

Active and Passive Task Related Behavior, Direction Following and the Inclusion of Children with Disabilities

Coral Kemp and Mark Carter
Macquarie University Special Education Centre

Abstract: The relationship between specific classroom skills and long-term inclusion of children with primarily intellectual disabilities in regular classrooms was examined. Measures of on-task behavior and direction following behavior were collected for 19 children with disabilities who had been integrated for 1.5 to 5.5 years in general education classrooms. Data were collected concurrently on teacher nominated average peers in each classroom of children with disabilities. These data were compared with similar data collected on children with disabilities in their first year of school (kindergarten) to see whether the classroom skills of these children changed in relation to their peers. On-task behavior during whole class instruction and direction following behavior was problematic for children with disabilities. There was also preliminary evidence that some classroom skills may be associated with more successful inclusion. There was no evidence of an increasing discrepancy between children with intellectual disabilities and peers in relation to classroom skills. Implications of these findings for including children with disabilities in general education classrooms are discussed.

Successful inclusion of children with intellectual disabilities in general education classrooms is regarded by many as an important outcome of an early intervention program (see, e.g., Ashman & Elkins, 1998; Conn-Powers, Ross-Allen, & Holburn, 1990; Hains, Fowler, & Chandler, 1988). It has been acknowledged that the skills needed for children to be included in preschool programs are different to those required for success once these children move into the formal school system (Carta, Atwater, Schwartz, & Miller, 1990; Conn-Powers et al.; Rosenkoetter, Hains, & Fowler, 1994; Rule, Fiechtel, & Innocenti, 1990). One major difference between the two environments is that formal school classrooms require children to learn and to function independently in larger instructional groups (Conn-Powers et al.; Hains et al.; Rosenkoetter et al.; Salisbury & Vincent, 1990). Children's ability to remain on task and their skill in following directions have been identified as classroom skills that may be of particular importance in assisting them to

function in larger groups (Carta et al.; Chadwick & Kemp, 2000; Foulks & Morrow, 1989; Hains, Fowler, Schwartz, Kottwitz, & Rosenkoetter, 1989; Kemp & Carter, 2005; Rice & O'Brien, 1990).

Classroom skills are a particular focus for teachers in the first year of schooling (Carta et al., 1990; Chadwick & Kemp, 2000; Green & Kemp, 1998; Johnson, Gallagher, Cook, & Wong, 1995; Rice & O'Brien, 1990). Researchers investigating skills needed for kindergarten placements have generally supported the necessity for children who are to be included in general education classes to have skills to participate in groups (Carta et al.; Conn-Powers et al., 1990; Rule et al., 1990; Salisbury & Vincent, 1990) work independently (Carta et al.; Johnson et al.; Salisbury & Vincent, 1990), follow teacher directions, (Foulks & Morrow, 1989; Hains et al., 1988, 1989; Rice & O'Brien; Rule et al.), follow classroom routines (Carta et al.; Conn-Powers et al.) and use a variety of materials (Rule et al.).

Surveys of kindergarten teachers over the last two decades have identified skills that are thought to be critical classroom survival skills. A survey by Foulks and Morrow (1989) found that kindergarten teachers valued such skills as flexibility in adjusting to different instructional situations, participating in group in-

Correspondence concerning this article should be addressed to Coral Kemp, Macquarie University Special Education Centre, Macquarie University, Sydney AUSTRALIA, 2109. Email: coral.kemp@speced.sed.mq.edu.au

struction and using classroom equipment appropriately. An Australian study by Chadwick and Kemp (2000) surveyed teachers (655) of all identified students with disabilities in the state department of education in New South Wales in 1997. In 250 returns received, teachers ranked (a) toilets independently, (b) separates easily from parents, (c) follows instructions given by the teacher, and (d) follows simple rules and classroom procedures with reminders at the top of 22 skills listed. Being on task for short periods of time was ranked 7th by these teachers. Kemp and Carter (2005) surveyed 34 kindergarten teachers who were including children with mild to severe intellectual disabilities in their general education classrooms. Of 13 listed skills, including skills relating to communication, social behavior, self-help and early academics, these teachers listed the top skills as (a) following teacher directions, (b) toileting independently, (c) obeying classroom rules, and (d) staying on-task for short periods of time.

Another approach to identifying skills needed in a general education kindergarten environment has been to observe kindergarten classrooms in order to determine skills necessary for meeting the demands placed on children in those classrooms (Carta et al., 1990; Rule et al., 1990; Walter & Vincent, 1982). Findings from researchers using this approach have supported findings of survey research that children included in general education kindergarten classrooms need to have the skills to participate in groups, work independently and follow teacher directions.

