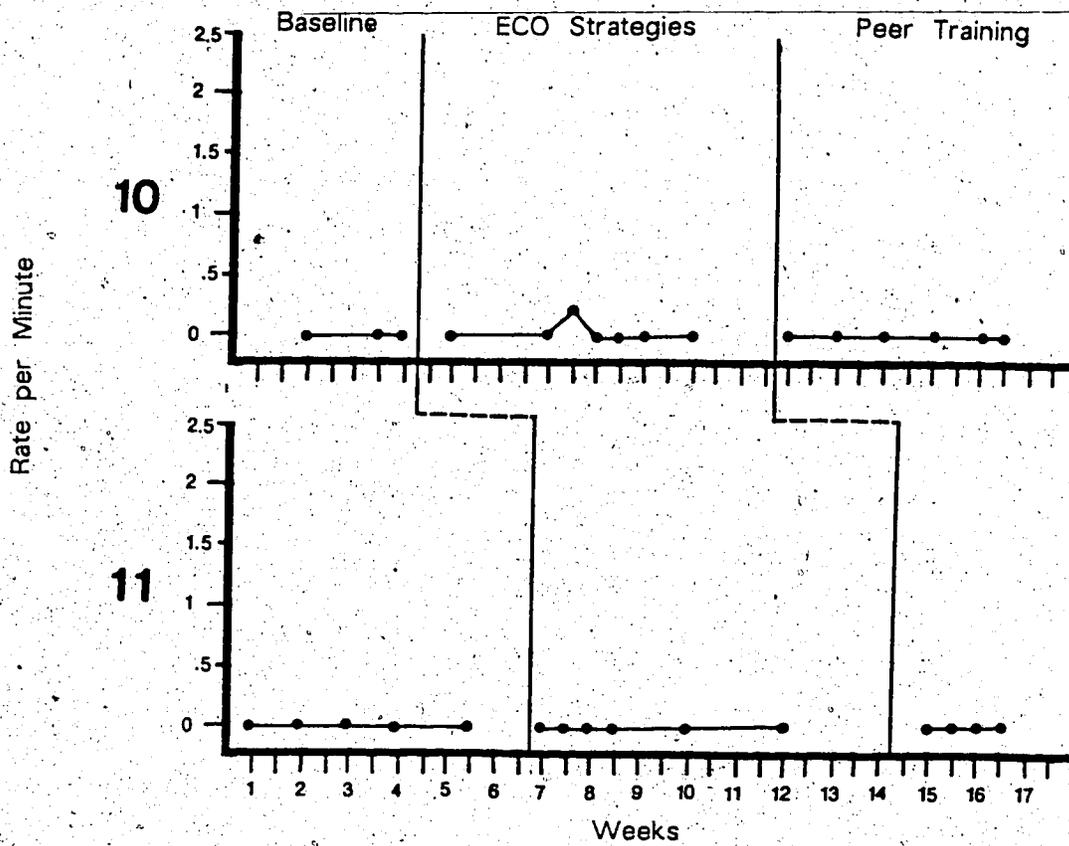


Figure 50
Rate of Turntaking Exchanges:
Peers and Handicapped Child
Rural Program 06

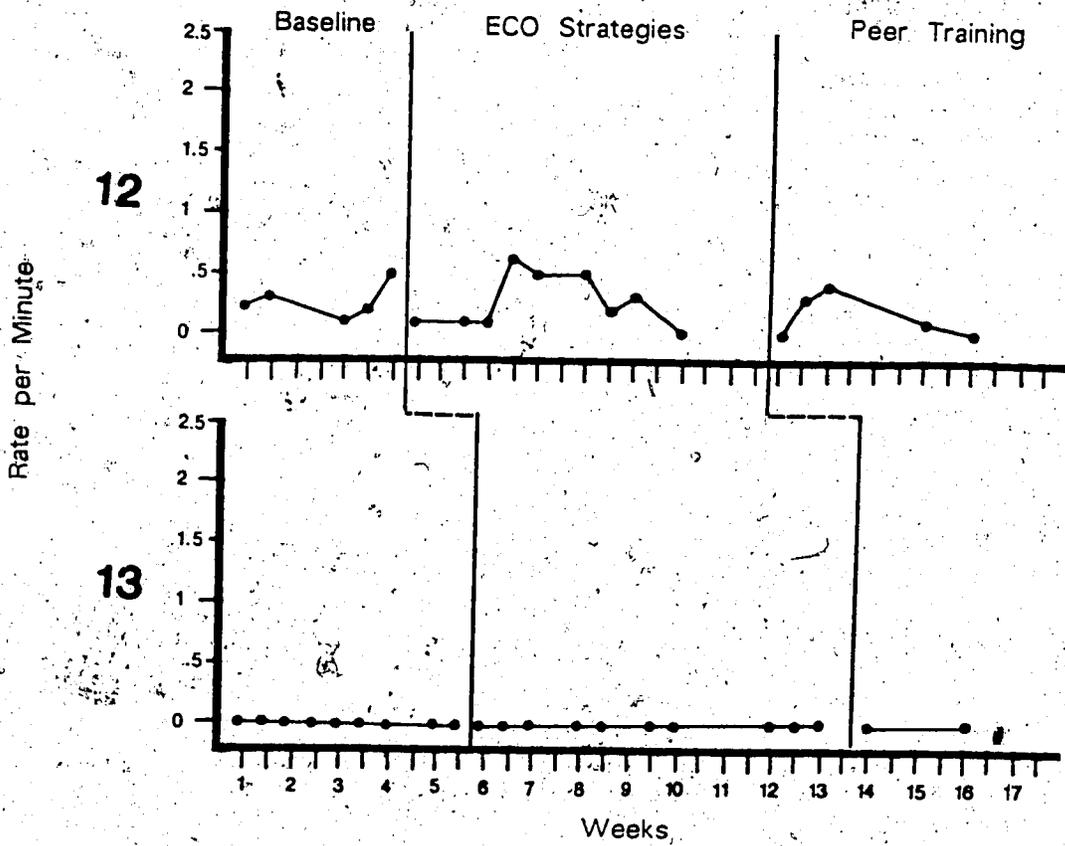
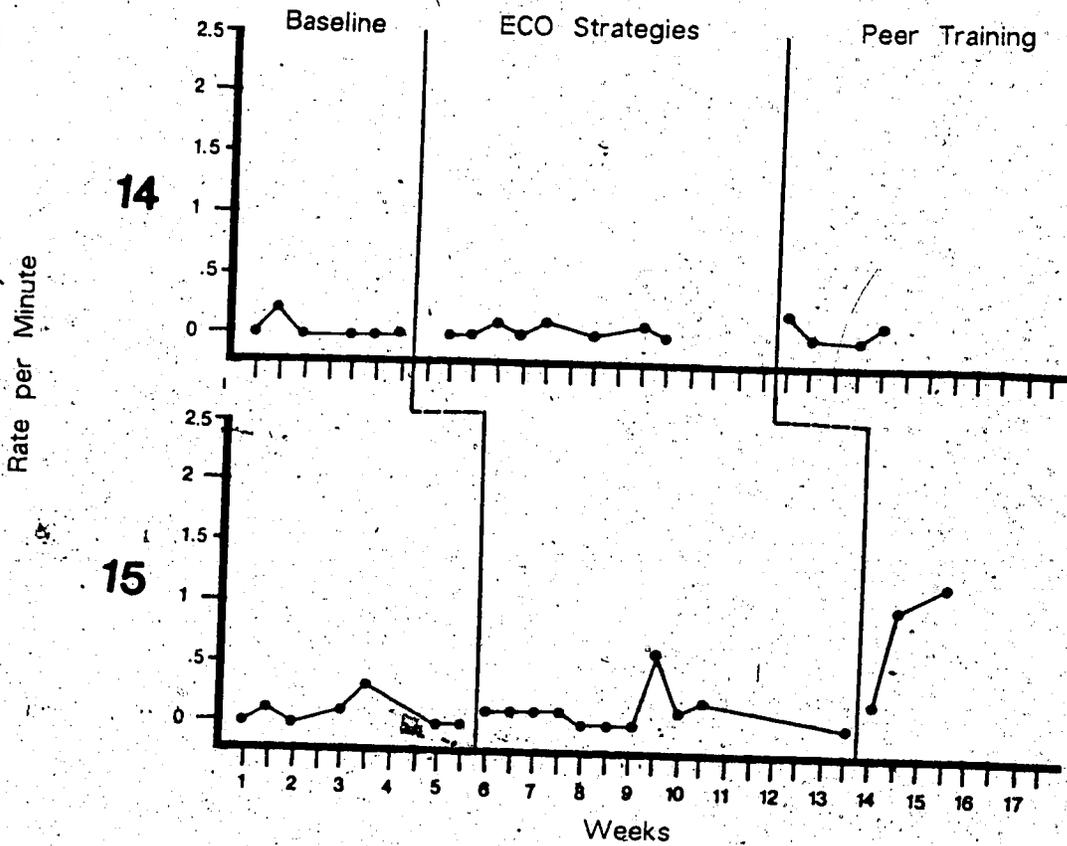


