THE EFFECTS OF CLASSIFICATION ON TEACHER AND PARENT INTERPRETATIONS OF THE COGNITIVE PERFORMANCE OF CHILDREN WITH INTELLECTUAL DISABILITY

by

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ABSTRACT

Previous research has indicated that the classification of intellectual disability (ID) may negatively impact interpretations of the cognitive performance of children with ID, especially for general-education teachers. However, there are some findings that suggest that these negative effects of classification may be overcome when competing information is present. The current study examined the effects of classification by having three groups of participants, parents, general-education teachers, and special education teachers, watch a video of a child who was classified as either typically developing or as having an intellectual disability perform a time-telling task. Level of performance was also manipulated such that the child in the video performed either very poorly or very well on the task. The results indicated that level of performance was a more significant predictor of participant judgments than classification, particularly for general-education teachers. Further, parents and special education teachers exhibited a tendency to overestimate the performance of the child in the video, regardless of classification or level of performance. Performance attributions and correlations between the accuracy of judgments and participant variables were also examined.

LIST OF ABBREVIATIONS AND SYMBOLS

IQ	Intelligence quotient
ID	Intellectual disability
M	Mean: the sum of a set of measurements divided by the number of measurements in the set
n	Sample size for group
MANOVA	Multivariate analysis of variance
ANOVA	Analysis of variance
TD	Typically developing
λ	Lambda
F	Fisher's *F* ratio: a ratio of two variances
p	Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value
t	Computed value of *t* test
SD	Standard deviation
<	Less than
=	Equal to

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INTRODUCTION

Intellectual disability can be defined as any disability characterized by substantial limitations in both cognitive functioning and adaptive behavior. Persons with intellectual disability generally have an IQ of 70 or below and also experience difficulties with conceptual, social, and practical skills, such as language and literacy, social responsibility, and personal care (American Association on Intellectual and Developmental Disabilities, 2011). With the causes ranging from genetic conditions to problems during pregnancy and birth, approximately 6.5 million individuals with an intellectual disability currently live in the United States (National Dissemination Center for Children with Disabilities, 2011).

Although persons with intellectual disability do experience deficits in cognitive functioning and adaptive behavior, large-scale efforts to improve the education and overall quality of life of these individuals have been made. Beginning in the late 1960s, there has been a strong movement in favor of including individuals with intellectual disability in general-education classrooms instead of separate resource classes. Accordingly, the Education for All Handicapped Children Act of 1975 called for persons with intellectual disability to be placed in the "least restrictive environment", a classroom environment which most closely resembles that of typically developing children and in which a child with an intellectual disability can still succeed academically (Kavale & Forness, 2000). This legislation, along with its reauthorization as the Individuals with Disabilities Education Improvement Act of 2004, has revolutionized the education system such that students with disabilities now spend as much time in general-education settings as is possible for their individual needs to be met as well (Jorgensen,

McSheehan, & Sonnenmeier, 2007). With the recent push towards inclusion in the general-education classroom and the development of greater vocational opportunities for adults, it becomes important for persons with intellectual disability to receive an appropriate education, for parents to continue to support and strive for the best for their children, and for teachers to foster a comfortable, optimistic, and motivational learning environment in their classrooms.

However, much research has indicated that knowing another person has a disability influences how others interpret that person's behavior, as well as how others develop expectations about that person's capabilities and future behavior. For example, classifying a child as having an intellectual disability may hinder the classroom success of the child by altering teacher expectations in accordance with the classification as opposed to the child's actual academic performance (Aloia & MacMillan, 1983; Foster, Ysseldyke, & Reese, 1975; Gillung & Rucker, 1977; Rolison & Medway, 1985; Yoshida & Meyers, 1975). In the classic Rosenthal and Jacobson (1968) study, the importance of teacher expectations for child success became evident when students who were identified to the teachers as "bloomers" made greater academic gains than would be expected based on ability alone throughout the course of a school year. Teachers spent more time interacting with and assisting the "bloomers" and simply held more optimistic expectations for these children, which, in turn, had a significant impact on student motivation and learning.

In light of such findings, it is particularly relevant to explore why the classification of intellectual disability might foster negative expectations and to develop methods that will correct the problem. It is also important to determine the accuracy of parent expectations of the cognitive performance of children with intellectual disability and to establish if they are falling victim to the classification problem in the same manner as teachers. The following study is

designed to improve upon previous research in three fundamental ways. First, rather than using only a verbal classification or simple description of behavior, a video of performance on a cognitive task was employed to manipulate the presence of intellectual disability. Second, the level of ability of performance was altered to determine if the effects of the intellectual disability classification may be overcome when actual performance violates the more negative expectations of the classification. Finally, instead of solely looking at the attitudes of general-education teachers and parents, this study also examined the effects of classification on the expectations of special education teachers, a group that has been the focus of little to no research in this area.

Impression Formation, Stereotypes, and Prejudice

Before discussing the previous research on the effects of the intellectual disability classification, it is important to first examine the stigma that is associated with such a classification as well as how such negative perceptions are formed. In general, negative perceptions stem from a process known as impression formation in which a person makes several quick judgments of another upon first meeting. These judgments are often based on nonverbal behaviors such as facial expressions and body language (Gazzaniga, Heatherton, & Halpern, 2010). Accordingly, impression formation for individuals with intellectual disability may suffer because evidence of their disability is typically seen in their nonverbal behaviors.

The initial impressions that are formed are also affected by the development of stereotypes, cognitive schemas that help organize information about people on the basis of their membership in certain groups. People use stereotypes to categorize others and then form beliefs about them based on the specific category in which they are placed. Further, once a stereotype has been formed, people tend to only focus on information that confirms the stereotype, thus

disregarding any incongruent information (Gazzaniga, Heatherton, & Halpern, 2010). For example, if an individual with intellectual disability has been stereotyped as unintelligent, he or she will continue to be classified in that manner despite the availability of information that discredits the stereotype. This can have devastating consequences for individuals with intellectual disability such that they may start internalizing the negative stereotypes associated with their classification.

Finally, the formation of stereotypes may eventually lead to the emergence of prejudice, which typically involves the negative affective or attitudinal responses associated with stereotypes. Prejudice tends to pit groups against each other and is responsible for much of the conflict and violence seen around the world (Gazzaniga, Heatherton, & Halpern, 2010). Similar to stereotypes, prejudice can have negative effects on individuals with intellectual disability such that it associates a stigma with their classification.

Perceptions of Individuals with Intellectual Disability

As highlighted in the previous section, the development of first impressions, stereotypes, and prejudice can all contribute to the negative perceptions associated with intellectual disability. In 2003, the Special Olympics commissioned a large-scale study to examine the public perception of individuals with intellectual disability in ten countries around the world. These results indicated that the public generally views individuals with intellectual disability as capable of completing simple tasks such as washing and dressing, but as unable to perform more complex activities such as understanding world events and handling emergencies. Further, the public generally perceives individuals with intellectual disability as unable to make decisions regarding their home, work, and school situations. The study also revealed that a majority of the public believes that persons with intellectual disability should live at home and should be placed

in specialized school and work programs apart from mainstream institutions. Each of the beliefs mentioned above demonstrate a component of the stigma associated with intellectual disability.

In addition, Katrina Scior (2011) conducted a review of 68 articles pertaining to the public's perceptions of individuals with intellectual disability. Similar to the study commissioned by the Special Olympics, this review revealed negative perceptions of these individuals, such that persons with intellectual disabilities rank as one of the least desirable groups of which to engage in social interaction. The public also held more negative behavioral intentions and desired a greater social distance from individuals with intellectual disability than from individuals with physical disabilities or severe mental health problems.

Factors that influence the public's perceptions of persons with intellectual disability were also addressed. Several studies have indicated that gender, age, and education all play a role in the development of perceptions, such that females, younger individuals, and those with a higher educational background tend to hold more positive perceptions toward individuals with intellectual disability (Morin, Rivard, Crocker, Boursier, & Caron, 2013; Scior, 2011). Although some of these findings, especially those relating to the effects of gender, have been inconsistent, one factor that has been repeatedly linked to people's perceptions of intellectual disability is exposure. In other words, the more that one comes in contact with an individual with intellectual disability, the more positive views that person will hold towards the group as a whole (Scior, 2011).

Finally, a recent study by Morin et al. (2013) indicated that the public's perception towards intellectual disability may have become more positive in the past few years. The authors proposed that this encouraging trend may be a result of the public having more contact with and gaining more exposure to persons with intellectual disability. However, although the public's

perception appears to have taken a positive turn, a large portion of society still holds negative views of intellectual disability.

General Process of Performance Appraisal

In light of the negative perceptions of individuals with intellectual disability held by the general public, it is important to examine the performance appraisal process and eventually how this process can differ when the performance being evaluated is of an individual with intellectual disability. Feldman (1981) described general performance appraisal as a dual-process system in which the rater places individuals into rough categories and then judges their performance based on the prototype of that assigned category. Category placement varies by rater and is made according to characteristics of the ratee that seem to be the most salient (Taylor and Fiske, 1978). When a person is easily placed into a category, this process is viewed as automatic; however, when no category is deemed a proper fit or information that is discrepant with initial category placement surfaces, the process becomes controlled and categories must be modified accordingly (Feldman, 1981).

Once a person has been placed in a category, the rater then begins to seek information regarding performance and behavior. If the information is consistent with the prototype of the assigned category, only characteristics of the prototype will be recalled in the future, regardless of whether or not these characteristics are entirely accurate. For example, if a person is recalled as a prototypical car salesman, the rater may associate them with being pushy even though this trait may not fit in accordance with the ratee's actual behavior. On the other hand, if the incoming performance information is drastically inconsistent with the prototype, the category placement process resumes from the start (Feldman, 1981).