While there may be a change in emphasis to academic skills in subsequent years, some of these classroom skills, such as on-task behavior, undoubtedly remain important to learning and possibly to the perceived success of inclusion. Classroom skills may also be important to the long-term success of inclusive placements. Certainly, on-task behavior has been associated with increased learning (Brophy & Good, 1986; Greenwood, 1991; Rosenshine & Stevens, 1986; Ysseldyke, Christenson, Thurlow, & Skiba, 1987) and has been used as an independent variable in research that has investigated the efficacy of inclusion, especially for students who have moderate to severe levels of intellectual disability (see, e.g., Halvorsen & Sailor, 1990; Hollowood, Salisbury, Rainforth, & Palombaro, 1994; Kemp &

Carter, 2000; Logan & Malone, 1998; Salisbury et al., 1994).

The issue of the relationship between classroom skills and success of inclusion, however, remains relatively unexplored. Few studies have actually compared classroom skills of children with other measures of success of inclusive placements such as teacher perception of success. Also, measures of on-task behavior have not always distinguished between active and passive on- and off-task behavior. Kemp and Carter (2005) examined the classroom skills of children with intellectual disabilities included in regular kindergarten classes and found that there was a weak relationship between the direct measure of on-task skills of children with disabilities in kindergarten classrooms and their teachers' perceptions of those skills. Similar findings were reported in an earlier study by Walter and Vincent (1982). One reason for this discrepancy may be that teachers are not aware of the level of on-task behavior of students when off-task behavior is of a passive nature (i.e., does not draw attention to the child). On the other hand where active on- and, in particular, off-task behavior are frequently observed in children, it is likely to be more memorable and perceptions of the child as compliant or disruptive are likely to develop.

Data reported in the current study were part of a larger project examining the transition and inclusion of children with intellectual disabilities (see Kemp, 2003; Kemp & Carter, 2005, 2002, 2000). In the present study, data are reported that relate to classroom skills and perceived success of inclusion of children with intellectual disabilities, who had been enrolled in general education classes for between 1.5 and 5.5 years. This permitted an examination of some factors that might have contributed to success of the inclusion, specifically task-related and direction following behavior. It also enabled an examination of the relationship between measures of aspects of the transition and early inclusion of these children (see Kemp & Carter, 2000) and subsequent measures collected on the inclusive placement. Of particular interest was the relationship between level of success of the transition of children with intellectual disabilities from early intervention to general education kindergarten classes and success of

the long-term inclusion. Specific questions addressed were:

1. How did the classroom skills (task-related behavior and following directions) of the children with disabilities compare with those of average children?
2. Were children considered by their teachers to be more successfully integrated likely to perform differently in relation to classroom skills?
3. Did the discrepancy between children with intellectual disabilities and their average peers change from the initial measure (kindergarten) to the subsequent measure?
4. Was there a relationship between kindergarten measures of classroom skills and later perceptions of success?

Method

Subjects and Settings

Children with intellectual disabilities. Thirty-two children with intellectual disabilities and one child with a severe language disability moved from a university-based inclusive preschool program into general education classes

(32 into kindergarten classes and one into a year 1 class). Of children who were still enrolled full-time in general education classes in July 1999, 19 were in state schools (one of these in Victoria), four in catholic schools and three in independent schools. Families of 22 children, included in general education classrooms in Sydney, agreed for observational data to be collected on their children. Schools of 19 of these agreed to measures of classroom skills being collected. Details of children who participated are provided in Table 1, including subject code, year child entered kindergarten, age at beginning of study, his/her grade/class placement, and level of intellectual disability reported by independent psychologists when children were enrolled in the inclusive preschool program and any known subsequent reclassification provided by either the school counselor or private psychologist (in parentheses). Mean age on July 1, 1999 was 109.74 months ($SD = 16.9$; range 87-136) and mean number of years these children had spent in general education classes by the end of 1999 was 3.58 years ($SD = 1.43$; range 2-6). All but two children with disabilities included in the current study (C94, F95) were allocated aide or special teacher support time. At the

TABLE 1

Details of Participants

<i>Subject</i>	<i>Sex</i>	<i>Age in Months</i>	<i>Type/level of Disability</i>	<i>Grade</i>
C94	F	134	Severe language	5
E94	M	136	Mild (Moderate) intellectual	5
D95	M	134	Moderate intellectual	4
E95	F	131	Moderate intellectual	4
F95	M	122	Moderate intellectual	4
G95	F	128	Moderate intellectual	4
D96	M	114	Moderate intellectual	3
E96	F	112	Moderate intellectual	2
F96	M	111	Mild intellectual	2
C97	M	96	Mild intellectual	2
D97	F	100	Moderate intellectual	2
E97	M	98	Mild intellectual	2
F97	M	106	Moderate intellectual	2
H97	M	110	Moderate intellectual	2
A98	F	95	Severe intellectual	1
B98	M	89	Moderate intellectual	1
C98	M	93	Mild intellectual	1
E98	M	87	Mild intellectual	1
F98	F	89	Mild (Moderate) intellectual	1

time of data collection all but one of the children spent all or the majority of time in the classroom. One child (D95) spent only about 50% of the time in the regular classroom and was withdrawn by the special education support teacher for the remaining time.