Figure 51
Rate of Turntaking Exchanges:
Peers and Handicapped Child
Rural Program 07



Research Question #7

As a result of training, was there a significant increase in the length of the turntaking exchanges between the handicapped child and his/her nonhandicapped peers?

As was demonstrated previously with the instructional staff, there was typically no significant upward trend in the length of the turntaking exchanges between the subjects and their peers across time (See Figures 52–57). The exchanges were typically brief and were maintained at a relatively stable level throughout the treatment phase. However, subjects 04 and 06 did demonstrate a moderate increase in length which was associated with the introduction of the peer mediated strategies.

Summary

In general, it was seen that there was a significant degree of variability seen across subjects in their response to the peer-mediated treatment. The interpretation of these results as well as the data obtained in the evaluation of the first inservice module will be discussed in Chapter Six.

Figure 52
 Length of Turntaking:
 Peers and Handicapped Child
 Urban Program 01

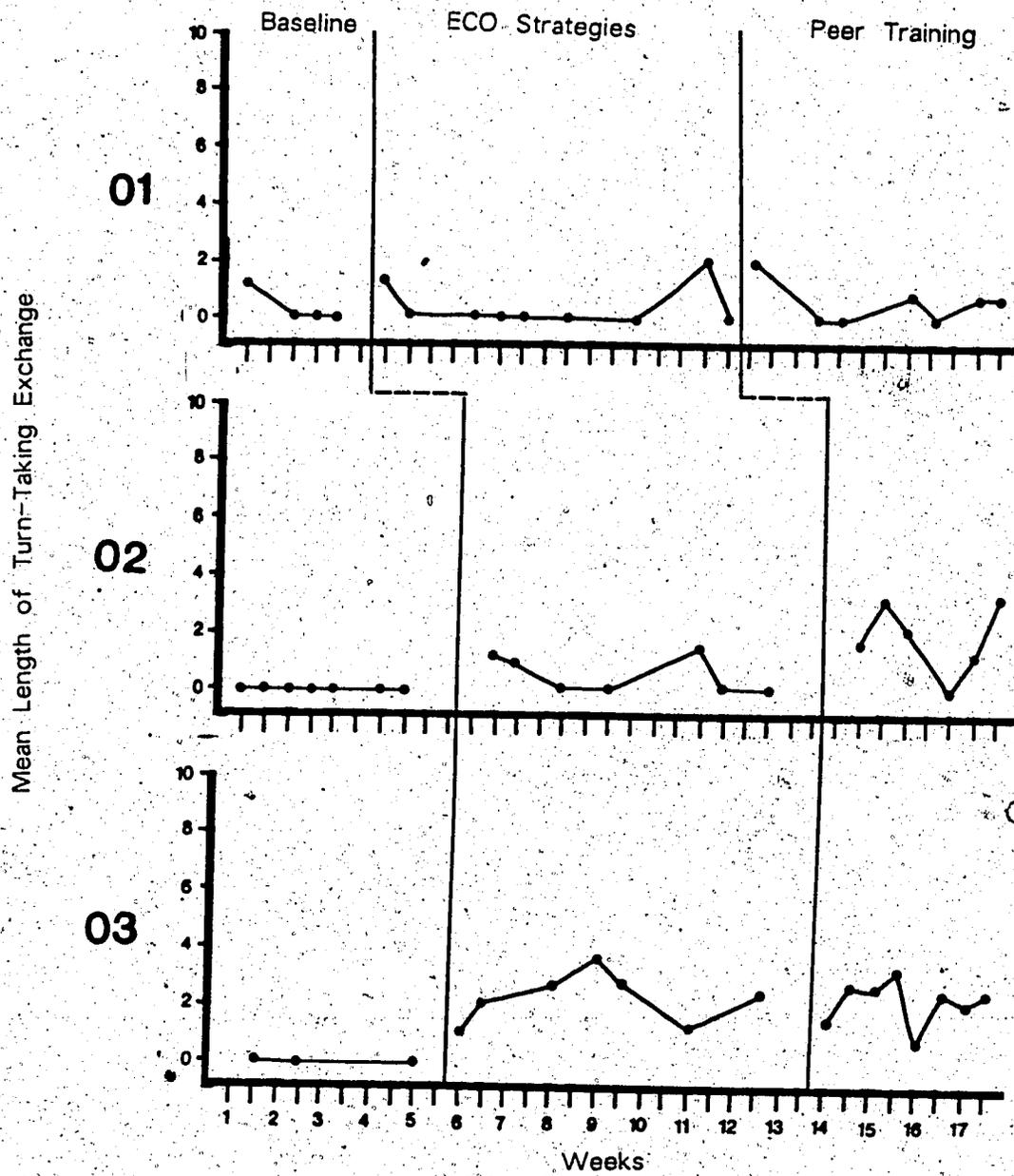


Figure 53
 Length of Turntaking:
 Peers and Handicapped Child
 Urban Program 02

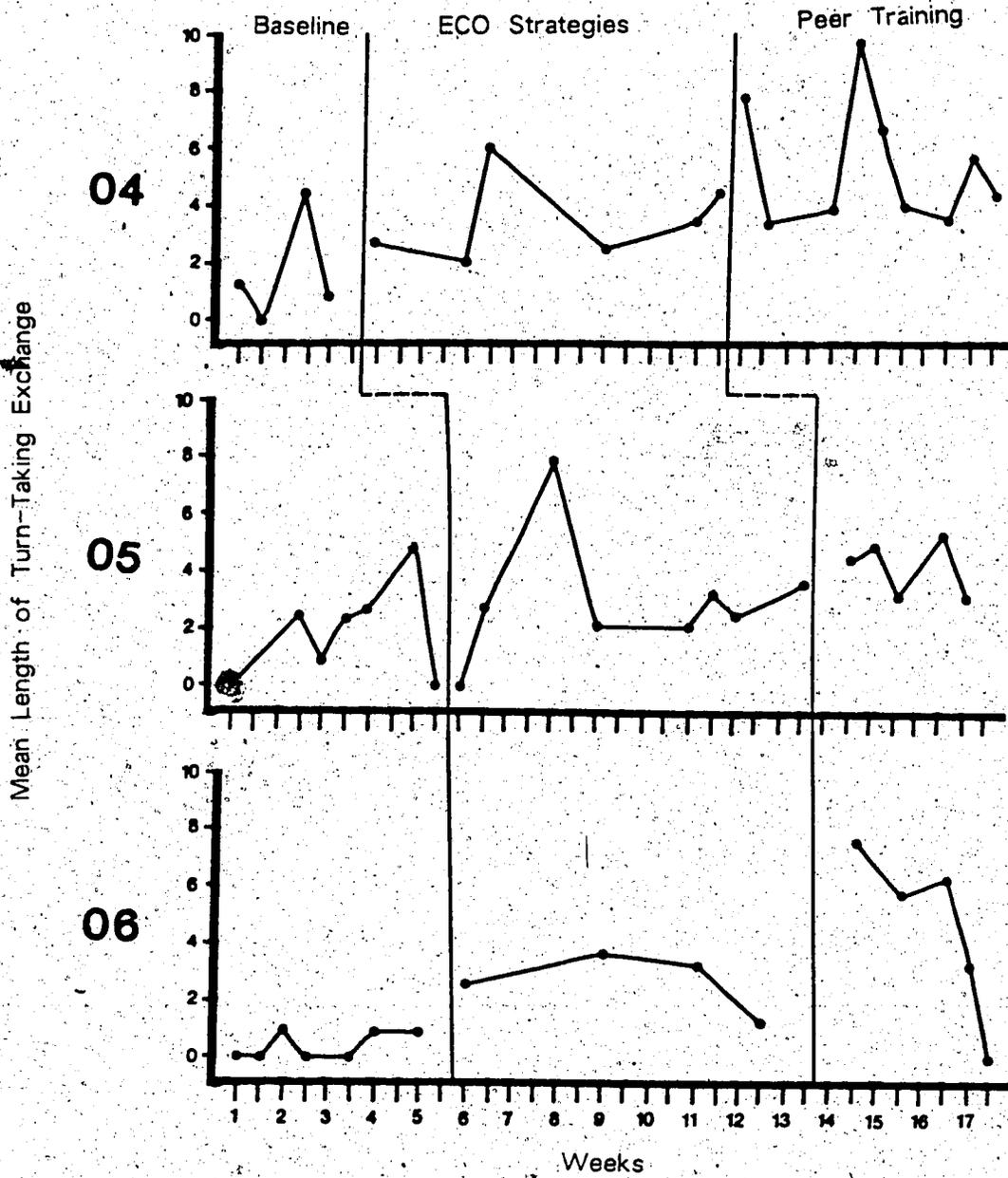


Figure 54
 Length of Turntaking:
 Peers and Handicapped Child
 Urban Program 03

Mean Length of Turn-Taking Exchange

07

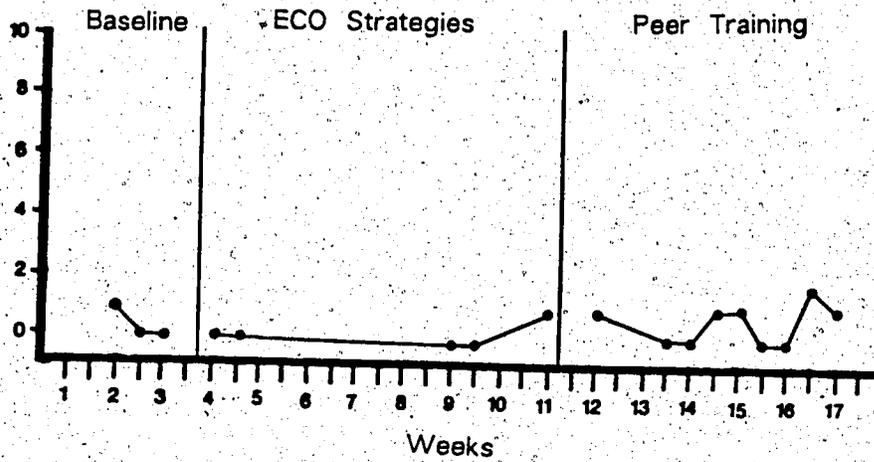


Figure 55
Length of Turntaking:
Peers and Handicapped Child
Rural Program 04

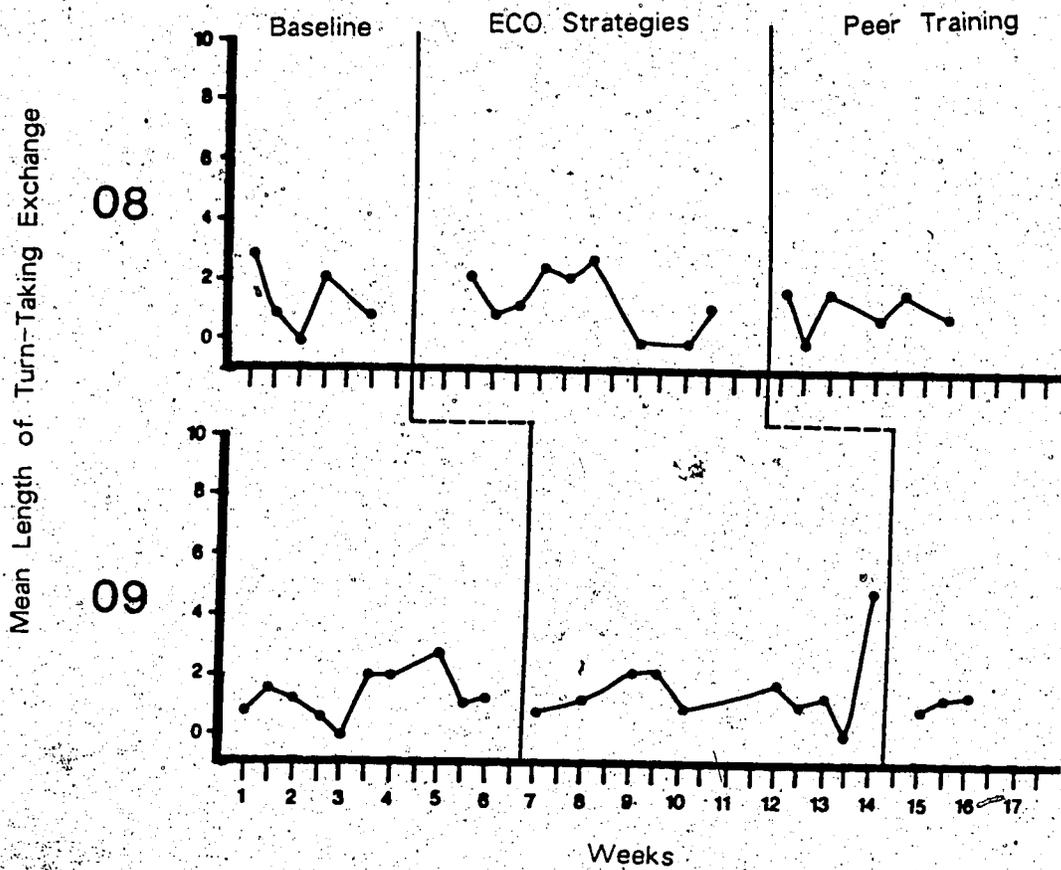


Figure 56
Length of Turntaking:
Peers and Handicapped Child
Rural Program 05

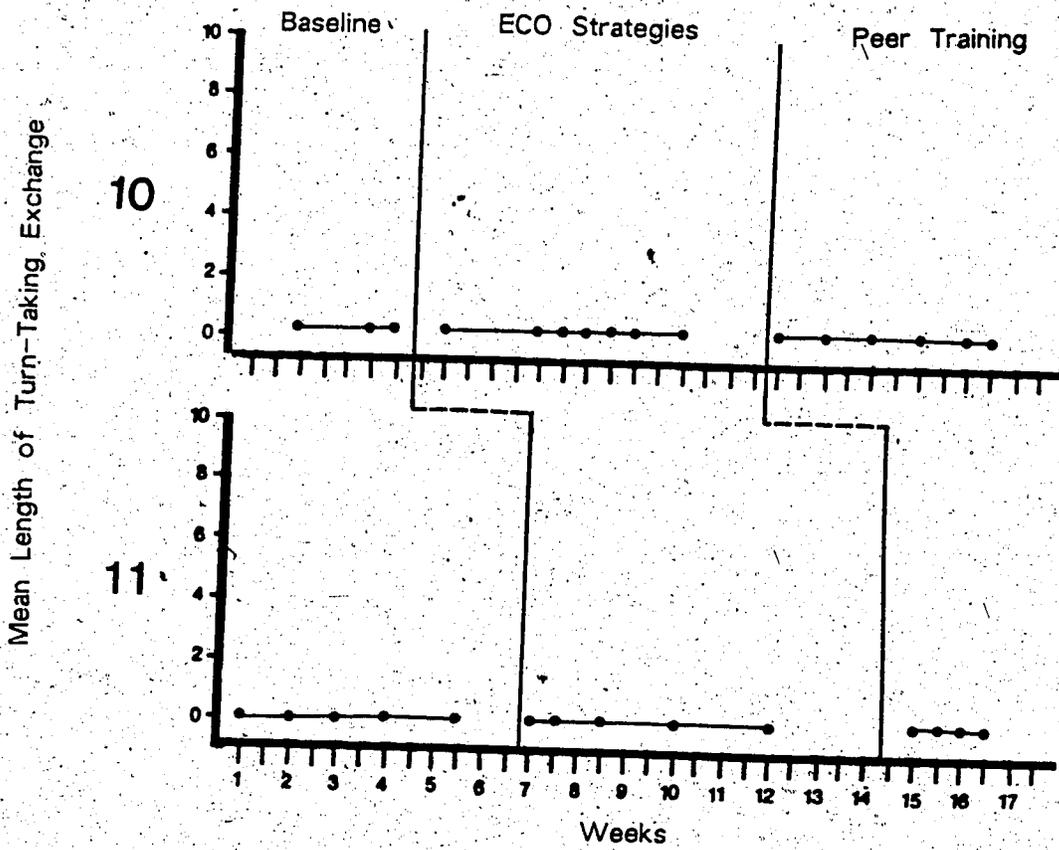


Figure 57
 Length of Turntaking:
 Peers and Handicapped Child
 Rural Program 06

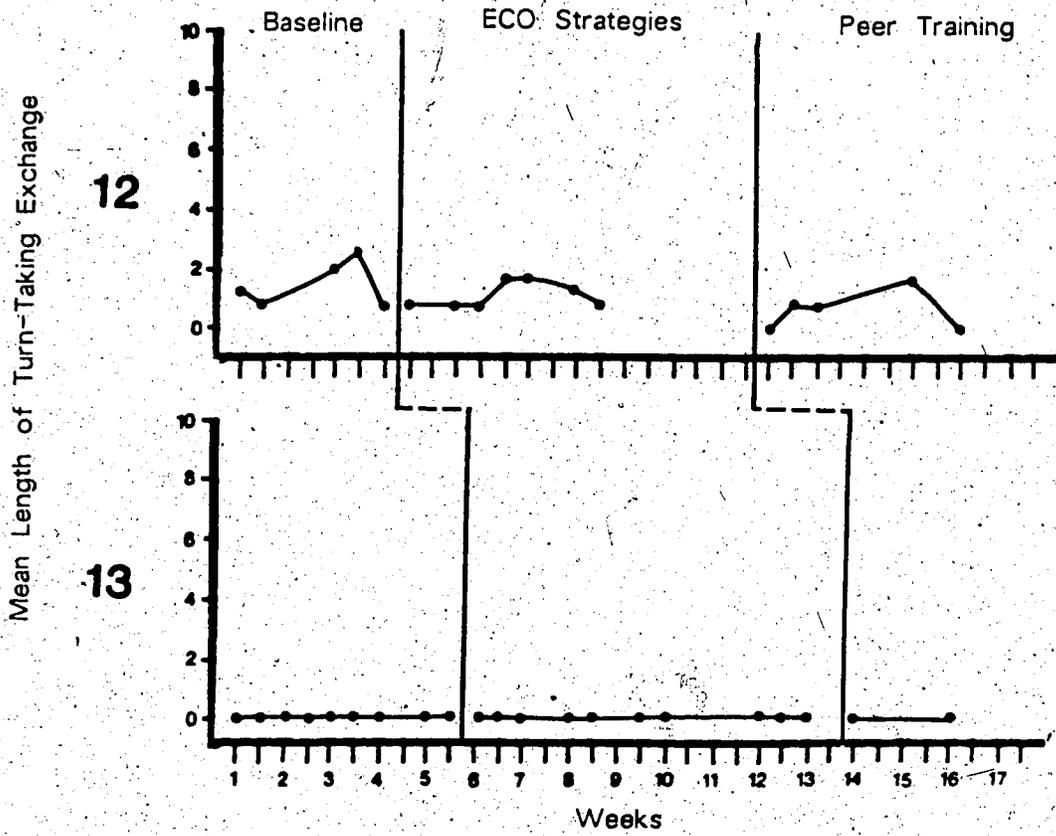
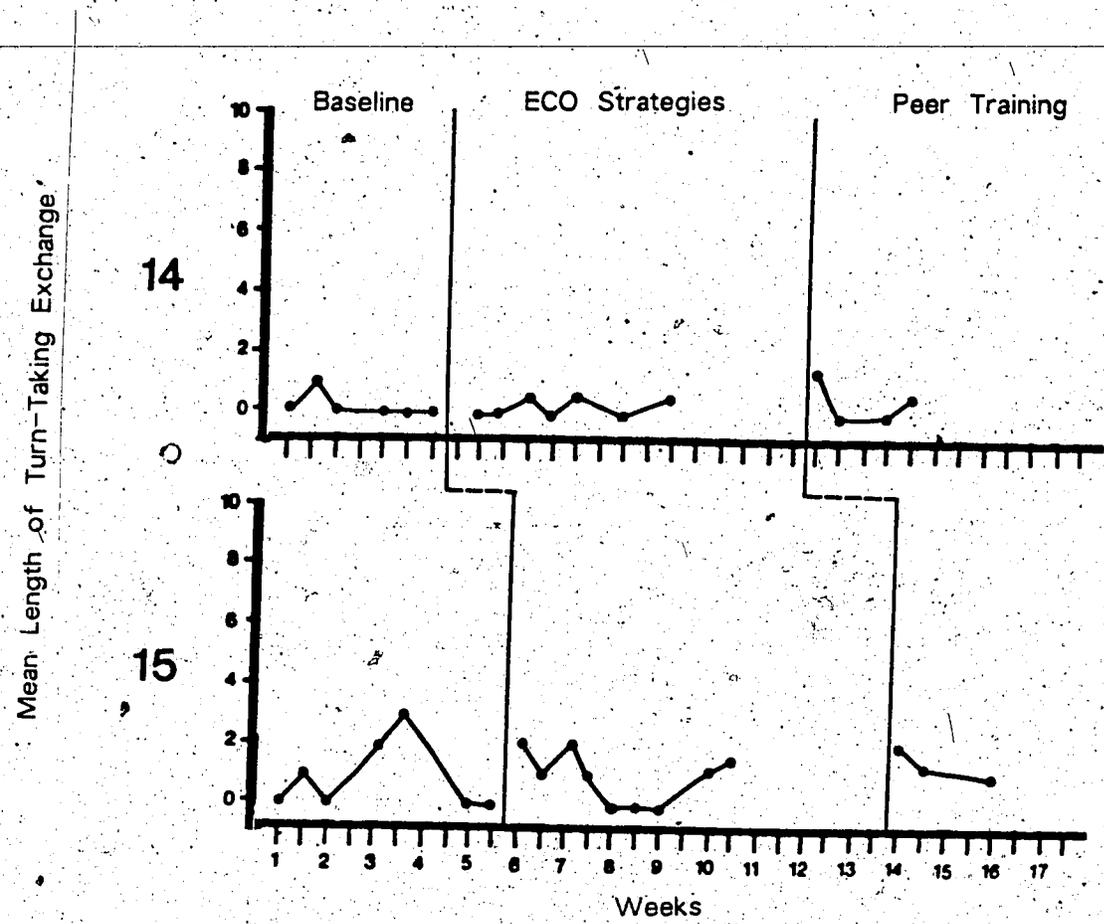


Figure 58
Length of Turntaking:
Peers and Handicapped Child
Rural Program 07



VI. Discussion

The following discussion will attempt to evaluate the specific effects of the two inservice modules. The differential results which occurred across subjects will be more closely scrutinized, and possible explanations for these effects will be suggested. However, it should be stressed that the explanatory hypotheses presented are tentative, as the characteristics of this research design precludes the possibility of making definitive statements concerning the differential results which occurred across subjects. That is, given the heterogeneity of the subjects and settings which were present in this investigation, it was not possible to identify which variable or combination of variables were responsible for the observed differences (Barlow, 1976). Therefore, this analysis will attempt to identify some of the possible significant variables which may have mediated the treatment effects, and as a result, the training procedures may be modified in order to best meet the needs of the staff, students and their teachers.