Performance Appraisal of Individuals with Intellectual Disability

Two particular aspects of Feldman's model hold specific relevance for the performance appraisal of individuals with intellectual disability. Given that category placement is often based on the most salient characteristics of the ratee, raters may tend to categorize individuals with intellectual disability in terms of their disability status alone. This, in turn, may lead to more negative categorizations of such individuals, and thus lowered expectations of performance. Further, Zadny and Gerard (1974) found that when a rater has specific behavioral expectations for a person, they notice and recall those behaviors more so than other unexpected behaviors. In other words, if a person is placed in a category based on their intellectual disability status, behaviors that confirm the lowered expectations of the category placement are much more likely to be remembered by the rater than behaviors that exceed these expectations. Therefore, the performance appraisal of individuals with intellectual disability may be negatively biased at both the category placement and information recall stages.

To further illuminate these issues, Colella, DeNisi, and Varma (1997) developed a complex model of the performance appraisal process of individuals with intellectual disability. According to this model, the appraisal of a person's true performance is affected by factors such as cognitive categorization, stereotypes and beliefs, performance expectations, and performance attributions. For individuals with intellectual disability, cognitive categorization is often dependent on the nature and salience of the disability. These categories are then subject to stereotypes and beliefs regarding the disability-job fit and disability-specific stereotypes. Further, the stereotypes and beliefs surrounding category placement affect performance expectations and the rater's attributions of performance. Given that all of these factors impact a

typical performance appraisal situation, individuals with intellectual disability may experience a negative bias that is independent of their actual level of performance.

Empirical evidence has also been found to support such models of the performance appraisal of individuals with intellectual disability. Run Ren, Paetzold, and Colella (2008) conducted a meta-analysis that examined 23 published articles and 8 unpublished theses and dissertations on the effects of disability status on job performance judgments. These studies revealed clear negative effects on performance expectations and future hiring decisions for individuals with intellectual disability. Additionally, these negative opinions were often the result of stigmatized views associated with the intellectual disability itself or perceived issues with the fit between the disability and the responsibilities of the job.

To further investigate the issues associated with disability-job fit, Colella and Varma (1999) conducted a study in which participants watched a video of an actress who was identified as either having or not having a disability perform various responsibilities associated with a specified job. The disability selected was either a good or poor fit with the job, but this did not affect the performance of the actress in the video. After watching the video, participants were given performance records of the employee they watched and these varied from good performance (94^{th} percentile) to a moderate level (50^{th} percentile) to poor performance (6^{th} percentile). The results of this study revealed that performance ratings were not significantly impacted by disability status, but instead varied as a function of the objective performance as indicated in the performance records. However, disability status did affect judgments of future performance as well as recommendations for job advancement, thus indicating that clear stereotypes associated with disability status still exist even when performance records suggest that these stereotypes are invalid.

In general, it appears that individuals with intellectual disability may enter the performance appraisal process at a disadvantage when the disability status is known by the rater. This highlights several issues that such individuals may face in school and work settings. The next section will specifically examine prior research on the effects of intellectual disability classification on teachers' expectations of academic performance.

Previous Research on the Effects of Intellectual Disability Classification

Overall, much research has been conducted on the effects of intellectual disability classification on teacher and parent expectations of performance. However, these studies have generated mixed results and employed a variety of unique methodologies. For the purposes of this study, the review of previous research will focus primarily on those studies that found that the intellectual disability classification did have an impact on expectations and that also included a manipulation of performance in their design. The findings of previous research will be discussed as follows: attitudes about inclusion and their role in teacher expectations, the effects of intellectual disability classification on teacher expectations, and the effects of intellectual disability classification on parent expectations.

Attitudes about Inclusion and their Role in Teacher Expectations

One factor that plays a significant role in the effect of the intellectual disability classification on teacher expectations is their attitudes about inclusion. Although inclusion has been in practice to an extent for several decades, the Individuals with Disabilities Education Improvement Act of 2004 brought several changes to the education system regarding the placement of children with intellectual disability. As mentioned previously, this act stated that all students with disabilities must have access to a general-education classroom and must spend the maximum amount of time possible in that classroom while still allowing for these students to

receive an education that is suited to their individual needs (Jorgensen et al., 2007). Much research has been conducted to support this legislation and it has been cited that students with intellectual disability become more engaged in the learning process, develop better communication and social skills, and perform at a higher level on standardized measures of assessment when they are placed in general-education classrooms (McGregor & Vogelsberg, 1998; Wehmeyer, Lattin, Lapp-Rincker, & Agran, 2003). Accordingly, since the emergence of these findings, 545,000 school-age children with an intellectual disability are currently spending at least a portion of their school day in a general-education classroom (National Dissemination Center for Children with Disabilities, 2011).

However, teachers' attitudes express a much more complex outlook of inclusion than the idealistic view of the Individuals with Disabilities Education Improvement Act and the research used to support it. Scruggs and Mastropieri (1996) conducted a meta-analysis of 28 studies that surveyed approximately 10,000 general-education teachers on their perceptions of the inclusion of children with intellectual disability into mainstream classrooms. The meta-analysis revealed that while two-thirds of general-education teachers favored the basic concept of inclusion, only a small majority of teachers welcomed the possibility of having children with intellectual disability in their own classrooms. General-education teachers were also less inclined to support inclusion when it involved children with intellectual disability as opposed to other disability groups, such as children with physical disabilities. Further, less than one-third of teachers believed that inclusion was the most beneficial educational option for children with intellectual disability and that it resulted in significant academic and social gains for these students.

In addition to teachers' general attitudes toward inclusion, Scruggs and Mastropieri (1996) sought to find potential reasons behind such negative attitudes. It was determined that

general-education teachers were less receptive to having children with intellectual disability in their classrooms because they felt they lacked the training necessary to handle the specific needs of the child. Further, Feldman and Altman (1985) asserted that teachers may be opposed to inclusion due to the perception that children with intellectual disability can threaten the instructional focus of the classroom by demanding an increased amount of time and responsibility from the teacher. As such, if a classroom has a strong academic focus, perceptions about children with intellectual disability falling short of the high scholastic standards may result in lower teacher tolerance and peer acceptance (Kavale & Forness, 2000).

More recently, Avramidis and Norwich (2002) conducted a meta-analysis of studies pertaining to teachers' attitudes on the inclusion of individuals with intellectual disability into regular classrooms. Although they found that teachers' views on the issue may be getting slightly more positive over time, there was no evidence of full tolerance or acceptance of inclusion. This meta-analysis also examined factors that impact teacher attitudes on the issue. The most dominant factor pertains to the severity of the intellectual disability (ID), such that teachers have more positive views of inclusion when the children in question only have mild or moderate forms of ID (Avramidis et al., 2002; Smith, 2000). In addition, several teacher-related variables were also found to play a role in attitudes towards inclusion. In general, teachers who are younger, have fewer years of teaching experience, have more contact with individuals with intellectual disability, and who have had more training with special populations are more likely to hold positive views (Avramidis et al., 2002). Overall, these findings on teachers' attitudes towards inclusion reveal a portion of why general-education teachers may hold such lowered expectations of children with intellectual disability.

The Effects of Intellectual Disability Classification on Teacher Expectations

As mentioned previously, there is much research indicating the negative effects of intellectual disability classification on general-education teachers' expectations of a child's cognitive performance in the classroom (Aloia & MacMillan, 1983; Foster et al., 1975; Gillung & Rucker, 1977; Rolison & Medway, 1985; Yoshida & Meyers, 1975). However, some studies indicate a minimal to nonexistent effect of the intellectual disability classification on the attitudes and expectations of others, thus yielding inconsistent results and also highlighting the methodological differences regarding the amount of information provided in conjunction with the classification between each study (Aloia, 1975; Budoff & Siperstein, 1978; Palmer, 1980). For example, Aloia (1975) examined the effects of intellectual disability classification and physical attractiveness on ratings of subnormality by having participants view pictures of these individuals, while Palmer (1980) manipulated the impact of classification by asking teachers to rate child performance after giving them only the classification, only psychometric data, or both. Despite this discrepancy in findings, researchers have reached a general consensus that the classification of intellectual disability does have a negative impact on teachers' expectations of academic performance (Rolison & Medway, 1985). For the purposes of this study, only the most relevant research in which classification had an effect on teacher expectations and a manipulation of performance was included will be discussed.

Aloia and MacMillan (1983) examined the effects of the intellectual disability classification on general-education teachers' expectations in various areas, such as the academic and social/behavioral domains. Each teacher was given a folder that resembled a real student school file and contained basic demographic information, a current photograph, a low, average, or high performance vignette describing the child's academic, behavioral, and social traits, and

either a classification of intellectual disability or no classification at all. The teachers were asked to evaluate their initial expectations for this child who had recently moved into the area and could potentially be a student in their classroom the following year. In general, the results indicated that the intellectual disability classification did have a significant negative effect on teachers' expectations of the child's academic ability, the teachers' ability to work with the child, and the teachers' general impression of the child. However, the researchers did note that the amount of variance accounted for by the intellectual disability classification was very small and that the presence of competing information provided by the vignettes (low, average, or high performance) may have limited the overall influence of the classification.

In a similar study, Rolison and Medway (1985) examined the effects of no classification, a classification of learning disability, and an intellectual disability classification on teachers' expectations for a hypothetical child's future academic performance. General-education teachers with at least two years experience were given a booklet containing the child's classification, basic demographic information, a record of performance patterns on 20 previously taken standardized tests, and the child's participation in either no special education class, a resource room, or a self-contained special education classroom. In regards to the record of performance patterns, teachers were given a sheet that showed whether the child had exceeded the district average on each of the 20 tests. The record exhibited either an ascending pattern in which the child's performance on the test was improving, or a descending pattern in which the child's performance was declining.

The results of this study indicated that the general-education teachers did give lower IQ estimates and more negative predictions about future academic performance to the children with the intellectual disability classification than both the children with the classification of learning

disability or no classification at all. Further, it was found that past performance was a more significant predictor of teacher expectations than intellectual disability classification, such that ascending patterns of achievement in which the child's scores improved produced greater expectations than descending performance.