Teachers of the included children. Data relating to the children with disabilities were collected from 19 teachers (15 female, 4 male). The teacher for C94 was a casual teacher who began teaching the class at the beginning of the term in which data were collected. Because this teacher had little time to get to know children before data collection, the interview was conducted with the target child's teacher from the previous year. Mean number of years of teaching experience of the teachers was 18.7 (SD = 9.69; range, 1-35). Only one teacher had special education training; 12 had prior experience teaching children with disabilities and two reported that they had a little prior experience; five reported no prior experience in teaching children with disabilities. Mean number of children in their 1999 classes was 26.9 (SD = 3.86; range 16-32). Information relating to class composition and size provided by the current teacher of C94 was included for analysis. Six of the teachers' classes in 1999 were composite classes; five of these included two grades and one included three grades.

Teacher-nominated peers. Consistent with the approach described in previous research (Kemp & Carter, 2000; Walter & Vincent, 1982), observational measures of on-task behavior and following-direction behavior were taken concurrently for children with disabilities and children nominated by the classroom teachers as average peers. The advice to teachers regarding selection of the average peers was that they should be typical classroom members in terms of both academic achievement and behavior. While selection of same sex peers was encouraged, selection of opposite sex peers was not prohibited. Of the children with disabilities, for whom comparable data were collected for teacher nominated peers, 12 were male and seven were female. For 16 of these children, comparison data were collected on the same peer for all three observations. Thirteen of these children were same sex peers and three were not. For three of the children with disabilities, two different peers were used because the peer who had

been observed in the first observation period had not been present for the second set of observations. Same sex peers were selected for two of these children with disabilities while for the third child a same sex peer was observed on one occasion and an opposite sex peer was observed on the other two occasions.

Data Collection and Analysis

Data were collected specifically for the current study when children had been integrated for between 1.5 and 5.5 years. The majority of data reported in the present study were collected in Term 3 (July to September), 1999. Direct measures of classroom skills were collected on the children with disabilities and a teacher nominated peer on three separate visits to each school. An additional visit prior to collection of observational data was organized for the purpose of interviewing the teacher and for arranging subsequent classroom observations. Because of the small number of children and hence the low statistical power of the data, interest in the present study included clinically significant differences in addition to statistically significant differences in performances of (a) children with and without disabilities, and (b) children with disabilities who were considered to be very successful and those who were not.

Measures and Procedures

Classroom measures. Measures of time-on-task and following teacher directions that were similar to those in the transition study (see Kemp & Carter, 2000) were collected. Teachers were told that measures of the children's ability to remain on-task and to follow teacher directions were being taken and that child and not teacher behavior was being recorded. They were also advised of the importance of not drawing attention to the data collection. If they wanted to introduce research assistants to the class they were asked to introduce them as visitors. They were also informed that research assistants would not interact with children and would ignore any attempt on the part of children to engage them.

On-task behavior. It was of interest to the researchers to sample on-task behavior in as many instructional situations as possible. To

this end teachers were asked in their initial interview to describe the different instructional groupings used in their classes. Examples of these may have been (a) whole class instruction, (b) instruction in small groups, (c) paired instruction, (d) cooperative learning groups, and (e) individual task completion exercises. At the same time teachers were asked to nominate days that would be convenient for the collection of the classroom data. Importance of observing the child with a disability in instructional situations similar to the peer was emphasized and the teacher was encouraged to avoid times when the child with disabilities was withdrawn from the classroom or was working with the assistance of a teacher's aide. Teachers were then asked whether observers would be likely to see examples of commonly used instructional groupings on the days that teachers nominated for observations. Although some teachers nominated other forms of instruction, the majority of the teachers nominated whole class teaching and independent activities as the two forms of instruction used in their classrooms and data were collected for all participants in these conditions.

Where possible research assistants aimed to collect samples of on-task behavior for 20 min in each of the different instructional situations observed. Where lessons were shorter than 20 min, fewer data were collected but where lessons were longer than 20 min the observer stopped collecting on-task data and collected other data instead. When two sets of data in the one instructional condition were collected on any one visit, the longer one was used in data analysis if it were of 20 min duration. If not of that duration, the larger data set was used and topped up with the smaller data set to make up 20 min. In this case intervals were included from the earliest part of the second observation.