A. Inservice Module #1: Ecological Teaching Strategies

In general, the training of staff in the use of ecological teaching strategies (MacDonald, 1982) resulted in a significant increase in the rate of occurrence of turntaking exchanges between the staff and the handicapped children (See Figures 3 through 9). Training staff to initiate and maintain these exchanges has been stressed by MacDonald and Gillette (1982), who state that turntaking may be the "single most powerful tool in training language in that it sets up the essential interaction without which little socially useful language will emerge" (p. 9). The importance of training staff in the use of specific techniques to initiate and maintain a turntaking relationship with their students is underscored by research which indicates that handicapped children are often deficient in the acquisition of the elemental components of conversational turntaking (Vietze, Abernathy, Ashe, & Faulstich, 1978).

In general, it would appear that skills acquired by the staff through the inservice training resulted in a significant increase in the rate of turntaking exchanges which occurred between staff and the handicapped child in the classroom. Although the degree of impact on the rate of occurrence of this behavior varied, it was seen that for subjects 01, 02, 03, 04, 05, 06, 07, 08, 09, 11, 12 and 15, the implementation of the treatment

was reliably associated with an increase in the behavior at a level significantly above that demonstrated during the baseline phase. Additionally, instructional staff, when replying to a questionnaire concerning the strategies presented, consistently rated turntaking as one of the most useful skills presented to them at the workshops. Staff commented that "being aware of turntaking stops me from 'talking at' the students all the time" and that it "focuses my attention on allowing the child time to interact."

A closer analysis of the turntaking exchanges exhibited by this group of subjects indicated that typically the number of turns taken by both the handicapped child and the staff were closely matched (See Figures 17-23). This indicated that these turntaking exchanges were generally well balanced, with neither participant dominating the exchange. However, it was also noted that staff often demonstrated a slightly higher number of turns. This effect may have been a reflection of staff use of the ecological teaching strategies: i.e. the staff may have to use a signal and/or physical prompt following an initial interactive behavior in order to elicit a response from the child.

In addition, an analysis of the data over time indicated that where an increased rate of turntaking was observed, these increases were generally maintained across the treatment phase, and in some cases, an increasing upward trend was demonstrated (See Figures 3-9). This issue would appear to be particularly important, as it would appear axiomatic that inservice training should result in durable changes in the behavior patterns seen in the classroom (Kazden, 1980). It is possible that the use of verbal feedback coupled with social praise (i.e. Coissart et al, 1973) and the modeling of the target behaviors within the classroom setting (i.e. Watson & Uzzell, 1980) may have contributed to the maintenance of the newly acquired skills over time.

Unfortunately, although there was a moderate increase in the mean length of the turntaking exchanges associated with the implementation of the treatment, in general there was a considerable degree of variability in the data over time, and no trends were evident (See Figures 24-30). As a result, it is evident that the training procedures and/or follow-up visits should place more emphasis on the importance of extending the length of the turntaking exchanges. As pointed out by MacDonald (1982),

A primary goal in training is to extend the Turntaking length (TTL) of conversations across appropriate social contact purposes. Just as MLU is a reflection of increasing linguistic competence, (Brown, 1973) TTL may well

become an index of communicative competence (Sacks, et al. 1974; Schlegloff, 1973; Jefferson, 1972). (p. 22)

The failure to demonstrate an increase in the length of turntaking exchanges may be due, in part, to the inconsistent staff use of the ecological teaching strategies, signaling and prompting, seen for the majority of these subjects (See Figures 10-16). It is possible that the more consistent use of these strategies would facilitate staff attempts to maintain longer interactions with their students as a means of maximally facilitating language development (MacDonald & Gillette, 1982).

It was noted that two subjects, 13 and 14 demonstrated no response following the implementation of the treatment (See Figures 8 and 9). Although this lack of response can possibly be attributed to a failure of staff to generalize the trained strategies in the actual classroom settings, this argument is weakened by the fact that, in both cases, instructional staff had successfully developed and maintained a turntaking relationship with the second subject within the setting.

An analysis of subject characteristics reveals that both of the non-responsive subjects were functioning at a nonlinguistic mode of communication. In contrast, the majority of subjects for whom turntaking was demonstrated exhibited verbal behavior, using either single words or phrases as their dominant mode of communication. Therefore, it is possible that staff had greater difficulty matching the nonlinguistic mode of communication in order to establish a turntaking relationship. This conclusion is further supported by the data reported for the third subject (10) who also functioned at a nonlinguistic level (See Figure 7). While there was an abrupt change in the rate of turntaking behavior demonstrated after the implementation of the treatment, the effects rapidly diminished, and no further turntaking exchanges were observed.

Given the lack of success demonstrated with students functioning at a nonlinguistic level, it would appear that more emphasis should be placed on training staff to consider random perlocutionary behaviors as potential targets for training. As pointed out by MacDonald and Gillette (1982), a child need not "intend" to send a message in order for it to be interpreted as a communicative behavior. For example:

...a child may rattle her crib and her mother may take that behavior as meaning "I want out", even though careful observation would show that the child was just

playing. This mother's interpretations are one big step in teaching the child that those behaviors can communicate. (MacDonald & Gillette, 1982, p. 28).

Unfortunately, the examples of nonlinguistic behaviors provided for the staff during the inservice training generally were those behaviors which are conventionally accepted as having a communicative meaning: i.e. shaking head "no" or pointing "I want it" (See Appendix A).

If staff fail to consider these prelocutionary behaviors as a target for training, they will miss the child's first step in developing communication, which arises out of random movements and play (Bates, 1976). It is important that these earlier actions be strengthened if the child is to develop the nonverbal communication system necessary for the development of speech and language. It appears that the staff should be instructed more specifically on how to transform random behaviors into communicative acts, by showing the child that the behavior has a communicative effect (MacDonald & Gillette, 1982).

In addition, it was noted that, contrary to expectations, staff use of the imitation strategy was minimal (See Figures 10-16). Although some of the non-linguistic subjects engaged in turntaking despite the absence of the imitation, it is possible that this strategy may have been particularly useful for those staff working with the subjects who did not respond to treatment. Not only would imitation have assisted the staff in matching the communicative modes of the student, this strategy has also been suggested as being useful for initiating and maintaining turntaking exchanges. As pointed out by MacDonald and Gillette (1982):

To naturally train the child to attend to others, adults may need to become "childlike" (not childish) and follow the child's lead. An easy way to get into the child's world is to imitate what he does; this lets him know that his behaviors are having communicative effects on others. (p. 82).