Another interesting component of the Rolison and Medway (1985) study was their inclusion of a scale assessment of performance attributions. In accordance with previous studies, teachers were asked to evaluate the hypothetical child's performance as due to one of the following causes for explaining academic success or failure: general student ability, student effort during the test, test difficulty, student health, previous educational placement, prior teachers, family influences, and student mood during the test (Palmer, 1980; Severance & Gasstrom, 1977; Weiner & Kukla, 1970). Generally, a lower performance of a child with intellectual disability is attributed to general ability, while failure of a typically developing child is most often attributed to low effort or another external cause. Conversely, when a child with intellectual disability performs well, their success is attributed to a secondary factor such as effort or luck. However, the same performance by a typically developing child would be viewed as due to ability. Similarly, in the Rolison and Medway (1985) study, teachers were most likely to attribute the performance of a child with the intellectual disability classification to general student ability, family influences, or characteristics of the test itself.

Finally, Stanley and Comer (1988) examined the effects of the intellectual disability classification alone as well as the impact of the classification when paired with observable behaviors performed by a male child actor. The results revealed negative reactions to the child actor when the classification was presented alone, but these negative effects disappeared when participants were able to observe the child actor's actual behaviors. This study further indicates

that the negative impact of the intellectual disability classification can be diminished when more positive competing information is present.

Overall, the results of the previously mentioned studies do indicate the negative impact of the intellectual disability classification on teachers' expectations of cognitive performance. However, the Aloia and MacMillan (1983), Rolison and Medway (1985), and Stanley and Comer (1988) studies highlight the fact that when other information, such as performance vignettes or a record of performance patterns, accompanies the classification, the negative effects can be minimized. These findings replicate previous research stating that the influence of a classification may be diminished in the presence of other information (Freeman & Algozzine, 1980) and, more importantly, studies citing that the negative effect of a classification can be overcome to an extent if performance is inconsistent with the information conveyed by the classification (Reschly & Lamprecht, 1979). In other words, people might not hold such negative performance expectations for individuals with a classification of intellectual disability when their actual performance contradicts the stigma and stereotypes associated with the classification.

The Effects of Intellectual Disability Classification on Parent Expectations

Similar to that of teacher expectations, research on the effects of intellectual disability classification on parent expectations of cognitive performance yields inconsistent results and employs a variety of methodologies. While some studies have indicated the tendency of parents to overestimate the abilities of their preschool and school-age children with intellectual disability, (Heiman, 2002), other studies have found that parent ratings of their child's performance were unrelated to ability level and instead revealed low expectations (Arabsolghar & Elkins, 2000). Miller (1988) attempted to clarify the inconsistency in these findings by

conducting a review of literature in this area. He found that a majority of the literature indicated that parents are fairly good at judging their children's general intellectual ability, such that parent judgments typically correlate with IQ scores and academic performance in the range of .5 to .7. However, it was noted that the most common error in parent judgments occurred in the form of overestimation of their child's ability, and this holds true for parents of children with an intellectual disability as well. Further, parental overestimation may decrease as the child ages and parents receive more feedback on the child's actual ability level. In general, very little research has been conducted on this topic and is an area that needs much further clarification.

Purposes and Hypotheses

For the current study, the effects of intellectual disability classification on teacher and parent interpretations of cognitive performance were explored by having participants watch a brief video of a child who was classified as either typically developing or as having an intellectual disability. Participants were informed of only the child's age and classification. In addition, the child in the video performed at either a predetermined low level of ability or a predetermined high level of ability.

Accordingly, the primary purpose of this study was to clarify the previous findings on the effects of classification on teacher and parent interpretations of performance. Given that a majority of literature in this area is rather dated, it is important to reexamine this issue in light of societal changes and the passing of legislation such as the Individuals with Disabilities Education Improvement Act in 2004. A secondary purpose of this study was to further explore the Freeman & Algozzine (1980) and Reschly and Lamprecht (1979) findings that the negative effects of intellectual disability classification can be minimized, and even eliminated, in the presence of additional or competing information. This study attempted to determine how the

effect of classification on teacher and parent expectations changes in conjunction with the child's level of performance on the selected cognitive task. Finally, a third purpose of this study was to replicate the findings of Rolison and Medway (1985) in regards to the teacher and parent attributions of performance.

As more of an exploratory addition to the study, a group of special education teachers were included to determine if their expectations differ from that of general-education teachers. While no known research has previously addressed this issue, it is important to explore the expectations of special education teachers since children with intellectual disability often spend a portion of their day with these teachers. Further, special education teachers have the intensive training necessary to address the individual needs of each student, a quality that general-education teachers lack and that greatly contributed to their negative views of the inclusion of children with intellectual disability in their own classrooms.

Based on the purposes of this study, several hypotheses regarding the effects of intellectual disability classification on teacher and parent expectations of cognitive performance as measured by the estimated number correct on the time-telling task and the IQ estimate for the child were devised.

1. General-education teachers will have the lowest expectations of cognitive performance when the intellectual disability classification is present because they lack the specialized training necessary to teach such children.
2. In accordance with Miller (1988), parents will have the highest, and sometimes most unrealistic, expectations of cognitive performance when the intellectual disability classification is present.

3. Special education teachers will have the most accurate and ability-based expectations of cognitive performance when the intellectual disability classification is present because they have extensive training and the most experience with such populations of children.
4. In accordance with Aloia & MacMillan (1983) and Rolison & Medway (1985), there will be a main effect of classification (intellectual disability vs. typically developing), such that expectations of cognitive performance will be lower for the intellectual disability classification regardless of participant group and performance level.
5. Based on Freeman and Algozzine (1980) and Reschly and Lamprecht (1979), there will be a main effect of performance (low level of ability vs. high level of ability), such that expectations will be greater, regardless of classification or participant group, when a high level of ability video is watched.
6. If classification has a greater impact than level of performance, participant judgments will be significantly lower for the classification of intellectual disability because the actual performance on the cognitive task is not overriding the negative effect of classification.
7. If level of performance has a greater impact than classification such that it overrides the negative effect of classification, participant judgments for the classification of intellectual disability will exhibit a greater change from the low and high ability conditions than the typically developing classification. Accordingly, for the classification of intellectual disability, participant judgments for the high ability condition will be significantly greater than for the typically developing classification due to the violation of expectations of performance on the cognitive task.

8. Based on the findings of Rolison & Medway (1985), participants in each group will attribute the cognitive performance of the individual with intellectual disability as due to general student ability in the low ability condition and as due to external factors in the high ability condition. However, this pattern of participant attributions will be the opposite for the individual with the typically developing classification.

METHODOLOGY

Design

The current study utilized a 3 x 2 x 2 between-subjects design. The variables of interest included participant group (general-education teachers, special education teachers, and parents of children with intellectual disability), level of performance (low and high) on the cognitive task in the video, and the classification of the child in the video (intellectual disability and typically developing). A between-subjects design was chosen to limit the possibility of a participant predicting any of the experimental hypotheses by evaluating both classifications, and completing the study in accordance with these predictions.

Participants

135 participants completed this study, including 61 general-education teachers, 24 special education teachers, and 50 parents of children with intellectual disability. 18 total participants, comprised of 7 general-education teachers, 4 special education teachers, and 7 parents, were excluded from the study for either violation of the exclusionary criteria or failure to follow the directions of the study.

Parents who completed the study were primarily female (97.67%) and ranged in age from 34 to 62 (M = 47.81, SD = 6.95). These parents also had a child with a documented intellectual disability between the ages of 5 and 21 (M = 14.21, SD = 4). This age range was selected because parents with children between these ages would be familiar with the school setting as well as the cognitive task depicted in the video. See Table 1 for parent's ratings of their child's level of functioning as measured by IQ estimates. Additionally, parents who had ever completed

a teacher certification program or who had adopted a child with intellectual disability were also excluded from the study.

Table 1

Parent Estimates of their Child's IQ

	N	%
IQ Estimate		
Below 20 (Profound ID)	0	0 %
20-34 (Severe ID)	6	14.29 %
35-49 (Moderate ID)	8	19.05 %
50-69 (Mild ID)	19	45.24 %
70-79 (Borderline)	9	21.43 %
80-89 (Low Average)	0	0 %
90-109 (Average)	0	0 %
110-119 (High Average)	0	0 %
120-129 (Superior)	0	0 %
130 and Above (Very Superior)	0	0 %

Note: $n = 42$. (One parent selected not to answer this question on the survey.)

Parent participants were primarily recruited from the University of Alabama Intellectual Disabilities Participant Registry. Developed within the past few years, the UAIDPR recruits families of children with intellectual disability from throughout the state of Alabama, as well as the surrounding states of Georgia, Mississippi, and Florida. The registry coordinator called all members of the registry who met the inclusion criteria and passed along interested individuals to the researcher. An email with a link to the survey was then sent to the parent participants.

Parents were also recruited from organizations that serve individuals with intellectual disability within the state of Alabama and the surrounding states. These organizations were primarily parent support groups but also included educational programs and schools for individuals with intellectual disability. Once permission to distribute the study had been granted by the program director, an email was sent to all parents involved with the group and those who were interested in participating replied to the researcher and were later sent a link to the survey.

Teachers who completed this study were primarily female (*M* = 88.89 % for general-education teachers and 100 % for special education teachers) and ranged in age from to 22 to 62 (*M* = 37.65, *SD* = 9.12 for general-education teachers and M = 40.25, *SD* = 11.4 for special education teachers). Other descriptive statistics for both groups of teachers can be found in Table 2. Based on the participant populations used in previous research, both general-education and special education teachers served at the elementary level and worked with students in second through fifth grades. Further, this grade range of teachers was selected due to the fact that all children in the state of Alabama must receive a diagnosis other than developmental delay from the school system by the age of 9. Therefore, teachers working with children in these grades should be familiar with the intellectual disability classification as well as the material being used in the cognitive task in this study. Teachers who taught grades other than second through fifth were excluded from the study along with teachers who were also the parent of a child with intellectual disability.

Table 2

Descriptive Statistics for General-Education and Special Education Teachers

	Years of Teaching Experience	Years of Experience with ID	Experience Ratio (Years with ID /Years Experience)	Knowledge of ID
General-Education Teachers	11.21 (7.71)	8.67 (5.29)	.829 (.26)	6.25 (1.69)
Special Education Teachers	12.68 (10.21)	10.7 (10.47)	.811 (.329)	7.5* (2.19)

Note: The knowledge variable was measured on a 1 to 10 scale with 1 meaning no knowledge at all and 10 meaning a vast amount of knowledge.
* $p < .05$, two tailed.