A whole interval recording system was used with observation for 8 s and recording for 2 s. Two types of on- and off-task behavior were recorded, active and passive. Data were recorded by the observer using a pre-recorded tape through an earphone to provide time markers. The target child and peer were observed in turn every 10 s continuously for 20 min or until a lesson finished. For each interval, the observer recorded if the relevant child was actively or passively on-task for the whole

interval. If the child was off task for any part of the interval, the interval was coded as off task. If any off-task behavior was active then the interval was recorded as active off-task but if no off-task behavior was active, then the child was recorded as passive off-task.

On the back of the data recording sheet, instructions and definitions were provided. Active on-task behavior was defined as the child actively participating in the lesson by verbally or physically responding to instructional cues, for example, drawing in the air, answering a question, raising hands, choral responding. Passive on-task behavior was defined as (a) looking at the teacher or material or task to which the teacher is referring (for example looking at a book being read, looking at a worksheet, looking at an activity being modeled by the teacher); and (b) looking at another child responding to the teacher's cue (for example looking at the child giving news, looking at the child in the group answering the teacher's question). Where children were lining up quietly to receive feedback from the teacher or sitting quietly with hand raised to receive teacher attention then this behavior was also recorded as passive on-task behavior.

Active off-task behavior was defined as talking about topics unrelated to the task (including aggressive or inappropriate verbal or physical behavior) or completing a task not specified by the teacher. Passive off-task behavior was defined as looking away from the teacher or the task (e.g., turning around to look at an off-task child, staring into space, looking at something unrelated to the task). Where children left their seats to get drinks or to sharpen pencils, this was recorded as active off-task behavior even if it was accepted by the teacher. Children who spoke to other children during independent work periods were scored as being actively off-task.

Following teacher directions. The procedure for collecting data related to following direction behavior was the same as in the transition study (Kemp & Carter, 2000). Data were collected independently of any activity and, where possible, the research assistant collected data on 10 opportunities to respond to group directions. The same definition of teacher directions and the same latency period for responding (beginning to respond within 3 s) were applied.

Interviews

Structured interviews were conducted with the classroom teacher by a research assistant on the first visit. At that time teacher demographic data were obtained and information relating to class size, composition and instructional groupings was also collected. The teacher was asked to rate success of the inclusion of the child with a disability as (1) very successful, (2) moderately successful, or (3) not at all successful.

Interobserver Reliability

Training. Three research assistants were trained in use of classroom measures and with the principal researcher practiced in pairs until interobserver reliability of at least 80% was achieved. Because all data collectors had been involved in collection of data for the transition study they were familiar with the type of procedure. Two to three practice sessions of approximately one and a half hours were undertaken by the data collectors.

On-task behavior. Interobserver agreement measures were taken for classroom observations on one half-day visit to each school (approximately one third of all visits). When reliability checks were being implemented for on-task behavior, a second observer scored the observations independently. Both observers had an earphone attached to the same audio player, which provided the signals for observing and scoring.

Measures of interobserver reliability were collected for 19 observations for a mean observation time of 17.1 min for whole class instruction (range 4-20) and 16.6 min for independent activities (range 6-20). Reliability was calculated using point-by-point agreement. For each child number of agreements was divided by number of agreements plus disagreements and multiplied by 100. Mean reliability for whole class instruction for children with disabilities was 80% for active/passive on/off-task behavior (range 50-100) and 88% for on/off-task behavior (range 58-100). For peers it was 81% for active/passive on/off-task behavior (range 42-100) and 90% for on/off-task behavior (range 75-100). Mean reliability for independent activities for children with disabilities was 82% for active/passive, on/off-task behavior (range 65-93%) and 93%

for on/off-task behavior (range 82-100). For peers it was 80% for active/passive, on/off-task behavior (range 58-94) and 90% for on/off-task behavior (range 70-100). In the small number of sessions where individual reliability scores were very low this was often due to the positioning of observers in relation to the children. It was much more difficult for two observers attached to the same audiocassette to move quickly, yet unobtrusively, around the room in order to be in the best position to observe behavior, while continuing observation.

Following directions. For following directions, data were also collected by a second independent observer. Because directions were recorded by each observer it was possible to calculate point-by-point agreement. Where directions were recorded by one observer but not the other, they were ignored for the purpose of reliability measures, as the concern of the researcher was whether the directions given were followed by the children being observed. Measures of interobserver reliability were collected for 19 observations. Point-by-point agreement was calculated separately for each child by dividing number of agreements relating to following or ignoring directions by number of agreements plus disagreements and multiplying by 100.