Finally, the lack of response exhibited by subjects 13 and 14 also indicates that, in some cases, staff have difficulty generalizing the newly acquired strategies across children who exhibit different patterns of communicative behaviors (See Figures 8 and 9). This issue would appear to be particularly important as staff will predictably encounter a number of students in future classrooms for whom implementation of the inservice strategies would be appropriate. Therefore, it is suggested that while inservice training should necessarily focus on the strategies which are particularly suited to the students

with whom staff are currently working, caution must be exercised so that staff are made aware of how these strategies can be used with students exhibiting different patterns of communicative behavior.

Summary

In general, it would appear that this inservice module was an effective means of training staff in the use of the ecological teaching strategies. In most cases, it appeared that the newly acquired skills were successfully demonstrated to the classroom, as evidenced by the observed change in staff behaviors. Additionally, the implementation of the strategies was associated with a significant change in child behaviors for a majority of the subjects under investigation.

However, minimal treatment effect which was seen for subject 10, 11, 13 and 14 indicates that more attention should be paid to the specific teacher needs as they relate to the unique characteristics demonstrated by target children. In particular, it would appear that staff have difficulty initiating and maintaining turntaking interactions with children functioning at a nonlinguistic level of communication. However, rather than delimiting the range of material presented to such staff members during training, which may restrict the staff's ability to generalize the strategies across students exhibiting different levels of functioning, it is recommended that more guidance be provided during the follow-up visits to facilitate generalization.

B. Inservice Module #2: Use of Peers to Facilitate Social Interactions.

As noted in the previous chapter, there was a general lack of consistency in the behavior patterns demonstrated in response to the treatment across subjects. The following discussion will consider each of the research questions in the order in which they were presented in the previous chapter, and tentative hypotheses concerning the differential treatment effects will be presented.

In general, visual analysis of the observational data reveals that the majority of the students under study demonstrated a moderate increase in the rate of social initiations following the implementation of the treatment. These results were consistent with those obtained by Strain and his colleagues (Strain & Kerr, 1981), who have demonstrated that

peer initiation training is often associated with increased levels of social initiations exhibited by the handicapped child. Additionally, many staff members, replying to a questionnaire often noted that the handicapped children appeared to be "more eager to interact" and often "approached other children independently, for the first time."

However, it was noted that subject 10 demonstrated initiation behavior during only one of the observation sessions over the entire length of the investigation (See Figure 35).

As well, subjects 05, 08 and 09 exhibited a relatively stable level of behavior across time, with no significant change following the implementation of the treatment (See Figures 32 and 34).

The lack of treatment effect demonstrated for subject 10 could possibly be mediated of the following factors. First, this subject was totally non-mobile and functioned at a nonlinguistic level of communication, as a result of cerebral palsy. It was not possible for this subject to approach his peers independently, or initiate interactions through verbal means. Further, an analysis of the rate of initiations and the total number of interactive behaviors directed towards this subject by the nonhandicapped peers indicates that a very minimal level of contact was demonstrated across all phases of the investigation. Therefore, the subject did not appear to have the opportunity to initiate social interactions with the nonhandicapped peers within the classroom.

These results obtained for this subject are also generally consistent with those obtained by Strain et al. (1977). It was found that children who exhibited severe language delays demonstrated no increase in the level of social initiations as a result of peer social initiation training. However, it should be noted that verbal deficiencies were not consistently associated with a depressed level of social initiations. Subjects 11 and 13, both of whom were functioning at a pre-verbal level of communication, demonstrated a moderate increase in the rate of initiations during the treatment phases (See Figures 35 and 36). It would appear that these subjects were initiating social interactions through the use of motor-gestural or vocal communicative behaviors.

The rate of social initiations directed towards the subjects typically increased following the implementation of the peer-mediated treatment. However there was considerable overlap in the measures across phases for several subjects (01, 04, 06, 11, 12, 14, 15) which makes it difficult to clearly establish the presence of a treatment effect.

(See Figure 31, 32, 35, 36, & 37). It should be noted that typically, the rate of initiations stabilized following the implementation of the peer-mediated treatment. Therefore, while the treatment did not produce a significant change in the level of behavior over the baseline phase, it was often associated with a more stable rate of behaviors. This would indicate that the subjects were receiving social initiations from their peers on a more consistent basis during the treatment phase.

As well, it should be noted that the lack of a pronounced increasing trend in the rate of social initiations emitted by the handicapped peers during the treatment phase is generally consistent with the results obtained by Hendrickson et al. (1982). This study found that as the amount of social interaction between the nonhandicapped peers and handicapped children increased over the course of the study, the actual level of social initiations did not increase, and in some cases demonstrated a decreasing trend. However, these authors concluded that the use of the frequency measure did not accurately reflect the treatment effects. That is, as the children engaged social interactions of increasing duration, the necessity for initiation behaviors is decreased. Therefore, although the rate of initiation behaviors did not show an upward trend over time, the treatment was observed to have a positive impact on the social behavior of the subjects (Hendrickson et al., 1982).

Therefore, it would appear that an analysis of the total number of interactive behaviors exhibited by the subjects and their nonhandicapped peers may provide a more accurate portrayal of the effects of the peer mediated treatment. In general, visual analysis of the observational data indicates that the peers interacting with subjects 03, 06, 07, 08, and 15 demonstrated an increased level of occurrence of social behavior following the introduction of the treatment, and in most cases this increase was maintained at a stable rate or demonstrated an increasing upward trend during the treatment phase (See Figures 38, 39, 40, 41, and 44). Therefore, it would appear that for these subjects, the peer mediated treatment did facilitate the increased social interaction between the handicapped children and their nonhandicapped peers in the classroom setting.

Peers interacting with subjects 01, 02, 05, 09, 11, 12, 13 and 14 typically demonstrated considerable variability in behavior across phases, and a significant degree of overlap was seen between the baseline and treatment phases (See Figures 38, 39, 40,

41, 42, 43, and 44). As a result, it is not possible to make any definitive conclusions concerning the treatment effects. It should be noted that subjects enrolled in Urban Centre 01 (01, 02) only participated in the joint task activities and social reinforcement components of the inservice module, as other classroom programming demands precluded the possibility of training peers to socially initiate. It would therefore appear to be possible that for some children a significant degree of increase in social interaction behaviors can be attributed to the social initiation training component of the training package. However, this conclusion is tentative, as the third subject in the program (03) did demonstrate a significant increase in the level of social behavior.

