

# South African Teachers' Attitudes Toward Learners with Barriers to Learning: ADHD and LNFS

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This study examined teachers' attitudes toward learners with two types of barriers to learning: a learner with attention deficit and hyperactivity disorder (ADHD) and a learner with little or no functional speech (LNFS). The results indicated that although teachers reported that the learner with ADHD would be more disruptive in class and have a more negative effect on the classroom climate, they overwhelmingly favoured including this learner over the learner with LNFS. The data indicated that teachers were concerned about the ability of the learner with LNFS to participate academically and socially in the classroom. They also were significantly more concerned about their own ability to cope with the learner with LNFS. The article concludes with the need for ongoing inclusive education training for all teachers in South Africa if successful inclusive education is to become a reality.

**Keywords:** Attention deficit and hyperactivity disorder (ADHD); barriers to learning; little or no functional speech (LNFS); inclusion; teachers' attitudes [AU: **Please include 8-10 keywords**]

## **Introduction**

There is a global move toward inclusive education for learners of all types, including those with barriers to learning based, in part, on international steering documents such as the Salamanca statement (UNESCO, 1994) and the Dakar framework (UNESCO, 2000). National policies promoting rights for equal educational access for all, irrespective of a learner's needs or potential educational barriers also are present in many countries, such as South Africa (National Department of Education, 2001). Education for all children from 7 to 15 years of age, including

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learners with barriers to learning, is compulsory and mandated by the South African Schools Act (Department of Education, 1996) and the Education White Paper 6: Special Needs Education (National Department of Education, 2001). This transformation in education practices presents teachers with new opportunities and challenges regarding the implementation of these policies.

Teachers are the driving force in the successful enactment of education policy as they are the gatekeepers of the classroom climate and activities. Depending on their attitudes toward inclusive policies, teachers can promote or hinder the success of inclusion (Avramidis & Kalyva, 2007). If they recognise the pedagogical merit of a policy then they can commit to efforts to make it effective (Pecek, Cuk, & Lesar, 2008). With positive attitudes toward inclusive education, many teachers dedicate extra instructional time and work with more intensity with their learners with educational barriers (Jordan, Glenn, & McGhie-Richmond, 2009). Yet, negative attitudes from teachers, parents, and politicians still have been suggested to be one of the biggest barriers to inclusive education internationally (Mittler, 1995).

As a whole, teachers report they favour the principle of inclusion yet many do not feel they have the training and resources to support learners who experience barriers to learning (Scruggs & Mastropieri, 1996), particularly those who have profound or multiple disabilities (Avramidis & Kalyva, 2007). Teachers also express concern about finding the right balance between adapting the curricula for learners with barriers to learning while providing a quality education for the rest of the class (Engelbrecht, Oswald, Swart, & Eloff, 2003; Silverman, Hong, & Trepanier-Street, 2010). Teachers may prefer including learners who need fewer accommodations and adaptations to the curricula, probably because many feel they already have a full workload. Research has found, for example, that teachers find learners with mild learning difficulties, language delay, and physical impairments the easiest to include in a mainstream classroom, followed by learners with

behavioural challenges such as ADHD, and they reported the most difficult learners to include in mainstream classes were learners with neurological disorders, sensory impairments, brain injury, or autism (Avramidis & Kalyva). Research within Africa also has highlighted the particular challenges (Johnstone & Chapman, 2009) and stressors (Engelbrecht et al.) experienced by teachers when including learners with intellectual disabilities into their classes; stressors may include learners' behaviour, competence, and lack of parent-teacher contact.

Educational inclusion is essential because it can enhance the academic achievement (Blackorby et al., 2005) and social skills of learners with barriers to learning, as well as facilitate understanding and empathy in typically developing learners. Teachers are imperative for the success of inclusive education; thus, the attitudes they bring to the classroom and the variables that may influence these attitudes should be explored (Basil, 1992). The purpose of this research was to describe and compare teachers' attitudes toward learners with two distinct types of barriers to learning, a learner with attention-deficit hyperactivity disorder (ADHD) and a learner with little or no functional speech (LNFS), as well as their attitudes about having these learners in their classroom. Variables related to teaching learners who experience educational barriers (i.e., exposure, number of learners with barriers to learning taught) also were examined to determine whether they affected teachers' attitudes toward these learners.

***Teachers' Attitudes about Learners with Barriers to Learning and Variables that may Influence these Attitudes***

Shifting perspectives toward the educational inclusion of all learners despite their distinct educational barriers are increasingly apparent within South Africa and internationally. This shift can be attributed to the changing views of disability; whereas historical views placed the onus of the disability within the individual (i.e., the medical model), the more modern perspective views disability as a result of the interaction between a person's impairments and the social and

physical barriers created by the environment (i.e., the social model; UNESCO, 1994). As the social model of disability has been embraced, teacher education pedagogies have evolved to correspond with this new perspective and teachers are learning how to educate a diverse body of learners within the same classroom.

Albeit slowly, the shift to inclusive education is indeed occurring in South Africa. Under the tenets of the previous medical model, however, teachers were taught that learners with barriers to learning were best educated in separate classrooms and these beliefs can be difficult to change (Ntombela, 2011). Teachers consequently were trained to teach either general education or special education classes. This has resulted in many South African teachers—particularly those who have been teaching for a number of years—having little to no training or experience with learners who experience educational barriers (Oswald, 2007).

Teachers' attitudes influence their classroom and communicative interactions with learners that, in turn, create the foundation for learning. Teacher-learner interactions may be particularly influential in the foundation school-phase since they can establish patterns of school and teacher engagement, which are reflected in learners' sense of belonging at school (Battistich, Solomon, Watson, & Schaps, 1997) and academic achievement (Hamre & Pianta, 2001). In fact, one of the primary factors that influence the development of academic skills for learners with barriers to learning in inclusive classrooms has been found to be high expectations from their teachers (Beukelman & Mirenda, 2005).