Mean interobserver reliability for following group directions was 96% (range 88-100) for children with disabilities and 95% (range 75-100) for peers. Mean interobserver reliability for provision of individual follow-up directions to group directions was 100% for both children with disabilities and peers.

Results

On-Task Behavior

On-task data were collected for 19 children with disabilities and their teacher nominated peers for each type of instructional condition (i.e., whole class or independent activities). Three sets of data were thought to be useful in describing on-task behavior in each instructional condition. These were (a) percentage of total on-task behavior, (b) percentage of active on-task behavior, and (c) percentage of active off-task behavior. Information on total on-task behavior and active on-task behavior, in particular, were thought to be a good mea-

sure of the opportunity for learning given the link between engaged time and learning (Brophy & Good, 1986; Greenwood, 1991; Rosenshine & Stevens, 1986; Ysseldyke et al., 1987). Active off-task behavior was thought to be a good measure of the potential of child behavior to be disruptive to the learning of others. This was also the type of off-task behavior that was more likely to be noticed by the teacher and be considered problematic.

Whole class instruction. For the 19 child dyads, data on three observations of whole class teaching were collected for 17 dyads and data on two observations were collected for the other two dyads. Mean length of observation was 17.3 min (range 3.3-20) and mean number of total min of observation was 49.7 (range 36.3-60).

Mean percentage of total on-task behavior for all children was 65.40 ($SD = 21.74$). Descriptive data summaries for children with disabilities and nominated peers are presented in Table 2. Effect sizes were used to determine clinical significance of differences between children with disabilities and peer groups for total on-task behavior, active on-task behavior and active off-task behavior. These were determined by dividing the mean difference in measured behavior between the two groups by the pooled standard deviation. Effect sizes are presented in Table 2. Moderate to large effect sizes were found for differences in total on-task behavior and active off-task behavior with those effects being in favor of peers for total time-on-task and in favor of children with disabilities for active off-task behavior. A moderate effect size in favor of peers was found for active on-task behavior. As clearly indicated in

the research questions, the concern in the analysis was the discrepancy between children with disabilities and their regular peers. Thus, a planned analysis was conducted using unpaired *t*-tests to determine whether or not the differences between the children with disabilities and their peers for (a) total on-task behavior, (b) active on-task behavior, and (c) active off-task behavior, were statistically significant. While a significant difference in favor of peers was found for total on-task behavior ($t = -2.348, p = .0245$) and in favor of children with disabilities for active off-task behavior ($t = 2.032, p = .0496$), no significant difference was found for active on-task behavior ($t = -1.244, p = .2217$).

Independent activities. For the 19 child dyads for which data on independent activities were available, 15 were observed on three occasions and the other four were observed on two occasions. Mean length of observation for independent activities was 17.9 min (range 6-20) and mean number of total min of observation was 49.7 (range 40-60).

Mean percentage of total on-task behavior for all children was 64.71 ($SD = 16.32$). Descriptive data summaries for children with disabilities and nominated peers are presented in Table 3. Effect sizes were used to determine clinical significance of differences between children with disabilities and their peers separately for total on-task, active on-task and active off-task behavior. As illustrated in Table 3, effect sizes for all three behaviors were small. Again, as indicated in the research questions, the concern in the analysis was the discrepancy between children with disabilities and their regular peers. Thus, a planned anal-

TABLE 2
Effect Size for On-task and Off-task Behavior During Whole Class Instruction

<i>Behavior</i>	<i>N</i>	<i>M (SD)</i>	<i>Pooled SD</i>	<i>ES</i>
Total on-task			21.74	-0.72
Target	19	57.58 (24.7)		
Peer	19	73.21 (15.24)		
Active on-task			12.22	-0.4
Target	19	17 (11.53)		
Peer	19	21.9 (12.71)		
Active off-task			20.12	0.63
Target	19	27.68 (24.28)		
Peer	19	14.95 (11.73)		

TABLE 3
Effect Size for On-task and Off-task Behavior
During Independent Activities

<i>Behavior</i>	<i>N</i>	<i>M (SD)</i>	<i>Pooled SD</i>	<i>ES</i>
Total on-task			16.32	-0.2
Target	19	63.1 (18.65)		
Peer	19	66.32 (13.95)		
Active on-task			14.05	-0.2
Target	19	43.63 (12.8)		
Peer	19	46.42 (15.43)		
Active off-task			15.23	0.24
Target	19	24.58 (18.65)		
Peer	19	20.9 (11.05)		

ysis using *t* tests was conducted. The difference between children with and without disabilities was not significant for total on-task behavior ($t = -.609, p = .5517$), active on-task behavior ($t = -.607, p = .5479$) or active off-task behavior ($t = .741, p = .4636$).