General-education teachers and special education teachers were primarily recruited from school systems throughout the state of Alabama. Study approval was first requested from the school system as a whole and then from each individual school in the system. If approval was granted, each teacher was sent an email with the study information and was asked to reply to the researcher if interested in participating. Once the researcher was contacted by an individual teacher, a link to the survey was sent via email.

A small subset of special education teachers was also recruited from the Special Education and Multiple Abilities graduate program at the University of Alabama. Once permission was granted by the department chair, an invitation to participate in the study was sent to students in the master's and doctoral programs via email, and a link to the survey was later sent upon reply of the interested individual. Although the invitation to participate was distributed to everyone in the graduate program, only those teachers who currently taught special education at the elementary level were allowed to complete the study.

Measures

Video Stimuli. For the purposes of this study, participants watched a video of a child who was given either a classification of typically developing or as having an intellectual disability. The use of video was selected instead of having participants view a hypothetical student folder because of the research stating that exposure to individuals with intellectual disability, including that of videos and social media, may influence the attitudes of others in a positive manner (Siperstein, Norins, & Mohler, 2007). For each video, the child actor was coached as to his response on each question in the task. Overall, each video lasted approximately 5 minutes.

Due to the fact that previous research did not go into detail regarding the gender and age of the hypothetical student, this study used a typically developing male around the age of 8 as the

actor in the video stimuli. This age was selected because sufficient knowledge to complete the cognitive task in the video would be present by this age. Further, the male child was filmed from behind so that he was able to serve as the actor in both classification conditions (typically developing and intellectual disability).

In regards to the cognitive task in the video, the child actor completed 20 questions that demonstrated his ability to tell time by asking him to model a spoken time on a toy clock. This aspect of cognition was selected because children with intellectual disability have greater difficulty with more conceptual items, such as money and time (National Dissemination Center for Children with Disabilities, 2011); however, telling time is an area in which it is still believable that a child with intellectual disability could perform well. In addition, participants in each group (general-education teachers, special education teachers, and parents) were able to easily identify if the child actor is answering the time questions correctly or incorrectly.

Finally, the child actor's performance in the videos exhibited either low performance or high performance. In the low performance group, the child actor performed very poorly, getting only a predetermined 7 out of 20 problems correct. Conversely, in the high performance group, the child actor performed very well, getting a predetermined 17 out of 20 questions correct. These numbers were selected to reduce performance ambiguity, thus ensuring that the participants were viewing the child actor as performing either very poorly or very well. To manipulate the levels of performance in the videos, the researcher recorded alternate responses and edited them into the video to make some of the child's answers appear incorrect. Further, the incorrect responses depicted in the videos were chosen to mimic common errors that children make when learning to tell time. For example, children often mix up the two hands of the clock, experience difficulty in counting by fives, and have trouble with more abstract concepts such as a

quarter to and half past (Catterall, 2008). See Appendix A for a detailed look at the actual time questions and the predetermined responses for the low and high ability performance conditions.

Evaluation of Performance Questionnaire. This questionnaire was administered after the video was watched and it asked participants to make judgments of the child's performance on the cognitive task. Questions included the number of items they thought the child in the video got correct and their estimate of the standard IQ range for the child, with these ranges and descriptive categories being adapted from a variety of intelligence tests. Participants were instructed that 100 is the average IQ score before completion of this question and were given the following IQ ranges to choose from: Below 20 (Profound ID), 20-34 (Severe ID), 35-49 (Moderate ID), 50-69 (Mild ID), 70-79 (Borderline), 80-89 (Low Average), 90-109 (Average), 110-119 (High Average), 120-129 (Superior), and 130 and above (Very Superior). See Appendix B for a sample of this questionnaire.

Attributions of Performance Scale. The attribution scale from Rolison and Medway (1985) was used to determine why the participants believed the children performed at the level that they did. All participants were asked to rate on a scale of 0-6, with 0 meaning not important at all and 6 meaning very important, the influence of the following factors on the child actor's performance during the cognitive task: general student ability, student effort during the task, task difficulty, student health, previous educational placement, prior teachers, family influences, and student mood during the task (see Appendix C).

Demographic Questionnaire. Participants were then asked to complete a basic demographic questionnaire which also served as a means of identifying those participants who met our exclusion criterion. For general-education and special education teachers, this included questions regarding their age, teaching certification and year received, total years of experience,

and experience with individuals with intellectual disability in their classrooms (see Appendix D). By asking questions regarding the type of teaching certification and the year it was received, it could be determined which certification best equips teachers to handle individuals with intellectual disability as well as if certification programs have improved over time in conjunction with the passing of legislation such as the Individuals with Disabilities Education Act. Additionally, in order to clarify the amount of previous experience with special populations, general-education teachers were asked the number of years in which a child with intellectual disability had been in their classroom, and special education teachers were asked the number of years that they had been working in special education only. Parents of children with intellectual disability were asked their age, the diagnosis, if known, of their child, the age of their child with intellectual disability, and the degree (mild, moderate, severe, or profound) of their child's disability among other questions (see Appendix E).

Procedure

Due to its questionnaire-based nature, this study was completed online by all participants. Once a general-education teacher, special education teacher, or parent expressed interest in participating, they were sent a link to the survey. In order to avoid the issue of deception, participants were asked to simply imagine that they were needed as pilot members of a new community initiative that uses the opinions of school administrators, teachers, and parents for the educational placement of new students. All participants were further instructed to imagine that they had been asked as part of this initiative to evaluate the cognitive ability of a child who had recently moved into the area and will soon be placed in a local elementary school. This story provided sufficient motivation for participants to complete the study, but did not reveal too much information regarding the specific hypotheses of the study.

At the conclusion of the necessary consent process, participants watched a video of the child actor completing one of the following four conditions: typically developing classification/low performance, typically developing classification/high performance, intellectual disability classification/low performance, and intellectual disability classification/ high performance. Participants were only given the age and classification of the child prior to watching the video. The video that was sent to a participant was determined through random assignment. Once the video was finished, each participant completed the Evaluation of Performance Questionnaire and the related Attributions Scale in reference to the child's performance. Participants were then asked to complete the Demographic Questionnaire for their appropriate group (teacher or parent). Further, the responses to the survey were recorded electronically via Survey Monkey and were accessible to only the researchers. Upon completion of these questionnaires, the participants were debriefed and received information in regards to the true purpose of the study. Participants were also asked to not disclose any information regarding the study to family, friends, or colleagues until a specified date in which data collection had been completed. Overall, the study required no more than 15 minutes for participants to complete.

RESULTS

Due to a disparity in group size, the data was examined in the following way. Multivariate analysis of variance procedures were first used to explore group differences between parents and general-education teachers. This comparison was done in accordance with previous research in this area. The same procedures were then used to evaluate group differences between general-education teachers and special education teachers. As no known research in this area has ever been done with special education teachers, it was deemed most important to examine how they performed in comparison to their general-education counterparts. Further, there is no evidence to suggest the presence of meaningful differences between the interpretations of parents and special education teachers.

For each multivariate analysis of variance (MANOVA), the two primary dependent variables, estimated number correct on the time-telling task and the IQ estimate for the child, were analyzed. Means for the estimated number correct and the IQ estimates can be found in Figures 1 and 2. The values for the estimated number of questions answered correctly could range from 0 to 20 and the IQ estimate categories were assigned the following numerical values for the purpose of data analysis: 1 = Below 20 (Profound ID), 2 = 20-34 (Severe ID), 3 = 35-49 (Moderate ID), 4 = 50-69 (Mild ID), 5 = 70-79 (Borderline), 6 = 80-89 (Low Average), 7 = 90-109 (Average), 8 = 110-119 (High Average), 9 = 120-129 (Superior), and 10 = 130 and above (Very Superior).