Variables that have been found to influence teachers' attitudes about inclusion include exposure and experience with learners who experience barriers to learning (Avramidis & Kalyva, 2007; Chhabra, Srivastava, & Srivastava, 2010). Due in part to lack of exposure, some teachers have low or no expectations that learners with educational barriers can or will participate in

classroom interaction and learning, which consequently results in the focus of their school day becoming caring and nurturing rather than instruction and inclusion (Bornman, Alant, & Uys, 2008). Teachers who have gained experience with learners with barriers to learning, on the other hand, tend to feel more self-efficacious about their ability to effectively educate such learners in a mainstream classroom (Avramidis & Kalyva, 2007; Thomas, Curtis, & Shippen, 2011). In a survey of teachers in Botswana who had not previously worked in inclusive settings, those who had a friend or family member with a disability evidenced significantly fewer concerns about including learners with barriers to learning in their classes (Chhabra et al., 2010), suggesting that mere exposure to people with disabilities may facilitate more positive attitudes regarding inclusion.

In addition to exposure, many teachers feel they lack the training to adequately teach learners with educational barriers. Some teachers express concern about their lack of knowledge about how to individualise programmes (Chhabra et al., 2010), while others express concern about the time, skills, and the necessary resources and supports to meet the academic requirements of learners who experience barriers to learning (Scruggs & Mastropieri, 1996). Teachers who receive additional training about inclusive education, however, have more positive attitudes concerning inclusion when compared to teachers who have not had such training (Silverman et al., 2010). Moreover, research has found that after taking a professional development course in inclusive education, teachers evidenced a positive change in attitudes about including learners with special needs in their class (Ching, Forlin, & Mei Lan, 2007; Kyriakou, Avramidis, Hoie, Stephens, & Hultgren, 2007).

### ***Learners with Barriers to Learning***

Affecting approximately two to 18 % of school-aged children (Mitchell & Mandall, 2005), ADHD is a condition with core symptoms of inattention, impulsivity and hyperactivity (Kos, Richdale, & Hay, 2006). In South Africa it is estimated that between 8 and 10% of the school going population has ADHD, implying that in a class of 30 learners, 3 would be expected to present with ADHD (Bornman & Rose, 2010). Learners with ADHD can be disruptive in class because of their inability to concentrate and focus on a single task, difficulty completing their classwork, problems staying seated, misunderstanding what is required of them to complete tasks satisfactorily (Phiffner & Barkley, 1990), and difficulty forming and maintaining relationships with peers (Kos et al., 2006). In order to effectively instruct learners with ADHD and allow for meaningful participation in classroom activities, teaching strategies often must be modified to provide greater structure and routine (Reid, 2005; Rose, 2009). Additional instructional teaching time also is required often (Atkinson, Robinson, & Shute, 1997).

Learners with LNFS, on the other hand, comprise about 1.3% of the population and are defined as those who have considerable communication difficulties or approximately less than 30 words of intelligible speech (Beukelman & Mirenda, 2005). Because of their complex communication needs, teachers sometimes feel uncertain about what learners with LNFS comprehend, need, and prefer (Dada, 1999). Consequently, teachers place fewer demands on them, leading to reduced communication opportunities and little motivation to develop more effective communication skills (Beukelman & Mirenda, 2005). Often people with LNFS utilise communication boards, which can take a relatively long time to communicate, especially when compared to natural speech (Bornman & Tonsing, 2011). This can result in communication partners becoming anxious or bored. Learned helplessness may ensue when, while trying to help

the learner, the teacher tries to anticipate what the learner wants to communicate thereby restricting the learner's opportunities to autonomously communicate and participate in classroom interactions (Basil, 1992; Beukelman & Mirenda, 2005). These teacher behaviours unintentionally thwart the learner's social and academic development, the two primary aims of inclusion (Reganick, 1995).

### ***Current Study***

Although several studies have examined teachers' attitudes toward inclusive practices, to date, no other studies have compared and contrasted teachers' attitudes between learners with ADHD and LNFS. It is against this background that the current study endeavours to describe and compare teachers' attitudes regarding the inclusion of two learners with these distinct barriers to learning. The two learners differ in areas of communication and behaviour within the classroom. Vignette A is about a learner with ADHD who is able to communicate verbally, but who tends to be overactive and disruptive in class. In contrast, Vignette B is about a learner with LNFS who uses a communication board to participate in the classroom, but who is passive and non-disruptive in class. Teachers' attitudes were assessed on various domains: the learner's general academic abilities, the learner's classroom behaviours, the learner's communicative interactions in the classroom, the inclusion of the learners in their classroom, as well as teachers' attitudes pertaining to their own capabilities to teach these learners.

### **Method**

Ethical clearance for conducting the study was obtained by the ethics committee of the University of Pretoria. Formal permission was obtained from the Northern Cape Department of Education. The Northern Cape Province is one of the poorest provinces in South Africa with relatively fewer resources than other provinces.

### ***Participants***

Government primary schools in the Kimberley area in the remote Northern Cape Province of South Africa were sampled for this study. First, a list of all primary schools in the Kimberley area was obtained, then 12 schools were selected using a simple random sampling technique, namely drawing names out of a hat. The principals of the chosen schools were contacted telephonically and informed of the nature of the study. Consent forms were then faxed and completed by the school principals. The 12 schools comprised three rural schools, three urban schools and six schools bordering the urban and informal settlement area.

All foundation phase teachers (Grade 1 to Grade 3) in the selected schools were requested to participate. Within these 12 schools, teachers in the foundation phase numbered from 4 to 22 depending on the school size. A total of 118 teachers consented. Descriptives of the sample are in Table 1. The majority of participants had a teaching diploma ( $n = 87$ ) and over 10 years of experience in the classroom ( $n = 91$ ). About two-thirds of the sample had no additional training teaching inclusive education. Most of the sample was female ( $n = 115$ ) and listed Afrikaans as their home language ( $n = 75$ ). While most of the sample had exposure to children with ADHD ( $n = 90$ ), most did not have exposure to children with LNFS ( $n = 71$ ).