Following Directions

Following direction data were collected for 19 children with disabilities and their teacher nominated peers. Three sets of data were collected for all 19 dyads. Mean number of group directions recorded was between 9 and 10 for each of the observations 1 to 3 (range 6-10). Mean total number of group directions recorded across all three observations was 28.7 (range 24-30).

Mean percentage of group directions followed was 72 ($SD = 20.34$, range 13-93). Descriptive data for children with disabilities and nominated peers is provided in Table 4. In order to determine the clinical significance of differences between children with disabilities and peers for mean percentage of directions followed and mean number of follow-up directions provided, effect sizes were calculated for both measures. As can be seen in Table 4, effect sizes for both calculations were quite large, indicating that both differences were clinically significant. As stated previously, the concern in the analysis was the discrepancy between children with disabilities and their regular peers and so a planned analysis was conducted using unpaired *t*-tests in order to see whether differences were also statistically significant. There was, in fact, a significant

difference in favor of the peers ($t = -3.002, p = .0048$) for mean percentage of group directions followed and a significant difference in favor of children with disabilities for number of follow-up directions provided ($t = 2.834, p = .0075$).

Relationship Between Perception of Success and Classroom Measures

Teachers generally selected one of the three categories of success (very successful, moderately successful, not at all successful) when asked about success of the inclusion of children with disabilities. However, a small number of respondents insisted on offering intermediate ratings. Where respondents nominated a rating between moderately and very successful (two teachers), a rating of moderately successful was assigned for the purpose of data analysis. Where a rating between moderately and not successful was nominated (two teachers), a rating of not at all successful was assigned for the purpose of data analysis.

Of the 19 children for whom measures of classroom skills were available, 11 were rated by their teachers as being very successfully included and eight were not. Effect sizes were calculated to see whether there were clinically significant differences between the two groups in relation to on-task behavior during whole class instruction and independent activities, active on- and off-task behavior in each of the two instructional conditions and following group directions. Once more the difference between the scores of the groups for each measure was divided by the pooled standard

TABLE 4
Effect Size for Mean Percentage of Group
Direction Followed and Number of Follow-up
Directions Provided

	<i>N</i>	<i>M (SD)</i>	<i>Pooled SD</i>	<i>ES</i>
Group				
Directions			20.38	-0.88
Target	19	62.95 (23.89)		
Peer	19	80.95 (10.59)		
Follow-up			2.75	0.84
Directions				
Target	19	2.9 (4.4)		
Peer	19	0.58 (1.07)		

TABLE 5

Effect Size for On-task Skills During Whole Class Instruction: Successful Versus Less Successful Children

<i>Behavior</i>	<i>N</i>	<i>M (SD)</i>	<i>Pooled SD</i>	<i>ES</i>
Total On-task			24.70	0.57
Successful	11	63.55 (25.97)		
Less Successful	8	49.38 (21.73)		
Active On-task			11.53	0.28
Successful	11	18.36 (11.62)		
Less Successful	8	15.13 (11.91)		
Active Off-task			24.68	-0.14
Successful	11	26.18 (25.7)		
Less Successful	8	29.75 (24.78)		

deviation in order to determine effect size. Effect sizes for these mean differences are presented in Tables 5-7.

Small clinically non-significant effect sizes were found for differences between the two groups in relation to on-task behavior during independent activities and active on- and off-task behavior during whole class instruction and active off-task behavior during independent activities. Moderate, clinically significant differences were found for differences between the two groups' on-task behavior during whole class instruction, active on-task behavior during independent activities and in following group directions. Unpaired *t*-tests revealed statistically non-significant differences for on-task behavior during whole class instruction ($t = 1.254, p = .2268$), active on-task behavior during independent activities ($t = 1.176, p = .2560$), and following directions ($t = 1.149, p = .2663$).

Classroom Skills in Transition and Later Inclusion

It was of interest to examine the relationship between measures of classroom skills in the first (transition) year of school as previously reported by Kemp and Carter (2000) and (a) measures of classroom skill in the present follow-up study and (b) measures perception of success as measured in the present follow-up study. While there were some variations in the procedures for data collection described in the earlier study (for details see Kemp & Carter) measures of classrooms skills are considered to be comparable to the present study.