Figure 1

Means of Estimated Number of Correct on Time-Telling Task

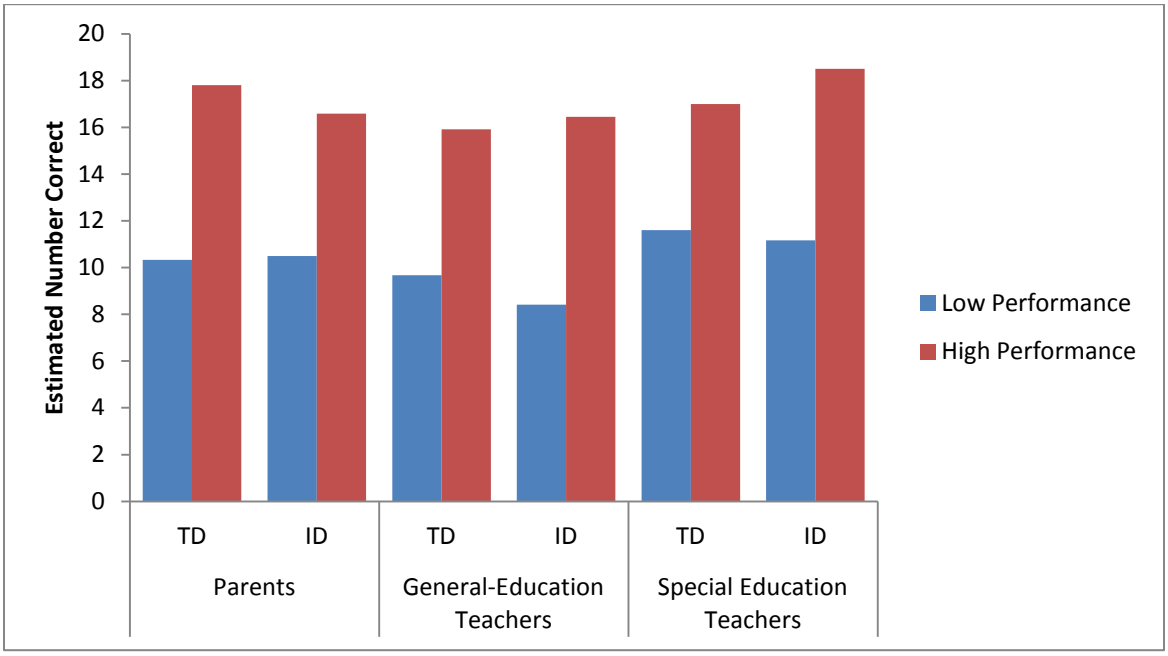
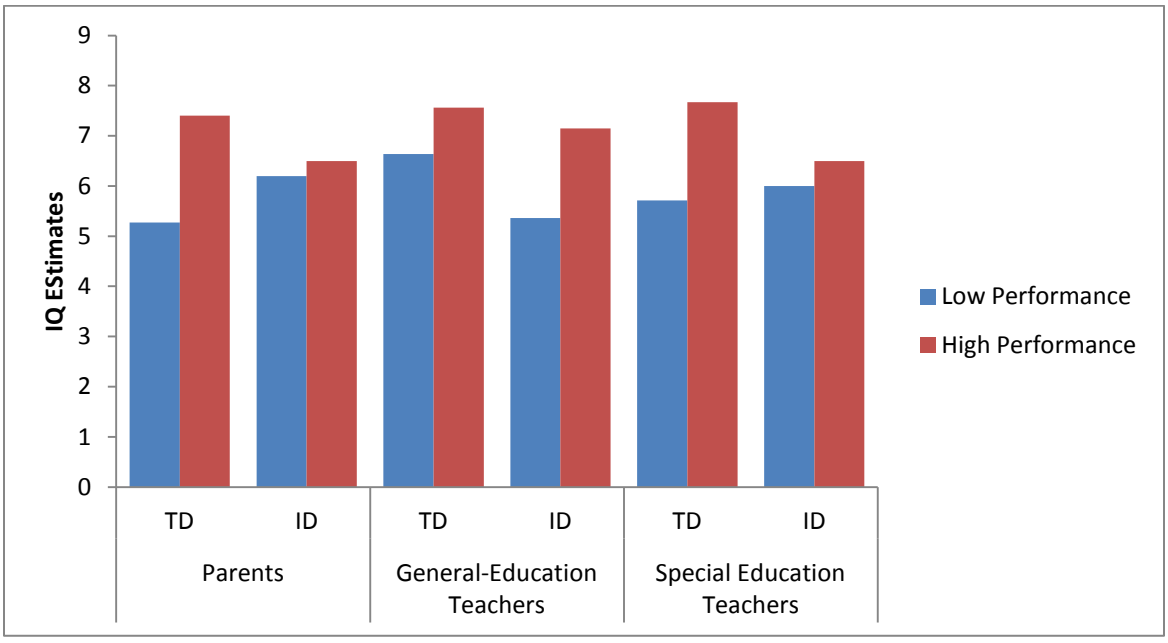


Figure 2

Means of IQ Estimates



It should be noted that a number of participants (approximately 12% equally distributed across conditions) failed to respond to the first question on the survey which involved estimating the number of correct answers on the time-telling task. Rather than eliminate these participants, who did respond to the other questions on the survey including the one involving IQ estimates, it was decided to use mean imputation to replace this missing data. Imputation was based on each condition mean and this procedure did not change the condition means. However, the consequence of using condition means for missing data is that it tends to reduce the magnitude of the error term. Therefore, it is necessary to be cautious in the interpretation of differences associated with the dependent variable of number correct.

In addition, the independent variables used in each MANOVA consisted of group (either parents and general-education teachers or general-education teachers and special education teachers), classification (TD and ID), and level of performance (low and high). All of the independent variables were manipulated between subjects. Finally, all significant effects in each MANOVA were subsequently evaluated using univariate analysis of variance procedures on number correct and IQ estimate separately.

Parents vs. General-Education Teachers

The results of the MANOVA for parents and general-education teachers revealed significant main effects of group (Wilk's $\lambda = .93$, $F[2, 88] = 3.306$, $p = .041$) and level of performance (Wilk's $\lambda = .335$, $F[2, 88] = 87.423$, $p < .001$). There was also a significant three way interaction of group x classification x level of performance (Wilk's $\lambda = .893$, $F[2, 88] = 5.283$, $p < .01$). A univariate analysis of variance (ANOVA) on the estimated number of questions answered correctly on the time-telling task revealed significant main effects of group ($F[1, 89] = 4.308$, $p = .041$) and level of performance ($F[1, 89] = 147.682$, $p = < .001$). In

general, parents (M = 13.85, SD = 4.36) viewed the child in the video as having answered more questions correctly than general-education teachers (M = 12.83, SD = 4.54), regardless of classification and level of performance. One sample t-tests comparing the estimated number correct to the actual number correct on the time-telling task indicated that both the general-education teachers, $t(53) = 2.52$, $p < .05$, and the parents, $t(43) = 3.57$, $p < .01$, overestimated the number correct. However, the general-education teachers were more accurate in their interpretations of performance overall. As for the main effect of level of performance, both parents and teachers viewed the child as answering fewer questions correctly in the low performance condition (M = 9.63, SD = 2.79) than the high performance condition (M = 16.58, SD = 2.81), thus indicating that the manipulation of performance in this study was successful.

A univariate ANOVA was also conducted to determine the effects of group, classification, and level of performance on the IQ estimate for the child in the video. The results revealed a significant main effect of level of performance ($F[1, 89] = 32.767$, $p = < .001$), such that participants viewed the child in the video as having a lower IQ when in the low performance condition (M = 5.83, SD = 1.36) than in the high performance condition (M = 7.18, SD = .97). The results also indicated a significant group x classification x level of performance interaction ($F[1, 89] = 8.992$, $p = < .01$). Tests of simple effects indicated that level of performance influenced the parent's estimates of IQ more for the typically developing classification (M = 5.27, SD = 1.49 for low performance and M = 7.40, SD = .52 for high performance) than it did for the classification of intellectual disability (M = 6.20, SD = 1 for low performance and M = 6.50, SD = 1.38 for high performance), $F(1, 39) = 6.30$, $p < .016$. This comparison was not significant for the general-education teachers ($F[1, 50] = 2.44$, NS) and was actually greater for the intellectual disability classification (M = 5.36, SD = 1.55 for low performance and M = 7.15,

SD = .69 for high performance) than for the typically developing classification (*M* = 6.64, *SD* = .67 for low performance and *M* = 7.56, *SD* = .81 for high performance).

General-Education Teachers vs. Special Education Teachers

Before describing the analyses for the general-education teachers and special education teachers, it should be noted that there was a considerably small sample size for the special education teachers. Therefore, due to a lack of power, any conclusions presented in regards to special education teachers are only tentative and should be interpreted with caution. Accordingly, the results of the MANOVA for general-education and special education teachers revealed significant main effects of group (Wilk's $\lambda = .904$, $F[2, 65] = 3.439$, $p = .038$) and level of performance (Wilk's $\lambda = .413$, $F[2, 65] = 46.211$, $p = <.001$), as well as a marginally significant main effect of classification (Wilk's $\lambda = .929$, $F[2, 65] = 2.494$, $p = .09$).

A univariate ANOVA on the estimated number of questions answered correctly on the time-telling task indicated significant main effects for group ($F[1, 66] = 6.333$, $p = .014$) and level of performance ($F[1, 66] = 75.905$, $p = <.001$). In general, special education teachers (*M* = 13.66, *SD* = 4.23) perceived the child in the video as having answered more questions correctly than general-education teachers (*M* = 12.83, *SD* = 4.54). Also, both general-education and special education teachers viewed the child as answering fewer questions correctly in the low performance condition (*M* = 9.8, *SD* = 3.05) than the high performance condition (*M* = 16.49, *SD* = 2.78).

Further, a univariate ANOVA on the IQ estimate for the child in the video revealed significant main effects of classification ($F[1, 66] = 5.03$, $p = .028$) and level of performance ($F[1, 66] = 20.414$, $p = <.001$). In general, participants gave lower IQ estimates when the child in the video was classified as having an intellectual disability (*M* = 6.22, *SD* = 1.42) than when

the child was classified as typically developing (M = 6.95, SD = 1.08). Finally, participants viewed the child in the video as having a lower IQ when in the low performance condition (M = 5.89, SD = 1.25) than in the high performance condition (M = 7.31, SD = .92).

Attribution Measures

Attribution measures were analyzed using univariate analysis of variance procedures and this was done for two primary reasons. First, the analyses were essentially exploratory in nature. Hence, while the potential exists for increased Type 1 error, these variables were included to suggest avenues of future research rather than reach final conclusions. Therefore, the purpose was to identify as many variables as possible that may be related to parent and teacher evaluations of student performance so that they may be considered in future research. Second, the relatively few previous studies that have used these and similar attributions have been conducted using univariate procedures (Rolison & Medway, 1985). Accordingly, it was necessary to use univariate procedures in this research to provide a basis for comparison with previous results. Further, special education teachers were excluded from these analyses due to the small sample size and resulting disparity between groups. For each attribution measure, group (parents and general-education teachers only), classification, and level of performance were used as independent variables while the particular attribution measure was used as the dependent variable. All attributions were rated on a scale of 0 to 6, with 0 meaning not important at all and 6 meaning very important. Attribution means can be found in Table 3.