**[t] Insert Table 1 near here/[t]**

### ***Materials***

The materials used for this study were provided in either Afrikaans or English, according to the preference of the participants. All measures were initially designed in English. The translation of the questionnaire and the two vignettes into Afrikaans was done by means of a blind-back translation process (Bornman, Sevcik, Romski, & Pae, 2010). A translator provided a word-for-



word translation from the source language (English) to the target language (Afrikaans). A second translator, who had not seen the measure in its source language, translated it back from the target language to the source language. This back-translated version was compared to the original version to determine whether there were discrepancies. All discrepancies were then discussed in order to arrive at a consensus version between the two translators.

### *Vignettes*

Two written vignettes were developed for the purpose of this study. Written vignettes were selected so learners' physical appearances could not affect participants' perceptions. One depicts a learner with ADHD (Vignette A) and the other a learner with LNFS who uses a communication board (Vignette B). The vignettes were constructed to highlight the differences in communication and classroom interaction between these two types of learners. Typical characteristics of a learner with ADHD, namely particular difficulty with impulsivity, hyperactivity and inattention (Kos et al., 2006) were incorporated in Vignette A. In Vignette B, it was decided that the learner with LNFS used a low technology communication board because it has more appeal to teachers in the South African context in terms of appropriateness and acceptability (Dada, 1999). That the child with LNFS uses a communication board and therefore is a slow communicator and needs a significant amount of assistance was highlighted. The learned helplessness that the child with LNFS exhibited was contrasted with the hyperactive behaviours displayed by the learner with ADHD.

### *Modified Teacher Attitude Scale*

The questionnaire used was based on the Teacher Attitude Scale originally developed by Soto (1997), modified by Dada for learners using augmentative and alternative communication in the South African context (1999), and further modified by Van Heerden (2009) to assess teachers'

attitudes toward the inclusion of learners with barriers to learning (without a specific barrier). The questionnaire assesses teachers' attitudes about inclusion. It consists of 32 items that tap five subscales of teachers' attitudes about inclusion of children who experience barriers to learning in a mainstream classroom. Specifically, the subscales include: (1) teachers' attitudes about their own abilities; 2) teachers' attitudes about the learner's general academic abilities; 3) teachers' attitudes about the learner's classroom interaction; 4) teachers' attitudes about the learner's communication interaction; and 5) teachers' attitudes about inclusion of the learner in their classes. Responses were provided on a 5-point Likert scale ranging from: (1) strongly disagree to (5) strongly agree. The Modified Teacher Attitude Scale was completed for both vignettes.

### ***Procedure***

A comparative cross-over design was used to address the aims of this study. Participants first completed a biographical questionnaire then were given the vignettes along with the Modified Teacher Attitude Scale. A separate Modified Teacher Attitude Scale was completed after each vignette. Participants were randomly assigned to receive Vignette A or Vignette B first in order to counterbalance potential order effects.

### ***Data Analysis***

Data screening and analyses were conducted using the Statistical Package for the Social Sciences 17.0 (SPSS). Paired sample t-tests were run used to compare the results for Vignette A and Vignette B. Linear multiple regressions also were run to determine whether any teacher factors (i.e., inclusive education training, exposure to learners with LNFS) predicted scores on the subscales for either vignette. Additionally, Cronbach alphas were run to determine the reliability of the Modified Teacher Attitude Scale.

## Results

The data first were checked for accuracy of data entry, missing data, outliers, and data normality. The groups within the age variable were found to be highly unequal; consequently, the decision was made to dichotomise the variable, leading to the age groups, 45 and younger:  $n = 52$  and older than 45:  $n = 66$  (see Table 1 for descriptives).

The results for the Modified Teacher Attitude Scale are presented descriptively and comparatively. Means and standard deviations for the items can be found in Table 2 for both Vignette A and B. The first subscale (Items 1-6) related to teachers' attitudes about their own abilities to effectively teach the learner with educational barriers in their class. The means revealed that teachers felt more confident about teaching the learner with ADHD ( $M = 3.00$ ,  $SD = .74$ ) compared to the learner with LNFS ( $M = 2.55$ ,  $SD = .70$ ). A paired-samples t-test (see Table 3) was conducted to compare these two means. A statistically significant difference was found,  $t(117) = 6.32$ ,  $p = .00$ ,  $d = .58$ . Comparisons also were run for each item under this subscale. All were found to be statistically significant except for Item 4: I will need extra training to teach this learner,  $t(117) = -1.73$ ,  $p = .09$ ,  $d = .16$ .

**[t] Insert Table 2 near here/[t]**

**[t] Insert Table 3 near here/[t]**

The second subscale (Items 7-12) assessed teachers' attitudes about the learner's academic abilities in general (e.g., whether he is motivated to learn, whether he will need extra help to learn). Teachers generally held more favourable attitudes toward the learner with ADHD ( $M = 3.01$ ,  $SD = .58$ ) than the learner with LNFS ( $M = 2.68$ ,  $SD = .55$ ). These two means were found to

be significantly different,  $t(117) = 5.37, p = .00, d = .49$ . Two items within this subscale, however, were found not to be significantly different between the two vignettes, Item 8: This learner will learn at the same pace as other learners in my class,  $t(117) = 1.10, p = .27, d = .10$ , and Item 9: This learner will need extra help to learn,  $t(117) = -.93, p = .35, d = .09$ .

The third subscale (Items 13-19) pertained to teachers' attitudes about the learners' classroom interactions (e.g., disruptive, making friends, answering questions appropriately). Again, teachers generally held more favourable views of the classroom interaction for the learner with ADHD ( $M = 3.12, SD = .56$ ) over the learner with LNFS ( $M = 2.94, SD = .58$ ). This difference was statistically significant,  $t(117) = 3.01, p = .00, d = .27$ . The only individual item within this subscale that did not cross the threshold of significance was Item 15: This learner will be able to participate in class,  $t(117) = 1.66, p = .10, d = .15$ .