The differential treatment effects which were demonstrated across subjects in this study indicates that there is a need for a more fine grained analysis of the subject characteristics prior to the selection of the appropriate treatment procedures. As pointed out by Gresham (1981) it may be necessary to first assess the type of social skill difficulty exhibited by the target child, and then remediate through the use of the appropriate strategy.

For example, Gresham (1981) has suggested that social skill difficulties may arise as a result of either a) skill deficits, b) performance deficits or c) self-control deficits. It is further suggested that the training techniques used should vary as a function of the observed deficit. Skill deficits can be remediated through the use of modeling or coaching techniques, performance deficits treated through the manipulation of antecedent and consequent events, and self-control deficits can be remediated by using cognitive behavior modification techniques i.e. verbal mediation (Gresham, 1981).

The final component of the inservice training, use of contingent social praise, was evaluated through the use of a self-recording procedure. As previously outlined, staff within a number of centers found that the use of a paper and pencil recording procedure was simply not feasible within the kindergarten setting. These staff members chose not to use this strategy, as they found it to be very inconvenient, and disruptive of the normal class procedures.

Staff members who agreed to continue self-monitoring generally reported that the results indicated did not truly reflect the rate of social reinforcement for social interaction which was demonstrated in the classroom. It was typically seen that the numerous other

demands placed on the staff within the classroom setting often prevented the immediate recording of the data. Staff often reported that they tried to "remember" incidences of social reinforcement, so that the rate of behavior could be later recorded. However, it is clear that this procedure could not possibly result in reliable measures. Further, it should be noted that no procedure (i.e. use of independent observers) was used in order to evaluate the reliability and accuracy of the self-recording procedures. As a result the data which was presented must be cautiously interpreted.

Given that the use of pencil and paper self-recording procedures appear to be inappropriate for this population, alternate methods of obtaining an accurate count of staff behaviors must be investigated, with an eye towards facilitating the ease of use and the accessibility of the selected technique. One example would include the use of small wrist counters (Lindsley, 1968) which have been demonstrated to be a relatively economical, convenient and unobtrusive measure of treatment effects. Additionally such counters produce the cumulative frequency of the targeted behavior, which facilitates the charting of the behavior across time (Thoreson & Mahoney, 1974). As well, it has been demonstrated that the accuracy of self-recording can be enhanced through the use of verbal reinforcement (Lipinski, Black, Nelson & Ciminero, 1975).

The final two research questions posed in this investigation were not directly related to the objectives of the inservice, but rather sought to determine the degree of mode-matched turntaking behavior which occurred between the handicapped child and his/her nonhandicapped peers, as well as investigating the length of the exchanges which were obtained.

In general, it was seen that approximately half of the subjects demonstrated an increased level of turntaking exchanges following the implementation of the treatment (See Figures 45-5.1). These results were consistent with those obtained by Guralnick and Paul-Brown (1977), who have shown that nonhandicapped four year olds demonstrate significant adjustments in their speech as a function of the developmental level of the receiving partner.

However, as previously demonstrated with the instructional staff, the analysis of the subject characteristics of those not exhibiting turntaking behaviors typically reveals that these subjects (10, 11, and 13) were functioning at a prelinguistic level of communication.

Therefore, while it would appear that subjects who exhibit some level of verbal behavior have a higher probability of engaging in social interactions with peers who will adjust their mode of communication to match that of the handicapped child. This phenomenon occurring within the social interaction should result in the maximal facilitation of communicative competence (MacDonald, 1982). On the other hand, handicapped children functioning at a pre-linguistic level may be receiving communicative input which he/she is unable to understand and/or respond to (MacDonald & Gillette, 1982).

Summary

The analysis of the treatment effects associated with implementation of the peer-mediated strategies reveals a considerable lack of consistency across subjects. While approximately half of the subjects demonstrate very positive responses to the treatment variables, little or no reliable treatment effect was demonstrated for the remaining subjects. Although the heterogeneity of the subjects and settings preclude the possibility of making any definitive conclusions concerning the differential treatment effects, some possible suggestions concerning relevant mediating variables have been presented. However, it is clear that additional research is needed in order to evaluate the importance of these variables.

C. Conclusion:

It is clear that the placement of handicapped children into regular preschool settings has become an increasingly popular educational alternative in the last decade. However, although little substantive empirical evidence is currently available concerning the efficacy of integrated programs, it has become increasingly evident that the mere physical placement of a handicapped child in a regular program is a very complex process. In fact, evidence exists which suggests that, in the absence of systematic planning and preparation, the presence of a handicapped child in a regular program can result in effects which are entirely counterproductive to the goals of integration.

As a result, researchers paid increasing attention to delineating specific factors which appear to facilitate the effective integration of a handicapped child into a regular preschool program (i.e. Guralnick, 1981, Kysela & Barros, 1983). There appears to be a

general consensus that the skills and competencies of the instructional staff are a critical factor in successful integrated programs. Staff must have the ability to both meet the unique educational needs of the child as well as facilitate maximal temporal, social and instructional integration.

Unfortunately, it has been demonstrated that the majority of the teachers currently working in integrated settings do not feel that they have the skills necessary to meet the unique needs of their students (Kysela & Barros, 1983). As a result, the provision of some type of systematic training program for those currently working in the field would appear to be critically important. This study has evaluated the effects of two inservice modules which were developed in an attempt to train staff in the necessary competencies to 1) facilitate the development of handicapped child's communicative abilities, and 2) the use of peers as therapeutic agents to facilitate social interaction between the handicapped and their nonhandicapped peers.

The analysis of the naturalistic observational data gathered over the seventeen week period indicated that generally, the training of staff in the use of the ecological teaching strategies (MacDonald, 1982) resulted in significant changes in the staff and child behavior as well as in the interaction and conversations occurring between them. However, it was noted that some of the subjects under investigation demonstrated minimal levels of response to the implementation of the strategies. While the characteristics of the research design precludes the possibility of making any definitive statements concerning variables which may have mediated the treatment effects, some tentative suggestions concerning potentially relevant variables were presented.

The analysis of the treatment effects demonstrated following the introduction of the peer mediated strategies which were presented in the second inservice module indicated that there was a significant degree of variability across subjects. While approximately half of the subjects demonstrated very positive effects as a result of the treatment, the remaining subjects did not show a reliable change in behavior following the introduction of the peer mediated strategies. Again the attempt was made to identify potentially relevant variables which may have mediated the treatment effects, but it is clear that continued research is needed in order to facilitate the development of a social skill training package which would have more consistent effects across subjects.

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