Table 3

Attribution Means (Standard Deviations)

	Parents		General-Education Teachers	
	TD	ID	TD	ID
General Student Ability				
Low Performance	4.45 (1.75)	5 (1.63)	5.55 (.52)	4.86 (1.56)
High Performance	5.40 (.84)	5.25 (.87)	5.13 (.89)	4.77 (1.01)
Effort				
Low Performance	4.55 (1.81)	5.9 (.32)	5.55 (.69)	5.14 (1.35)
High Performance	5.5 (.85)	5.17 (.86)	5.31 (1.08)	4.62 (.77)
Task Difficulty				
Low Performance	4.78 (.97)	5.7 (.48)	5 (.89)	4.69 (1.6)
High Performance	5.4 (.84)	5.27 (.79)	4.69 (1.08)	4.5 (.91)
Child's Health				
Low Performance	4 (1.34)	5.2 (1.32)	4.73 (1.35)	4.85 (1.14)
High Performance	5.4 (1.08)	5.08 (1.24)	4.5 (1.41)	4.08 (1.38)
Previous Educational Placement				
Low Performance	4.18 (1.89)	5.1 (1.6)	5.27 (1.01)	4.93 (1.21)
High Performance	5.5 (.85)	4.58 (1.83)	4.62 (1.31)	3.77 (1.54)
Past Teachers				
Low Performance	4.45 (1.81)	5.5 (.85)	5.18 (1.17)	5.14 (1.03)
High Performance	5.5 (1.08)	5.08 (.99)	5 (.89)	4.15 (1.07)
Child's Family				
Low Performance	3.91 (2.07)	5 (1.7)	4.73 (1.74)	4.79 (1.25)
High Performance	5.3 (1.49)	4.33 (1.78)	4.94 (1.44)	4.23 (1.3)
Child's Mood				
Low Performance	4.45 (1.86)	5.7 (.68)	5.45 (.69)	5.29 (.83)
High Performance	5.5 (1.08)	5 (1.21)	4.87 (1.09)	5 (.91)

For the attribution of general student ability, the results revealed a marginally significant group x level of performance interaction ($F[1, 89] = 2.989$, $p = .087$), such that parents rated general student ability as more important in the high performance condition ($M = 5.32$, $SD = .84$) than the low performance condition ($M = 4.71$, $SD = 1.68$). However, general-education teachers viewed general student ability to be a more relevant factor for low performance ($M = 5.16$, $SD = 1.25$) than high performance ($M = 4.97$, $SD = .94$).

In regards to the attribution of effort, the results indicated a group x classification interaction (F[1, 89] = 5.878, p = .017), such that parents rated effort as more important for the ID classification (M = 5.5, SD = .74) than the TD classification (M = 5, SD = 1.48). Conversely, general-education teachers viewed effort as a more important factor when the child in the video was typically developing (M = 5.41, SD = .93) as opposed to having an intellectual disability classification (M = 4.89, SD = 1.12). In addition, the univariate ANOVA on effort identified a classification x level of performance interaction (F[1, 89] = 5.135, p = .026), thus indicating that both parents and general-education teachers viewed effort as a more important factor in the high performance condition (M = 5.38, SD = .98) than the low performance condition (M = 5.05, SD = 1.43) when the child in the video was classified as typically developing. However, when the intellectual disability classification was present, participants rated the effects of effort on task performance as higher when the child performed poorly (M = 5.46, SD = 1.1) instead of well (M = *4*.88, SD = .83) on the time-telling task.

For the attribution of task difficulty, the results revealed a significant main effect of group (F(1, 84) = 6.921, p = .01), such that parents (M = 5.3, SD = .82) rated task difficulty as a more important factor in determining performance than general-education teachers (M = 4.71, SD = 1.14).

In regards to the child health attribution, the results indicated a significant group x level of performance interaction (F[1, 88] = 4.544, p = .036), such that parents viewed the child's health as a more important factor in the high performance condition (M = 5.23, SD = 1.15) than the low performance condition (M = 4.57, SD = 1.43). Conversely, general-education teachers rated the child's health as more important in the low performance condition (M = 4.79, SD = 1.22) than the high performance condition (M = 4.31, SD = 1.39). In addition, the univariate

ANOVA on child health identified a marginally significant classification x level of performance interaction (F[1, 88] = 3.705, p = .057). In general, both parents and general-education teachers perceived child health as more relevant in the high performance condition (M = 4.85, SD = 1.35) than the low performance condition (M = 4.36, SD = 1.36) when the child was classified as typically developing, while child health was rated higher in the low performance condition (M = 5, SD = 1.21) than the high performance condition (M = 4.56, SD = 1.39) when the intellectual disability classification was present.

For the attribution of previous educational placement, the results revealed a group x level of performance interaction (F[1, 89] = 4.839, p = 0.3), such that parents rated previous educational placement as more important in the high performance condition (M = 5, SD = 1.51) than the low performance condition (M = 4.62, SD = 1.77). On the other hand, general-education teachers viewed previous educational placement to be a more relevant variable in the low performance condition (M = 5.08, SD = 1.11) than the high performance condition (M = 4.24, SD = 1.46). The univariate ANOVA on previous educational placement also indicated a marginally significant classification x level of performance interaction (F[1, 89] = 3.916, p = 0.51). In general, both parents and general-education teachers identified previous educational placement as more important in the high performance condition (M = 4.96, SD = 1.22) than the low performance condition (M = 4.73, SD = 1.58) when the child was classified as typically developing; however, when the intellectual disability classification was present, previous education placement was perceived as a more important factor in the low performance condition (M = 5, SD = 1.35) rather than the high performance condition (M = 4.16, SD = 1.7).

In regards to the attribution of past teachers, the results indicated a group x level of performance interaction of marginal significance (F[1, 89] = 3.751, p = .056), such that parents

rated past teachers as a more relevant factor in the high performance condition (M = 5.27, SD = .94) than the low performance condition (M = 4.95, SD = 1.56). Conversely, general-education teachers deemed past teachers as more important in the low performance condition (M = 5.16, SD = 1.07) than the high performance condition (M = 4.62, SD = 1.05). The univariate ANOVA on past teachers also revealed a classification x level of performance interaction (F[1, 89] = 5.964, p = .017). In general, both parents and general-education teachers viewed past teachers as more important in the high performance condition (M = 5.19, SD = .98) than the low performance condition (M = 4.82, SD = 1.53) when the child in the video was classified as typically developing. However, when the intellectual disability classification was present, participants rated past teachers as a more relevant factor in the low performance condition (M = 5.29, SD = .96) rather than the low performance condition (M = 4.6, SD = 1.12).

For the child family attribution, the results identified a significant classification x level of performance interaction (F[1, 89] = 4.653, p = .034), such that both parents and general-education teachers perceived the child's family as a more significant factor in the high performance condition (M = 5.08, SD = 1.44) than the low performance condition (M = 4.32, SD = 1.91) when the child was classified as typically developing. However, the child's family was deemed as more important in the low performance condition (M = 4.88, SD = 1.42) than the high performance condition (M = 4.28, SD = 1.51) in the presence of the intellectual disability classification.

Finally, in regards to the attribution of child mood, the results indicated a significant group x classification x level of performance interaction (F[1, 89] = 5.133, p = .026). In general, parents viewed child mood as a more important factor for high performance (M = 5.5, SD = 1.08) than low performance (M = 4.45, SD = 1.86) when the child in the video was classified as

typically developing. However, when the intellectual disability classification was present, parents identified child mood as more relevant for low performance (M = 5.7, SD = .67) than high performance (M = 5, SD = 1.21). In comparison, general-education teachers seemed to view the importance of child mood in a fundamentally different manner, such that they rated this attribution variable as more important for low performance (M = 5.36, SD = .76) than high performance (M = 4.93, SD = .99), regardless of classification.

Correlations

Several correlations were analyzed for each participant group to determine if any variables were related to the participant's accuracy of judging the child actor's performance on the time-telling task. Accuracy scores were derived by taking the absolute value of the difference between the participant's estimate of the number correct and the actual number correct for each level of performance (7 for low performance and 17 for high performance). In addition, the Pearson product-moment correlation coefficient was used to determine the significance of correlations between the accuracy scores and continuous participant variables, while the Spearman rank correlation coefficient was used for ordinal participant variables.

For participants in the parent group, parent age and several variables pertaining to their child with intellectual disability were correlated with accuracy scores. The child-related variables included the child's age, a classification of their intellectual disability (mild, moderate, severe, and profound), an estimate of their child's IQ, and a judgment of how the child in the video performed in comparison to their own child (much worse, somewhat worse, about the same, somewhat better, much better). None of these correlations yielded significant results.

In regards to general-education and special education teachers, the variables that were examined involved their personal experiences as a teacher. Variables included teacher age,

highest degree received, certification year, total number of years experience, number of years that at least one person with intellectual disability was in their classroom, total number of students with intellectual disability that they taught, and general knowledge of intellectual disability. The knowledge variable was rated on a scale from 1 to 10, with 1 representing no knowledge at all and 10 representing a vast amount of knowledge. Due to differences in teaching backgrounds, separate correlations were run for general-education and special education teachers. However, no significant correlations were found for any of the teacher variables for either group.

DISCUSSION

The primary goal of this study was to clarify the previous research on the effects of classification on parent and teacher interpretations of the cognitive performance of children with intellectual disability. Although previous literature in both the parent and teacher research indicated inconsistent results due to differences in methodology, it is widely accepted that the intellectual disability classification does have a negative impact on teacher and parent expectations of performance (Rolison & Medway, 1985). Further, as most of the literature in this area is rather dated, it is important to reexamine these findings in light of new legislation, such as the Individuals with Disabilities Education Improvement Act of 2004, which has revolutionized the incorporation of individuals with intellectual disability into the educational system. In this study, parent and teacher interpretations of performance were assessed by having participants watch a video of a child who was classified as either typically developing or as having an intellectual disability perform a time-telling task.

A secondary purpose of this study was to determine if the negative effects of the intellectual disability classification could be minimized, or even eliminated, in the presence of competing information, as indicated previously by Freeman and Algozzine (1980) and Reschly and Lamprecht (1979). In this study, the performance of the child in the video was manipulated such that participants watched the child perform either very poorly (7 out of 20 questions answered correctly) or very well (17 out of 20 questions answered correctly) on the time-telling task. If the competing information provided by performance did override the negative effect of classification, participant judgments for the classification of intellectual disability would exhibit

a greater change from the low and high ability conditions than the typically developing classification. Accordingly, for the classification of intellectual disability, participant judgments for the high ability condition would be significantly greater than for the typically developing classification due to the violation of expectations of performance on the cognitive task.