The fourth subscale (Items 20-26) tapped teachers' attitudes about the learners' communication interactions (e.g., will be able to start a conversation, ask for things he needs). The means revealed that teachers held more positive views for the communication interactions for the learner with ADHD ( $M = 3.45, SD = .50$ ) compared to the learner with LNFS ( $M = 3.34, SD = .47$ ); this difference was statistically significant,  $t(117) = 2.12, p = .04, d = .20$ . All items within this subscale were compared between the two vignettes, and were found to be statistically significant except for Item 26: I will often engage in conversation with this learner,  $t(117) = .00, p = 1.00, d = 0$ .

Subscale five (Items 27-32) related to factors that affect whether teachers would want to include the learner in their classroom. Teachers held significantly more favourable views of including the learner with ADHD ( $M = 3.36, SD = .59$ ) in their class over the learner with LNFS ( $M = 3.24, SD = .74$ ),  $t(117) = 2.24, p = .03, d = .21$ . Comparisons between items within this subscale all were found to be statistically significant.

### ***Regression Analyses***

Results for the regression analyses can be found in Table 4. For subscale 1 (attitudes about teachers' own abilities to teach these learners), inclusive education training was positively associated with teachers' attitudes about teaching both learners, ADHD  $\beta = .24$ ,  $t(111) = 2.48$ ,  $p = .02$  and LNFS  $\beta = .25$ ,  $t(111) = 2.68$ ,  $p = .01$ . For subscale 2, a significant predictor of teachers' attitudes toward the learner's academic abilities was teachers' exposure to learners with LNFS, ADHD,  $\beta = -.23$ ,  $t(111) = -2.35$ ,  $p = .02$  and LNFS,  $\beta = -.21$ ,  $t(111) = -2.06$ ,  $p = .04$ . However, these were both negative effects which suggested that, when compared to teachers with exposure to learners with LNFS, teachers with no exposure to learners with LNFS held more positive views toward both the learner with ADHD and the learner with LNFS. Age also was a significant predictor,  $\beta = -.21$ ,  $t(111) = -2.22$ ,  $p = .03$ , where younger teachers held significantly more positive attitudes toward the academic skills of the learner with ADHD than older teachers.

**[t] Insert Table 4 near here/[t]**

The number of learners with barriers to learning previously taught was a significant predictor of teachers' attitudes about the learner's classroom interaction (subscale 3) for both the learner with ADHD,  $\beta = .24$ ,  $t(111) = 2.43$ ,  $p = .02$  and the learner with LNFS,  $\beta = -.22$ ,  $t(111) = -2.19$ ,  $p = .03$ . The direction of these two effects was opposite, evidencing a positive effect for attitudes toward the learner with ADHD and a negative effect toward the learner with LNFS. Thus, teachers who had taught more learners with barriers to learning held more positive attitudes for the classroom interaction of the learner with ADHD and more negative attitudes for the interaction of the learner with LNFS when compared to teachers who had taught fewer learners with barriers to learning.

For the fourth subscale, exposure to learners with LNFS also significantly predicted teachers' attitudes about communication interaction for the learner with ADHD,  $\beta = -.27$ ,  $t(111) = -2.65$ ,  $p = .01$  but not the learner with LNFS,  $\beta = -.11$ ,  $t(111) = -1.10$ ,  $p = .27$ . This again was a negative effect, suggesting that, when compared to teachers with exposure to learners with LNFS, those teachers with no exposure to learners with LNFS had more positive attitudes for the communication interaction of learners with ADHD.

Significant predictors of teachers' attitudes for inclusion of the learner (subscale 5) with LNFS were age,  $\beta = -.21$ ,  $t(111) = -2.17$ ,  $p = .03$  and inclusive education training,  $\beta = .24$ ,  $t(111) = 2.60$ ,  $p = .01$ . Hence, younger teachers and teachers with inclusive education training had more positive views of including the learner with LNFS when compared to older teachers and teachers without inclusive education training. No significant predictors for the inclusion of the learner with ADHD were found.

### ***Scale Reliability***

The reliability of the Modified Teacher Attitudes Scale also was checked. Cronbach alphas were run for both Vignette A and Vignette B (see Table 5). Alphas for the entire scale were found to good,  $\alpha = .87$  for Vignette A and  $\alpha = .84$  for Vignette B. However, the reliability was notably higher in some subscales than others. For example, the reliabilities for subscale 1 fell into the acceptable range  $\alpha = .78$  (Vignette A) and  $\alpha = .69$  (Vignette B) as did the reliabilities for subscale 3  $\alpha = .64$  (Vignette A) and  $\alpha = .68$  (Vignette B), and subscale 5  $\alpha = .73$  (Vignette A) and  $\alpha = .81$  (Vignette B). In contrast, falling below  $\alpha = .60$  was both subscale 2  $\alpha = .58$  (Vignette A),  $\alpha = .46$  (Vignette B) as well as subscale 4  $\alpha = .58$  (Vignette A),  $\alpha = .56$  (Vignette B). Because of the low reliabilities on these particular subscales, Cronbach alphas were assessed to determine whether the subscale reliability could be increased if an item was deleted. The one item that was found to

particularly suppress reliability scores was Item 9: This learner will need extra help to learn. If this item was deleted, the reliability for subscale 2 would increase to  $\alpha = .69$  (Vignette A) and  $\alpha = .56$  (Vignette B).