Measures of classroom skills. Transition and follow-up measures were available for all 19 of the children with disabilities. For two children, whose transition data were collected for an earlier pilot study, on-task behavior and direction following behavior were defined and

TABLE 6

Effect Size for On-task Skills During Whole Independent Activities: Successful Versus Less Successful Children

<i>Behavior</i>	<i>N</i>	<i>M (SD)</i>	<i>Pooled SD</i>	<i>ES</i>
Total On-task			18.65	0.28
Successful	11	65.27 (20.12)		
Less Successful	8	60.13 (17.28)		
Active On-task			12.80	0.54
Successful	11	46.55 (17.78)		
Less Successful	8	39.63 (10.89)		
Active Off-task			18.65	-0.17
Successful	11	23.27 (20.64)		
Less Successful	8	26.38 (16.72)		

TABLE 7

Effect Size for Following Directions: Successful Versus Less Successful Children

<i>Behavior</i>	<i>N</i>	<i>M (SD)</i>	<i>Pooled SD</i>	<i>ES</i>
Following Group				
Directions			23.89	0.53
Successful	11	68.27 (23.58)		
Less Successful	8	55.63 (23.83)		

collected in a similar way to the other transition children but fewer data were collected for each instructional condition. In order to compare the transition and follow-up performance of children, for whom classroom measures were available in the follow-up study, the mean difference between these children and their teacher nominated average peers was determined in both their kindergarten and follow-up year for (a) on-task behavior during whole class instruction, (b) on-task behavior during independent activities, (c) total on-task behavior across two instructional conditions, and (d) direction following behavior. These data are presented in Table 8.

In order to investigate the relationship between the classroom skills of children with disabilities as measured in their transition year and perception of success of the inclusion in subsequent years, transition classroom skills of the children who were rated as being very successfully integrated by their teachers in the follow-up study were compared to children rated as being less successful (i.e., moderately successful or not at all successful). Because of small and unequal numbers involved, effect sizes were used in the first instance in order to examine differences. Table 9 presents differences in transition classroom skills demonstrated by those regarded by their subsequent

teachers as being more and less successfully integrated. A moderate effect size favoring children perceived as more successfully integrated in the long-term was calculated for whole class on-task behavior and a large effect size also favoring the more successful group was calculated for following group directions. The effect size for on-task behavior during individual task completion activities was negligible. Unpaired *t*-tests were used to determine whether differences between more and less successful children were statistically significant. These analyses revealed non-significant differences for on-task behavior during whole class instruction ($t = 1.050, p = .3085$), on-task behavior during independent activities ($t = -.043, p = .9659$), and following group directions ($t = 1.865, p = .0795$).

Discussion

The present research examined how classroom skills (task-related behavior and following directions) of children with disabilities who had been in integrated settings for between 1.5 and 5.5 years compared with those of average children. The relationship between these variables and the perceived success of inclusion was also examined. Further, the relationship between classroom skills in the

TABLE 8

Mean Difference in Performance of Classroom Skills for Target and Peer Students During the Transition and Follow-up Observations

	<i>Classroom skill</i>			
	<i>On-task (whole class)</i>	<i>On-task (independent)</i>	<i>Total On-Task</i>	<i>Following directions</i>
Transition	17.3%	0.6%	8.3%	20.6%
Follow-up	15.6%	3.2%	9.4%	18%

TABLE 9

Differences in Transition Classroom Skills for those Perceived as being Successful and Less Successful in the Longer-term

<i>Transition Skill</i>	<i>Perceived Long-Term Success</i>	<i>N</i>	<i>M (SD)</i>	<i>Pooled SD</i>	<i>ES</i>
On-task Whole Class	Successful	11	74.27 (17.97)	16.10	0.54
	Less Successful	8	65.63 (17.52)		
On-task Independent	Successful	11	73.91 (10.11)	10.68	-0.02
	Less Successful	8	74.13 (11.5)		
Following Group Directions	Successful	11	72.91 (16.29)	17.09	0.83
	Less Successful	8	58.75 (16.4)		

transition year for these children and (a) subsequent classroom skills, and (b) perceived success were also examined. These issues will now be addressed.

Classroom Skills

Examination of task related behavior revealed some interesting results. There was a clinically and statistically significant difference in total on-task behavior between children with disabilities and peers (in favor of peers) in the whole class condition but not in individual activities. Further, there was a clinically and statistically significantly higher level of active off-task behavior in children with disabilities in the whole class condition, but not in individual activities. It appears that whole class instruction is most problematic for children with intellectual disabilities, with a greater level of active off-task behavior observed for these children. Teachers are likely to find this type of off-task behavior to be more disruptive to the class. Given that whole class instruction is a common instructional condition in classrooms and participation in large groups is considered to be a valuable skill (Carta et al., 1990; Rule et al., 1990; Walter & Vincent, 1982), this is an important finding. In particular, this may be an area that needs to be systematically targeted in providing support for children in inclusive placements. While teachers have developed strategies, such as use of modified tasks and peer tutoring, to improve on-task behavior these have tended to focus on independent work. Noting that

the present research suggested that children with disabilities in inclusive placements had more difficulty with task-related behavior in the large group setting, further research on strategies that might be effective under this condition would seem particularly important. Further, it should be noted that the present study involved only small numbers of children and replication would seem warranted to verify that findings are robust.