A third purpose of this study was to replicate the pattern of performance attributions indicated by Rolison and Medway (1985). According to their findings, lower performance of a child with intellectual disability is often attributed to general ability, while failure of a typically developing child is most often attributed to low effort or another external cause. Conversely, when a child with intellectual disability performs well, their success is not attributed to ability but instead to a secondary factor such as effort or luck. However, the same performance by a typically developing child is often viewed as due to ability. In this study, participants were asked to rate the role of the eight attributions on the child's performance on a scale (0 to 6) ranging from not important at all to very important.

Finally, an exploratory purpose of this study was to examine possible group differences between general-education and special education teachers. Although no prior literature has ever investigated this issue, there is reason to believe that special education teachers may interpret performance associated with the intellectual disability classification differently than general-education teachers. For example, special education teachers have the specialized training that general-education teachers often state that they lack, and special education teachers spend a good deal of time and have a great deal of experience with special populations.

Modified Hypotheses

Due to the small sample size of special education teachers, the results were analyzed by first conducting a MANOVA to compare general-education teachers and parents and then

conducting a separate MANOVA for general-education teachers and special education teachers. Based on the analyses selected, no comparisons can be made between parents and special-education teachers, thus highlighting a need for changes in the original hypotheses pertaining to group differences. The modified hypotheses are as follows:

1. General-education teachers will have the lowest expectations of cognitive performance when the intellectual disability classification is present.
2. Parents will have higher expectations of cognitive performance than general-education teachers when the intellectual disability classification is present.
3. Special education teachers will have more accurate and ability-based expectations of cognitive performance than general-education teachers when the intellectual disability classification is present.

Effects of Group on Participant Judgments of Performance

Several hypotheses were devised in regards to the effects of group (parents, general-education teachers, or special education teachers) on participant interpretations of the cognitive performance of the child in the video. First, it was hypothesized that general-education teachers would have the lowest expectations of cognitive performance when the intellectual disability classification was present because they lack the specialized training necessary to teach such children. This hypothesis was partially supported in that both parents and special education teachers estimated that the child in the video answered more questions correctly on the time-telling task than general-education teachers. However, general-education teachers were overestimating performance as well, as their estimations were significantly higher than the actual number of correct answers. As for IQ estimates, general-education and special education teachers had almost identical ratings, and these ratings were slightly lower than the parent

estimations of IQ when the intellectual disability classification was present. These results suggest that general-education teachers may no longer be falling victim to the negative effects of the intellectual disability classification as suggested in previous literature (Aloia & MacMillan, 1983; Foster et al., 1975; Gillung & Rucker, 1977; Rolison & Medway, 1985; Yoshida & Meyers, 1975). This may be due to recent legislation that has restructured the placement of individuals with intellectual disability within the educational system. As a result of legislation such as the Individuals with Disabilities Education Improvement Act of 2004, general-education teachers now have more experience with persons with intellectual disability and likely more knowledge of intellectual disability as a whole. This idea is partially supported in our teacher demographics such that general-education teachers reported similar numbers of years with children with intellectual disability in their classrooms as special education teachers. In addition, general-education teachers actually had a higher ratio of experience with intellectual disability as calculated by dividing years with ID by total years of experience; however, special-education teachers still rated themselves as having significantly more knowledge of intellectual disability than general-education teachers.

Second, it was hypothesized that parents would have higher, and sometimes more unrealistic, expectations of cognitive performance than general-education teachers when the intellectual disability classification was present. This hypothesis was fully supported such that parents had higher ratings of the number correct on the time-telling task as well as the IQ estimates in comparison to general-education teachers, thus suggesting that parents continue to possess a tendency to overestimate performance. These findings may have emerged as a result of parents comparing the performance of the child in the video to the ability of their own child, such that they viewed the child in the video as functioning at a higher level. Accordingly, they

may have been surprised by the level of functioning of the child in the video and thus gave higher ratings on the performance and IQ variables. In addition, parents may not be as versed on the evaluation of child performance on cognitive tasks as general-education teachers, which is another reason why parents may have been less accurate in their judgments. Further, parental overestimation for IQ estimates may have occurred in this study because parents are not as familiar with the general concept of IQ as teachers.

Third, it was hypothesized that special education teachers would have more accurate and ability-based expectations of cognitive performance than general-education teachers when the intellectual disability classification was present because they have extensive training and the most experience with such populations of children. This hypothesis was not supported as special education teachers greatly overestimated the number correct on the time-telling task and had the highest estimations of performance in comparison to general-education teachers. As for the IQ estimates, special education teachers had almost identical ratings to general-education teachers. Taken together, these results of number correct and IQ estimates suggest that, similar to parents, special education teachers have a tendency to overestimate the cognitive performance of individuals with intellectual disability. This may be explained by the fact that special education teachers likely have more experience with and knowledge of intellectual disability and thus have a more positive outlook of what individuals with intellectual disability can accomplish.

In addition, this difference in performance judgments may also be explained by a fundamental variation in teaching philosophy employed by the two teacher groups. While general-education teachers are often viewed as more concrete and evaluative in nature due to an emphasis on meeting standardized student achievement goals as determined by annual yearly progress, special education teachers often utilize a more strategy-based approach in their

teaching, such that they tend to focus on various ways to improve student performance. Accordingly, these differences in teaching focus could have impacted how the two teacher groups analyzed the performance of the child in the video, thus explaining why general-education teachers were more accurate in their judgments.

Effects of Classification and Level of Performance on Participant Judgments

The next set of hypotheses was designed to examine the effects of classification and level of performance on participant judgments of the performance of the child in the video. First, it was hypothesized that there would be a main effect of classification (intellectual disability vs. typically developing), such that expectations of cognitive performance would be lower for the intellectual disability classification regardless of participant group and performance level. In general, this hypothesis was not supported, as a main effect for classification was only identified for the IQ estimates of general-education teachers and special education teachers. This main effect may have emerged for these two groups as teachers may have a greater understanding of the general concept of IQ and thus know the standard ranges for typical development and intellectual disability. Further, these results suggest that level of performance may have been a more significant predictor of participant ratings of performance than classification, especially in regards to the number correct on the time-telling task.

Second, it was hypothesized there would be a main effect of performance (low level of ability vs. high level of ability), such that expectations would be greater, regardless of classification or participant group, when a high performance video was watched. This hypothesis was fully supported as there was a significant main effect of level of performance for both number correct and IQ estimates when parents were compared to general-education teachers

and general-education teachers were compared to special education teachers. Overall, this indicates that the manipulation of performance used in this study was successful.

Third, it was hypothesized that participant judgments would be significantly lower for the classification of intellectual disability if classification had a greater impact than level of performance because the actual performance on the cognitive task was not overriding the negative effect of classification. This hypothesis was not supported as classification did not play a significant role in participant interpretations of the performance of the child in the video. Instead, level of performance was a more significant predictor of participant judgments.

Finally, it was hypothesized that participant judgments for the classification of intellectual disability would exhibit a greater change from the low and high ability conditions than the typically developing classification if level of performance had a greater impact than classification such that it cancelled the negative effect of the classification. Accordingly, for the classification of intellectual disability, participant judgments for the high ability condition would be significantly greater than for the typically developing classification due to the violation of expectations of performance on the cognitive task. This hypothesis was supported for general-education and special education teachers but not for parents. Overall, general-education teachers placed a greater emphasis on level of performance such that their judgments exhibited a greater change from low and high performance conditions and they gave higher ratings in the high performance condition when the intellectual disability classification was present. This effect was also present to a lesser degree in special education teachers. In accordance with Freeman and Algozzine (1980) and Reschly and Lamprecht (1979), these results again suggest that teachers may no longer be falling victim to the negative effects of classification and may instead be

relying on competing information, such as level of performance, to make judgments of the ability of individuals with intellectual disability.

Pattern of Attributions

In regards to the eight attribution variables, it was hypothesized that participants in each group would attribute the cognitive performance of the individual with intellectual disability as due to general student ability in the low ability condition and as due to external factors in the high ability condition. However, this pattern of participant attributions would be the opposite for the individual with the typically developing classification. This hypothesis was not supported as no interaction was found between classification and level of performance for general student ability. It should be noted that all attributions were viewed as having a significant impact on performance, such that all ratings were higher than four except for one parent rating of child health which was a 3.91.

Further, for the attributions of effort, child health, previous educational placement, past teachers, child family, and child mood, the results indicated that these variables were viewed as more important for explaining high performance when the child in the video was classified as typically developing and low performance when the intellectual disability classification was present. These results suggest that participants had a tendency to focus on explaining the good performance of typically developing individuals, but instead tried to justify the poor performance of individuals with intellectual disability. However, it does seem to be a step in a positive direction such that these results indicate that people now recognize that factors other than general student ability play a role in the cognitive performance of individuals with intellectual disability.

Another interesting finding that emerged in regards to the attribution measures was the interaction between group and level of performance for general student ability, child health,

previous educational placement, past teachers, and child mood. These interactions revealed that parents rated these attributions as more important for high performance while general-education teachers deemed them as more relevant for low performance. These results suggest that parents and general-education teachers interpreted these attributions in a fundamentally different manner, such that parents used the attributions to justify good performance while teachers used them to explain poor performance.

Correlations

Several correlations were analyzed to determine if any participant variables were significantly related to the accuracy of participant judgments of cognitive performance. Although previous research indicated that variables such as the classification (mild, moderate, severe, or profound) of their own child's ID for parents and years of experience for teachers would correlate with accuracy, no significant correlations were found for parent or teacher variables. This lack of significant findings may be attributed to the fact that the performance estimates as measured by number correct were fundamentally accurate throughout the study. Further, level of performance was a stronger predictor of participant estimates of performance than classification, thus making the relationship between accuracy and the participant variables irrelevant.

Importance of Current Study

In summary, the results of this study revealed some interesting new findings on the effects of classification on parent and teacher interpretations of the cognitive performance of individuals with intellectual disability. First, contrary to the findings of older literature, general-education teachers did not fall victim to the negative effects of classification in the same manner as was previously indicated. Instead, level of performance was found to be a more significant

predictor of general-education teacher judgments than classification, such that the competing information provided by the level of performance cancelled out the negative effects of the intellectual disability classification. These findings are interesting because they indicate that the attitudes of general-education teachers may be changing, possibly as a result of new legislation that has restructured the inclusion of children with intellectual disability into mainstream classrooms. In addition, these findings suggest more positive outcomes for children with intellectual disability who spend time in general-education classrooms, such that their interactions with the teachers may no longer be clouded by the negative effects of the intellectual disability classification.