**[t] Insert Table 5 near here/[t]**

## **Discussion**

The purpose of this study was to compare teachers' attitudes regarding learners with two distinct barriers to learning, namely a learner with ADHD and a learner with LNFS. These two conditions were chosen to emphasize distinctions in communication and classroom interactions. The results suggested overall that teachers favoured the inclusion of the learner with ADHD. More specifically, teachers felt they were more prepared to teach a learner who exhibited behaviours associated with ADHD, could cope without a teaching assistant, and could educate the learner with ADHD during regular school hours. Teachers thought the learner with ADHD would be significantly more likely to attend a mainstream school and be able to communicate more appropriately during classroom activities and socially with his peers. They also had significantly more favourable attitudes about modifying their instructional techniques and goals for the learner with ADHD. However, they also rated the learner with ADHD as significantly more impolite, more disruptive, and having a more negative effect on the classroom climate than the learner with LNFS.

Although the teachers rated the learner with LNFS as significantly more motivated to learn and more well-mannered, they were more concerned about the ability of the learner with LNFS to communicate effectively both for academic and social reasons (e.g., initiating conversations, asking for what he needs, telling a story). In fact, research suggests that with uncertainty about

the learner's ability to effectively communicate his needs and knowledge, teachers often hesitate including a learner with LNFS in their classrooms (Dada, 1999). Teachers in this sample also were more certain that the learner with LNFS would eventually need a disability grant and would be less likely to find a job in the future.

The non-significant items within the comparative analyses also were telling. No significant differences were found for Item 4, whether teachers felt they need extra training to teach this learner. Both means were relatively high,  $M = 3.75$  and  $M = 3.96$  for the learner with ADHD and LNFS respectively, suggesting that, on average, teachers felt that they could benefit from more inclusive education training if either learner was in their class. This finding is comparable to the findings of other research (e.g., Hay, Smit, & Paulsen, 2001; Ntombela, 2011; Scruggs & Mastropieri, 1996), emphasising that many teachers may not feel adequately prepared to provide effective education to learners with barriers to learning in their classes. Moreover, no significant differences in teachers' attitudes were found for Item 8, whether teachers thought the learner would learn at the same pace as his classroom peers (both means were around the score of 2) and Item 9, whether the learners would need extra help to learn (both means were around 4), suggesting that teachers thought both boys in the vignettes would be relatively slow learners and would need additional instruction and/or supports. Similarly, no differences were found for Item 26, engaging in conversation with the learner (both means were high), meaning that teachers reported they often would engage in conversation with both learners.

Taken together, the results of the comparative analyses indicated that teachers believed that if either learner were in their class, both the learner with ADHD and the learner with LNFS would need additional instructional supports to keep pace with their peers. However, a recent survey of principals in the Gauteng Province of South Africa found that the vast majority of learners with special needs "seldom" or "never" received specialised supports to facilitate their



learning (Nel, Muller, & Rheeders, 2011, p. 49). This is concerning as the Gauteng Province is the richest province in South Africa with the most resources; hence, if learners within Gauteng rarely receive resources, then South African learners within other provinces likely never receive resources.

A lack of supports likely hinders the academic achievement of learners who experience barriers to learning and frustrates teachers who, on their own, experience difficulties overcoming the learners' academic barriers. These frustrations can contribute to negative teacher attitudes toward inclusive education. Additionally, the teachers reported that they, too, would benefit from extra training in order to effectively educate the learners in the vignettes. These results are similar to those found in a study of teachers in Botswana, where teachers reported anxiety about including learners with academic barriers into their classes without having had additional training (Chhabra et al., 2010).

Additionally, teachers scored the learner with LNFS as more well-mannered and more motivated to learn. Despite this, they were significantly more willing to have the learner with ADHD in their classes. It appears that this may be a result of their general concern about the ability of the learner with LNFS to communicate and participate in social and academic activities. The results also suggested that teachers were concerned about their abilities to cope with the child with LNFS in their classroom, and this effect was relatively large ( $d = .60$ ).

While ADHD is one of the most frequent barriers to learning that teachers in South Africa experience (Nel et al., 2011), many of the teachers sampled in this research had never encountered a learner with LNFS. Therefore they likely did not realise what learners with LNFS could accomplish when adequately supported. Their attitudes were one of the “fear of the unknown”. That is, maybe they contended that it is easier to cope with the learner with ADHD—despite his challenging and disruptive behaviour—than try to include a learner who is well-

behaved, but may or may not be able to communicate effectively. With proper training and education, though, teachers can become aware that although learners with LNFS have an expressive communication disability and therefore are slow communicators, they often have no impairment in their language and reading comprehension. Hence, their expressive language skills do not necessarily equate with their receptive language skills.

The results of the regression analyses revealed that additional training in inclusive education was positively related to teachers' attitudes about their own abilities to teach both learners represented in the vignettes. Inclusive education training also was positively related to teachers' attitudes toward inclusion of the learner with LNFS. These results are similar to those found in other studies (Avramidis, Bayliss, & Burden, 2000; Avramidis & Kalyva, 2007; Oswald & Swart, 2011) indicating that an important aspect of teachers' pedagogical training should be working with learners with educational barriers, thus equipping them with the knowledge and skills of how to facilitate an inclusive educational setting since it results in more positive attitudes for inclusive practices.

Age also was a significant predictor of teachers' attitudes toward the inclusion of the learner with LNFS in the classroom as well as a predictor of teachers' attitudes toward the general academic abilities of the learner with ADHD, where younger teachers held more positive views about both of the learners. Perhaps this is an indication of the evolution of training and teaching methods, where younger teachers are receiving more positive information about the benefits of inclusive education for all types of learners—even those who have little speech and/or challenging behaviour in the classroom. Younger teachers also might be more impressionable and more open to new teaching methods than older teachers (Jordan et al., 2009).