There was also a significant difference between children with disabilities and their peers for direction following behavior. Children with disabilities followed fewer instructions directed to the group and required more follow-up directions from teachers. Again, this may have practical implications. Teachers may need to consider adjustments in the nature and length of directions. Also, non-transient adjuncts to verbal directions, such as visual supports, might be considered. For example, when some directions are given it might be appropriate to place an icon or icon(s) on display in order to remind children what is required, particularly when multi-part directions are issued. It may also be appropriate to recruit peer support to assist in direction following. At this point it remains unclear whether the failure of children with disabilities to follow a substantial number of directions resulted from a failure to attend to directions, failure to understand directions or a failure to comply with directions. It is certainly possible that lower level of on-task activity in the group instructional situation may impact

on direction following. Nevertheless, this question requires further investigation.

Classroom Skills and Perceived Success of the Inclusion

It must be stated from the outset that data presented in this study are descriptive and, while relationships are examined, causality cannot be inferred. Measures that have been investigated are of interest in their potential to be predictive of success or even as direct measures of success. Inclusion success can be viewed from a number of perspectives. It can, as Walter and Vincent (1982) suggested, be measured by comparing classroom performance of children with disabilities to average, and therefore presumably successful, class members. The classroom performance that was the focus of the Walter and Vincent study related to participation in classroom activities. Successful participation, including attending and responding to classroom instruction and time allocated to academic content have been linked to learning (Brophy & Good, 1986; Greenwood, 1991; Rosenshine & Stevens, 1986; Ysseldyke, et al., 1987). Further, failure to attend to tasks (particularly active off-task behavior) and failure to follow directions are likely to disrupt the practical running of a classroom and involve additional teacher time and effort.

Because perception of success has been used to measure success in earlier research (Center, Ward, & Ferguson, 1991; Kemp & Carter, 2000; Walter & Vincent, 1982) and has a high degree of face validity, it cannot be ignored as a possible measure of success. It may be that, on occasions, it is the perception of the teacher that most influences the decision to continue a general education placement or to strongly encourage a family to accept a special placement for their child with a disability. Children who were considered by their teachers to be very successfully integrated scored better on direct measures of classroom skills than those perceived to be less successfully integrated. In the present study, moderate, clinically significant differences were found for differences between very successful and less successful groups on measures of on-task behavior during whole class instruction, active on-task behavior during independent activities and following group directions.

The fact that differences between the two groups were clinically but not statistically significant may have been due to the small and uneven sizes of the groups whose data were included for analysis. Findings from the present study provide a preliminary indication that the variables might have some impact on perceived success of inclusion. On this basis, further investigation of these factors in regard to the long-term success of inclusion with larger groups of children would seem appropriate.

Classroom Skills in Transition and Later Inclusion

Examination of classroom skills in the first year of school and in the current subsequent follow-up study (see Table 8) did not reveal any major change in the discrepancy between children with disabilities and peers. All mean changes were less than 3% indicating that the discrepancy between children with disabilities and their average peers did not widen over time in relation to on-task behavior and direction following. This may be interpreted as suggesting that children with disabilities, as a group, did not fall further behind regular peers. On the other hand, it needs to be remembered that large discrepancies in performance in on-task behavior in whole class instruction and direction following that were evident in the first year of schooling persisted into later years. The stability of these differences may be seen as adding weight to the previously outlined argument that teachers may need to address these difficulties actively, systematically and as early as possible.

Classroom Skills in Transition and Later Perception of Success

Of particular interest were factors related to children with disabilities' transition phase and subsequent measures of success. When children are divided into those who were perceived by their teachers in the follow-up study as being very successfully integrated and those who were not, clinically significant differences in favor of the successful group were found for transition measures of on-task behavior in whole class instruction and following group directions, but not for on-task behavior in independent activities. Differences that were

clinically significant were not found to be statistically different but the small and uneven numbers in each group needs to be considered when interpreting these results. These findings do suggest that the predictive properties of these variables to the success of inclusion should be further examined.

Conclusion

The relationship between specific classroom skills and the long-term inclusion of children with disabilities in regular classrooms was examined in the present study. Significant clinical and statistical differences were found between children with disabilities and their average peers for on-task behavior during whole class instruction, active off-task behavior during whole class instruction but not during independent activities. There were also differences in direction following. There was tentative evidence that very successful and less successful groups of children with disabilities differed on measures of some classroom skills and that measures of some skills in the first year of schooling may be predictive of the later success of inclusion.

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