In addition, this study revealed some interesting findings in regards to the pattern of attributions used to explain the child's performance on the time-telling task. Previous studies found that when the classification of intellectual disability was present, low performance was attributed to general student ability while high performance was attributed to various external factors. Further, the opposite pattern of attributions was found to be true for the typically developing classification. However, in the present study, there was no interaction between classification and level of performance for general student ability. Instead, several other attributions were used to justify poor performance in the presence of the intellectual disability classification, thus indicating that participants are now examining various external factors other than general student ability as plausible explanations for the performance of individuals with intellectual disability. Additionally, parents and teachers seemed to view attributions in a fundamentally different manner, such that parents used the attributions to justify high performance while general-education teachers tried to explain poor performance. Again, these

results appear to be a step in a positive direction as individuals seem to be recognizing that factors other than ability are involved in the performance of children with intellectual disability.

Finally, this study examined some exploratory findings involving the comparison of the performance judgments of special education teachers to general-education teachers. Contrary to the initial prediction that special education teachers would have the most accurate and ability-based interpretations of performance, the results actually indicated a tendency of special education teachers to overestimate performance in a similar manner to parents. Although the sample size for special education teachers was especially small, the results of this study do suggest that special education teachers interpret the performance of individuals with intellectual disability differently than general-education teachers. However, this tendency for special-education teachers and parents to be less accurate than general-education teachers and overestimate performance when the intellectual disability classification is present may not necessarily be a negative thing. As participant groups who likely have more knowledge and experience with intellectual disability, this more positive outlook may be a natural result of working with children with intellectual disability and may allow for better interactions with and outcomes for the children themselves.

Limitations and Future Directions

Although this study yielded some significant findings, several limitations should be highlighted. The primary limitation for this study was the small sample size and the resulting disparity in size between participant groups. Despite this being an online survey, the recruitment process was rather difficult and the desired number of 60 participants per group (15 in each of the four conditions) was not reached. The sample size for special education teachers was especially low and prevented the study from making vast claims about the findings for this

group. Ideally, future research would gather a larger sample size with equality between participant groups so that there would be enough power to make sufficient claims about the findings of the study.

Further, our sample of parents may not have been representative of the broader population of parents with intellectual disability. As parents were recruited from the University of Alabama Intellectual Disabilities Participant Registry and service organizations throughout the Southeast, these participants may fundamentally differ from other parents of children with intellectual disability on variables such as socioeconomic status and child IQ. In addition, the eligibility criteria for the study may have further restricted the range of parent participants, thus limiting the variability of the results.

Another limitation of this study was the lack of ambiguity in the manipulation of level of performance. In this study, a stronger manipulation of level of performance in regards to number correct (7 out of 20 correct for low performance and 17 out of 20 correct for high performance) was used to ensure that performance differences were obvious. However, a better approach may have been to use a more ambiguous manipulation, such as 10 out 20 correct for low performance and 15 out of 20 correct for high performance, so that participant interpretations of performance would likely rely more on classification. This same research question could also be explored by increasing the amount of questions on the time-telling task so that it would be more difficult for participants to count the number correct, thus causing them to rely on other factors like classification in their performance judgments. Accordingly, these types of manipulations would be interesting avenues for future research.

In addition, the manipulation of performance used in this study differed slightly from previous research in that it provided only one aspect of performance. While previous studies

have given a more comprehensive picture of performance by providing vignettes or cumulative test scores, this study only provided participants with performance on an isolated task. Accordingly, classification may have played a lesser role in this study if participants did not view performance on the time-telling task as indicative of the child's overall intellectual ability. Future research could explore whether or not the findings indicated in this study would hold true if a more comprehensive picture of performance was given.

A final limitation for this study was the number of missing data points for the estimates of number correct on the time-telling task. Despite being the first question on the survey, a significant number of participants failed to respond and their missing responses had to be replaced via mean imputation. Although the reasoning behind the lack of responses for this question is unclear, attempts will be made in the future to make this question more prominent in the survey.

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LIST OF APPENDICES

Appendix A
Responses for Time-Telling Task by Performance Condition

Time Questions:	Response for LA Performance:	Response for HA Performance:
1. 3:00	3:00 (Correct)	3:00 (Correct)
2. A quarter to 8	8:45 (Incorrect)	8:45 (Incorrect)
3. 9:15	9:10 (Incorrect)	9:15 (Correct)
4. 4:30	4:30 (Correct)	4:30 (Correct)
5. 10:55	10:50 (Incorrect)	10:55 (Correct)
6. 1:45	1:40 (Incorrect)	1:45 (Correct)
7. 6:00	12:30 (Incorrect)	6:00 (Correct)
8. 8:30	8:30 (Correct)	8:30 (Correct)
9. Half past 12	6:00 (Incorrect)	6:00 (Incorrect)
10. 6:26	6:21 (Incorrect)	6:26 (Correct)
11. 4:00	12:20 (Incorrect)	4:00 (Correct)
12. 1:37	1:42 (Incorrect)	1:37 (Correct)
13. 2:10	2:10 (Correct)	2:10 (Correct)
14. 11:45	11:45 (Correct)	11:45 (Correct)
15. Ten after 6	6:05 (Incorrect)	6:10 (Correct)
16. 5:20	4:40 (Incorrect)	5:20 (Correct)
17. 6:30	6:30 (Correct)	6:30 (Correct)
18. 9:52	9:47 (Incorrect)	9:52 (Correct)
19. Five to 2	2:05 (Incorrect)	2:05 (Incorrect)
20. 7:15	7:15 (Correct)	7:15 (Correct)

Appendix B
Evaluation of Performance Questionnaire

1. In the video you just watched, how many of the 20 questions do you think the child answered correctly?

2. If 100 is the average IQ score, in which IQ range do you think the child in the video would fall?

Below 20 Profound ID	20-34 Severe ID	35-49 Moderate ID	50-69 Mild ID	70-79 Borderline

80-89 Low Average	90-109 Average	110-119 High Average	120-129 Superior	130 and Above Very Superior

Appendix C
Attributions of Performance Scale

For the following questions, think of the child in the video you just watched. Please circle an answer between 1 and 7, with 1 meaning not important at all and 7 meaning very important.

1. How important of a factor do you feel **general student ability** could have been for the child's performance on the task?

0	1	2	3	4	5	6
Not Important						Very Important

2. How important of a factor do you feel **effort** could have been for the child's performance on the task?

0	1	2	3	4	5	6
Not Important						Very Important

3. How important of a factor do you feel **task difficulty** could have been for the child's performance on the task?

0	1	2	3	4	5	6
Not Important						Very Important

4. How important of a factor do you feel **student health** could have been for the child's performance on the task?

0	1	2	3	4	5	6
Not Important						Very Important

5. How important of a factor do you feel **previous educational placement**, such as special education or gifted classes, could have been for the child's performance on the task?

0	1	2	3	4	5	6
Not Important						Very Important

6. How important of a factor do you feel **past teachers** could have been for the child's performance on the task?

0	1	2	3	4	5	6
Not Important						Very Important

7. How important of a factor do you feel the **child's family** could have been for the child's performance on the task?

0	1	2	3	4	5	6
Not Important						Very Important

8. How important of a factor do you feel the **child's mood** could have been for the child's performance on the task?

0	1	2	3	4	5	6
Not Important						Very Important

Appendix D
Teacher Demographic Questionnaire

Age: _____ Gender: _____

1. What kind of teaching certification do you have? Please circle all that apply.

General-Education Special Education Dual Certification

Year Received _____ Year Received _____ Year Received _____

2. What is the highest educational degree you have received?

3. How many total years of teaching experience do you have?

4. How many of these years have you served as a general-education teacher?

5. How many of these years have you served as a special education teacher?

6. How many of these years have you had a child with an intellectual disability in your classroom?

7. Approximately how many children with intellectual disability have you had in your classroom?

8. Do you currently have a child with intellectual disability in your classroom?

9. Have you ever attended any workshops relevant to the teaching of children with intellectual disability? If so, please list.

10. On a scale from 1-10 with 1 meaning no knowledge at all and 10 meaning a vast amount of knowledge, rate how much knowledge you have about individuals with intellectual disability.

11. Are you the parent of a child with an intellectual disability?

Appendix E
Parent Demographic Questionnaire

Age: _____ Gender: _____

1. What is the cause, if known, of your child's intellectual disability?

2. What is the age of your child with intellectual disability?

3. How would your child's intellectual disability most likely be classified?

Mild Moderate Severe Profound

4. If 100 is the average IQ score, in what range would your child's IQ fall?

Below 20	20-34	35-49	50-69	70-79
Profound ID	Severe ID	Moderate ID	Mild ID	Borderline

80-89	90-109	110-119	120-129	130 and Above
Low Average	Average	High Average	Superior	Very Superior

5. How did the child in the video perform in comparison to your child?

Much Worse Somewhat Worse About the Same Somewhat Better Much Better

6. Have you ever been certified as a general-education or special education teacher or been enrolled in a teacher preparation program?

Appendix F
Institutional Review Board Approval

Office for Research

Institutional Review Board for the Protection of Human Subjects

July 19, 2013

THE UNIVERSITY OF ALABAMA RESEARCH

Megan Benson Davis
Department of Psychology
College of Arts & Sciences
The University of Alabama

Re: IRB # 12-OR-330 (Revision #2) "The Effects of Classification on Teacher and Parent Interpretations of the Cognitive Performance of Children with Intellectual Disability"

Dear Mrs. Davis:

The University of Alabama Institutional Review Board has reviewed the revision to your previously approved expedited protocol. The board has approved the change in your protocol.

Please remember that your approval period expires one year from the date of your original approval, October 4, 2012, not the date of this revision approval.

Should you need to submit any further correspondence regarding this proposal, please include the assigned IRB application number. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants.

Good luck with your research.