The number of learners with barriers to learning taught also was a significant predictor of teachers' attitudes concerning learners' classroom interaction, for both the learner with ADHD

and LNFS. However, the effects for this predictor went in opposite directions between the two learners, where teachers who had taught more learners with barriers to learning had more positive attitudes toward the classroom interaction of the learner with ADHD, but had more negative attitudes toward the learner with LNFS. This finding may relate to the nature of the items that are tapped in this subscale. For example, items within this domain question whether the learner can participate in class discussions and activities and whether he will easily make friends. Teachers who have had more experience with learners who experience barriers to learning likely are more aware of the barriers in both academic and social participation that learners with LNFS face because of their lack of a “voice”. Learners with ADHD, on the other hand, may be overactive but do not face the same degree of difficulty participating and communicating with their peers and adults. It seems that teachers who have had experience with many learners with barriers to learning may be attuned to the situations that learners with LNFS often endure. However, these obstacles can be overcome when proper supports are provided.

It was rather unexpected to find that exposure to learners with LNFS was negatively related to teachers' attitudes about these learners. However, this finding may suggest that teachers' attitudes are influenced by their experiences. Just like any other learner with a condition or disability, the severity of the condition and the supports that are offered will influence the type of performance that the learner with LNFS exhibits. Those who have had a negative experience teaching a learner with LNFS as a result of receiving no support, information, or guidance on how to instruct this type of learner may be reluctant to try again.

In summary, the results of the regression analyses indicated that additional training in inclusive education was positively related to teachers' attitudes about their own abilities to teach both learners depicted in the vignettes. This finding is comparable to those in other studies that indicated additional inclusive education training was associated with teachers feeling more self-

efficacious (Ching et al., 2007; Kyriakou et al., 2007; Silverman et al., 2010). The results also revealed that younger teachers had significantly more positive attitudes toward including the learner with LNFS in their classroom and more positive attitudes regarding the learner with ADHD in general. These findings may be a product of changing attitudes and pedagogical training toward more inclusive education.

The regression results also indicated that the number of learners with barriers to learning taught was significantly related to teachers' attitudes toward the classroom interaction of the learner with ADHD and the learner with LNFS. While positively associated with attitudes concerning the learner with ADHD, though, this predictor was negatively related to teachers' attitudes for the learner with LNFS. Teachers with considerable experience with learners with academic barriers may be more realistic and knowledgeable about the barriers that learners with LNFS face, like when trying to make friends or being isolated from their peers. The best way to eventually overcome these realities is for teachers to strive to create welcoming and inclusive classroom climates that foster acceptance of all classroom learners, whether they have barriers to learning or not.

### ***Study Limitations***

This study had several limitations. One limitation was the low reliability estimates that were obtained for two subscales (2 and 4) on the Modified Teacher Attitude Scale. Cronbach alpha estimates suggested that the reliability of subscale 2 can be substantially improved with the removal of Item 9. However, the omission of any item on subscale 4 would not considerably increase its reliability estimate. Future studies that utilise the Modified Teacher Attitude Scale should consider that the scale's reliability may be an issue.

Other limitations were that the scales were self-report and no independent observations of teachers' actual classroom behaviours were conducted. It is possible that teachers could have provided socially desirable answers because they knew their data would be checked and analysed at a later time. However, to prevent this social desirability bias from occurring, teachers were assigned participant numbers when they filled out the questionnaires and were assured that their data would not be matched with their names. It also is possible that teachers responded to the questionnaire in ways that they thought were accurate, but did not match their classroom behaviour in actuality. Although it is unfortunate not to have these checks in place, obtaining observational data to correlate with the self-report questionnaires was beyond the scope of this study.

### **Conclusions**

In order to achieve an inclusive school environment, a shift from a set of embedded assumptions and practices that encourage maintenance of the status quo to one that promotes reform is necessary (Engelbrecht, Oswald, & Forlin, 2006). Because South Africa is part of the international drive toward inclusive education, it is imperative that teachers embrace the policy and learn techniques to provide excellent instruction to all learners, even those with complex communication needs. This can be facilitated through ongoing teacher education and training. Ultimately, it is teachers' willingness to commit to inclusion that will make this policy a reality for all learners who experience barriers to learning.

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Table 1. Frequencies of teacher variables (N = 118).

<b>Age (binary)</b>	45 and under n = 52	Older than 45 n = 66	--	--	--	--	--
<b>Age (categorical)</b>	25 and younger n = 2	26-30 n = 7	31-35 n = 7	36-40 n = 18	41-45 n = 16	46-50 n = 17	51 and older n = 51
<b>Home language</b>	Afrikaans n = 75	English n = 21	Setswana n = 19	isiXhosa n = 1	isiZulu n = 1	Sesotho n = 1	--
<b>Education</b>	Grade 11 or lower n = 1	Grade 12 n = 6	Teaching diploma n = 87	Teaching degree n = 24	--	--	--
<b>Inclusive education training?</b>	Yes n = 42	No n = 76	--	--	--	--	--
<b>Teaching experience</b>	<1 year n = 4	1 – 3 years n = 7	4 – 5 years n = 2	6 – 10 years n = 14	>10 years n = 91	--	--
<b>Learners with barriers to learning taught?</b>	5 or less n = 44	6-10 n = 35	11-20 n = 0	21-40 n = 12	more than 40 n = 27	--	--
<b>Exposure to learner with LNFS?</b>	Yes n = 47	No n = 71	--	--	--	--	--
<b>Exposure to learner with ADHD?</b>	Yes n = 90	No n = 28	--	--	--	--	--

Table 2. Means and Standard Deviations for Modified Teacher Attitude Scale.

Item	Vignette A (ADHD)		Vignette B (LNFS)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Subscale 1: Teachers' attitudes about their own abilities	3.00	.74	2.55	.70
1. I will be able to teach this learner	3.78	.90	3.32	.97
2. I am trained to teach this learner	2.83	1.18	2.25	1.14
3. I can cope with this learner in my class without help	3.02	1.08	2.32	1.12
4. I need extra training to teach this learner	3.75	1.06	3.96	1.20
5. I will need an assistant if this learner was in my class	3.49	1.24	3.75	1.19
6. I will feel confident to teach this learner	3.61	.89	3.08	1.03
Subscale 2: Teachers' attitudes about the learner	3.01	.58	2.68	.55
7. This learner is motivated to learn	3.03	.98	3.27	.96
8. This learner will learn at the same pace as other learners in my class	2.27	.93	2.14	.94
9. This learner will need extra help to learn	3.80	1.18	3.93	1.31
10. This learner will eventually need a disability grant	2.73	1.17	3.53	1.07
11. This learner will be able to attend a mainstream school	3.42	1.09	2.67	1.05
12. This learner will find a job one day	3.88	.71	3.46	.96
Subscale 3: Teachers' attitudes about classroom interaction	3.12	.56	2.94	.58
13. This learner will disrupt other learners in the class	3.84	1.03	2.69	1.04
14. This learner will answer questions appropriately in class	3.08	1.00	2.75	.89
15. This learner will be able to participate in class	3.08	1.12	2.87	.97
16. This learner has the communication skills to answer questions in class	3.49	.95	2.80	1.03
17. The other learners will find it difficult to make friends with this learner	2.65	1.04	2.94	.95
18. This learner will be isolated from participating in class	2.19	.83	2.80	1.07
19. This learner will be able to tell a story in a logical format	2.91	1.03	2.58	.97
Subscale 4: Teachers' attitudes about communication interaction	3.45	.50	3.34	.47
20. This learner will be able to ask for things he needs	3.92	.67	3.41	.93
21. This learner will be able to start a conversation	3.66	.92	2.70	.95
22. This learner will experience difficulty starting friendships	2.62	.93	2.98	1.00
23. This learner is impolite	2.79	1.12	2.10	.89
24. This learner will have difficulty sharing information with others	2.88	1.06	3.44	1.02
25. This learner is well mannered	2.86	1.02	3.77	.69
26. I will often engage in conversation with this learner	4.01	.84	4.01	.77
Subscale 5: Teachers' attitudes about inclusion	3.36	.59	3.24	.74
27. I am willing to have this learner in my class	3.66	.84	3.34	.94
28. This learner will benefit from inclusion	3.77	.86	3.50	1.21
29. This learner will have a negative effect on the classroom climate	3.17	1.03	2.65	1.03
30. I will have enough time to educate this learner during school hours	2.37	.99	2.10	.93
31. I am willing to modify my curricula goals to ensure the academic success of this learner	3.72	.85	3.53	1.05
32. I am willing to modify my instructional techniques to ensure the academic success of this learner	3.79	.86	3.62	1.01

Note: Subscale Means contain items that have been reversed scored.

Table 3. Paired sample *t*-tests for Vignette A and B.

Item	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Subscale 1: Teachers' attitudes about their own abilities	.45	.78	6.32	117	.00	.58
1. I will be able to teach this learner	.46	1.08	4.59	117	.00	.43
2. I am trained to teach this learner	.58	1.30	4.83	117	.00	.44
3. I can cope with this learner in my class without help	.70	1.16	6.52	117	.00	.60
4. I need extra training to teach this learner	-.21	1.33	-1.73	117	.09	.16
5. I will need an assistant if this learner was in my class	-.25	1.41	-1.96	117	.05	.18
6. I will feel confident to teach this learner	.53	1.12	5.09	117	.00	.47
Subscale 2: Teachers' attitudes about the learner's academic abilities	.33	.67	5.37	117	.00	.49
7. This learner is motivated to learn	-.25	1.27	-2.10	117	.04	.19
8. This learner will learn at the same pace as other learners in my class	.13	1.25	1.10	117	.27	.10
9. This learner will need extra help to learn	-.14	1.58	-.93	117	.35	.09
10. This learner will eventually need a disability grant	-.81	1.19	-7.38	117	.00	.68
11. This learner will be able to attend a mainstream school	.75	1.32	6.21	117	.00	.57
12. This learner will find a job one day	.42	.94	4.91	117	.00	.45
Subscale 3: Teachers' attitudes about classroom interaction	.18	.66	3.01	117	.00	.27
13. This learner will disrupt other learners in the class	1.15	1.36	9.19	117	.00	.85
14. This learner will answer questions appropriately in class	.32	1.32	2.65	117	.01	.24
15. This learner will be able to participate in class	.20	1.33	1.66	117	.10	.15
16. This learner has the communication skills to answer questions in class	.70	1.26	5.97	117	.00	.55
17. The other learners will find it difficult to make friends with this learner	-.29	1.21	-2.58	117	.01	.24
18. This learner will be isolated from participating in class	-.60	1.11	-5.89	117	.00	.54
19. This learner will be able to tell a story in a logical format	.32	1.29	2.70	117	.01	.25
Subscale 4: Teachers' attitudes about communication interaction	.12	.59	2.12	117	.04	.20
20. This learner will be able to ask for things he needs	.52	.97	5.81	117	.00	.53
21. This learner will be able to start a conversation	.96	1.30	7.98	117	.00	.74
22. This learner will experience difficulty starting friendships	-.36	1.31	-3.03	117	.00	.28
23. This learner is impolite	.69	1.39	5.37	117	.00	.49
24. This learner will have difficulty sharing information with others	-.56	1.24	-4.88	117	.00	.45
25. This learner is well mannered	-.91	1.14	-8.64	117	.00	.80
26. I will often engage in conversation with this learner	.00	.95	.00	117	1.00	.00
Subscale 5: Teachers' attitudes about inclusion	.12	.57	2.24	117	.03	.21
27. I am willing to have this learner in my class	.32	1.05	3.35	117	.00	.31
28. This learner will benefit from inclusion	.27	1.15	2.57	117	.01	.24
29. This learner will have a negative effect on the classroom climate	.52	1.15	4.90	117	.00	.45
30. I will have enough time to educate this learner during school hours	.27	.99	2.97	117	.00	.27
31. I am willing to modify my curricula goals to ensure the academic success of this learner	.19	.88	2.31	117	.02	.21

32. I am willing to modify my instructional techniques to ensure the academic success of this learner	.17	.85	2.17	117	.03	.20
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Note: Alpha is  $p < .05$ .

Table 4. Multiple regression analyses.

	Vignette A					Vignette B				
	<i>b</i>	<i>SE</i>	$\beta$	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	$\beta$	<i>t</i>	<i>p</i>
SS1: Attitudes about own abilities										
Age	-.01	.09	-.01	-.07	.95	-.01	.12	-.01	-.10	.92
Inclusive education training?	.23	.09	.24	2.48	.02	.31	.12	.25	2.68	.01
Learners with education barriers taught	.03	.04	.07	.65	.52	.09	.05	.17	1.76	.08
Exposure learners with LNFS?	-.13	.10	-.14	-1.39	.17	-.02	.12	-.01	-.14	.89
Exposure learners with ADHD?	.11	.11	.10	1.04	.30	.03	.13	.02	.25	.80
SS2: Attitudes about learner's academic abilities										
Age	-.21	.09	-.21	-2.22	.03	.05	.10	.05	.47	.64
Inclusive education training?	.11	.09	.11	1.20	.23	.14	.10	.14	1.41	.16
Learners with education barriers taught	.07	.04	.18	1.83	.07	.02	.04	.04	.36	.72
Exposure learners with LNFS?	-.22	.10	-.23	-2.35	.02	-.21	.10	-.21	-2.06	.04
Exposure learners with ADHD?	-.13	.11	-.12	-1.25	.21	-.10	.11	-.09	-.90	.37
SS3: Attitudes about classroom interaction										
Age	-.04	.09	.04	.45	.65	.09	.10	.09	.93	.35
Inclusive education training?	-.14	.09	-.14	-1.50	.14	.01	.09	.01	.11	.92
Learners with education barriers taught	.10	.04	.24	2.43	.02	-.09	.04	-.22	-2.19	.03
Exposure learners with LNFS?	-.07	.09	-.08	-.77	.45	-.08	.10	-.09	-.90	.37
Exposure learners with ADHD?	.05	.10	.05	.47	.64	.06	.11	.05	.54	.59
SS4: Attitudes about communication interaction										
Age	.03	.08	.04	.37	.71	.03	.07	.05	.49	.63
Inclusive education training?	.11	.08	.12	1.31	.19	.02	.07	-.01	-.08	.94
Learners with education barriers taught	.04	.04	.12	1.20	.23	.02	.03	.06	.61	.55
Exposure learners with LNFS?	-.22	.08	-.27	-2.65	.01	-.08	.07	-.11	-1.10	.27
Exposure learners with ADHD?	.13	.09	.13	1.39	.16	-.01	.08	-.02	-.17	.87
SS5: Attitudes about inclusion										
Age	-.08	.10	-.08	-.76	.45	-.26	.12	-.21	-2.17	.03
Inclusive education training?	.17	.10	.16	1.70	.09	.31	.12	.24	2.60	.01
Learners with education barriers taught	.08	.04	.18	1.82	.07	.06	.05	.11	1.16	.25
Exposure learners with LNFS?	-.14	.10	-.14	-1.40	.17	.06	.12	.05	.50	.62
Exposure learners with ADHD?	-.05	.11	-.04	-.40	.69	-.23	.14	-.16	-1.69	.09

Note: Alpha is  $p < .05$ .

Table 5. Cronbach alphas for Modified Teacher Attitude Scale.

Item	Vignette A (ADHD)	Cronbach's alpha with item deleted	Vignette B (LNFS)	Cronbach's alpha with item deleted
Subscale 1: Teachers' attitudes about their own abilities	$\alpha = .78$	-	$\alpha = .69$	-
1. I will be able to teach this learner		.72		.62
2. I am trained to teach this learner		.78		.66
3. I can cope with this learner in my class without help		.73		.61
4. I need extra training to teach this learner		.75		.66
5. I will need an assistant if this learner was in my class		.79		.72
6. I will feel confident to teach this learner		.75		.62
Subscale 2: Teachers' attitudes about the learner's academic abilities	$\alpha = .58$	-	$\alpha = .46$	-
7. This learner is motivated to learn		.51		.41
8. This learner will learn at the same pace as other learners in my class		.51		.46
9. This learner will need extra help to learn		.69		.56
10. This learner will eventually need a disability grant		.51		.42
11. This learner will be able to attend a mainstream school		.42		.29
12. This learner will find a job one day		.52		.29
Subscale 3: Teachers' attitudes about classroom interaction	$\alpha = .64$	-	$\alpha = .68$	-
13. This learner will disrupt other learners in the class		.66		.71
14. This learner will answer questions appropriately in class		.55		.61
15. This learner will be able to participate in class		.53		.61
16. This learner has the communication skills to answer questions in class		.60		.64
17. The other learners will find it difficult to make friends with this learner		.60		.66
18. This learner will be isolated from participating in class		.64		.66
19. This learner will be able to tell a story in a logical format		.59		.63
Subscale 4: Teachers' attitudes about communication interaction	$\alpha = .58$	-	$\alpha = .56$	-
20. This learner will be able to ask for things he needs		.54		.50
21. This learner will be able to start a conversation		.56		.46
22. This learner will experience difficulty starting friendships		.52		.49
23. This learner is impolite		.54		.58
24. This learner will have difficulty sharing information with others		.49		.45
25. This learner is well mannered		.51		.57



26. I will often engage in conversation with this learner		.61		.54
Subscale 5: Teachers' attitudes about inclusion	$\alpha = .73$	-	$\alpha = .81$	-
27. I am willing to have this learner in my class		.68		.76
28. This learner will benefit from inclusion		.72		.81
29. This learner will have a negative effect on the classroom climate		.75		.83
30. I will have enough time to educate this learner during school hours		.75		.82
31. I am willing to modify my curricula goals to ensure the academic success of this learner		.63		.72
32. I am willing to modify my instructional techniques to ensure the academic success of this learner		.62		.73
Total scale reliability	$\alpha = .87$	-	$\alpha = .84$	-