The Effects of Contact on Pupils' Attitudes toward People with Intellectual Disabilities

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Thesis declaration form

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Date:

Overview

This thesis examines the effects of different forms of contact with people with intellectual disabilities on children and young people. Contact is seen as a key mechanism to tackling stigma but direct contact can be costly and difficult to implement. Imagined contact has emerged as a promising route to reducing prejudice but to date no studies have tested its effects on children and young people with regards to intellectual disabilities.

Part one is a literature review examining the effects of direct and indirect school-based contact on children and young people's attitudes and behavioural intentions towards peers with intellectual disabilities. The findings indicate that contact with people with intellectual disabilities has a positive effect on children and young people's attitudes, particularly when the contact is more than one-off, structured and collaborative rather than via inclusive education alone. Many methodological limitations of the evidence are noted with regards to diagnostic labelling, sampling and measurement.

Part two presents an empirical study which investigated whether imagining contact with a person with an intellectual disability improves children and young people's intergroup attitudes, intergroup anxiety, social distance and contact self-efficacy towards people with intellectual disabilities. No statistically significant results were found. The findings are considered in relation to possible explanations, limitations and directions for future research. These include a need for future research examining imagined contact to adjust the intervention to provide a better fit for a school context.

Part three is a critical review of the thesis. The review examines the concepts and methodology used and considers wider issues relating to stigma and imagined

contact research, and intellectual disabilities. The review concludes with personal

reflections on the process of conducting the research.

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Part 1: Literature Review

Improving Attitudes and Behavioural Intentions towards

Peers with Intellectual Disabilities in Schools through

Contact Based Interventions:

A Review

Abstract

Aims: The effect of contact based interventions on children and young people's attitudes towards peers with intellectual disabilities are under researched. The purpose of this review is to bring together existing research in this area and examine its methods and findings.

Method: The academic literature was searched using PsycINFO, Scopus and ERIC, to identify articles, which evaluated children and young people's attitudes towards peers with intellectual disabilities following a contact based intervention.

Results: Fifteen articles (reporting on fifteen studies) were included in the review. The literature suggests that contact has a positive effect on attitudes of children and young peoples, particularly when the contact is more than one-off, structured and collaborative rather than via inclusive education alone.

Conclusions: Further research is needed to identify the different facets of contact most likely to improve attitudes, and to examine attitudes towards the diagnostic label 'intellectual disabilities' rather than disabilities more broadly. The many methodological limitations necessitate that future research in this area is consistent and meticulous with regards to diagnostic labelling, sampling and measurement. The results will be of benefit in considering how to implement and evaluate contact to reduce attitudes towards people with intellectual disabilities.

Introduction

Current national and international policies have attempted to maximize social inclusion and acceptance of people with intellectual disabilities. Despite these efforts people with intellectual disabilities continue to face negative attitudes from the public. Negative attitudes are experienced as societal barriers such as a lack of opportunity in education, employment and reduced access to services preventing them from being equal and active members of society (Seewooruttun & Scior, 2014). This is a significant social problem, which can be disabling, lead to psychological and emotional difficulties and hinder integration efforts. In particular, a number of studies have shown that adolescents hold unfavourable attitudes toward people with disabilities, which manifests as bullying, peer rejection and the belief that disability is contagious (Cohen, Roth, York, & Neikrug, 2012). Despite knowing that children and young people can exhibit impulsive and volatile behaviours, are susceptible to peer pressure, and will soon become adult role models, children and young people's attitudes towards people with intellectual disabilities remain relatively under-researched.

One way in which the international community have tried to combat prejudice for people with intellectual disabilities is to advocate that children and young people with a disability be educated in mainstream schools, termed 'inclusive education', thus paving the way to a more inclusive society. Driven by a desire to avoid negative attitudes and social exclusion, emphasis is placed on belonging, peer acceptance and supportive peer relationships (Runswick-Cole, 2011). However, a recent review of research into public attitudes towards people with intellectual disabilities concluded that whilst people may be in agreement with the principles of social inclusion for persons with intellectual disabilities, negative attitudes towards social interaction with

them still appear prominent (Scior, 2011). Although some studies have found positive outcomes for inclusive education (Diamond, 1999; Favazza, Phillipsen, & Kumar, 2000; Yu & Fowler, 2012), others have shown that merely attending an inclusive school does not guarantee positive attitudes, acceptance and spontaneous interaction (Kennedy, Shulka, & Fryxell, 1997; Nikolaraizi et al, 2005). Ineffective integration has been associated with pupils reflecting the attitudes expressed by teachers and parents, and environments that do not support opportunities for social interaction (Antonak & Livneh, 2000). Other studies have also found that a lack of resources, no special training, class disruptions, pressure on teachers, and entrenched attitudes make acceptance toward intellectual disabilities problematic (Ben-Pajooh, 1991; Rillotta & Nettelbeck, 2007).

Negative peer attitudes have been identified as a major barrier to the full integration of children and young people with disabilities in inclusive schools (Beh-Pajooh, 1991; Georgiadi, Kalyva, Kourkoutas, & Tsakins, 2012; Rahman, Mubbashar, Gater, & Goldberg, 1998). Research has shown that children and young people with intellectual disabilities are rated as less popular, rarely chosen as friends, neglected and rejected by their peers (Hurst, Corning, Ferrante, 2012; Nikolaraizi et al., 2005; Nowicki, 2002). These experiences have been found to contribute to the development of emotional and behavioral problems (Hay, Payne, & Chadwick, 2004), have a negative effect on educational outcomes, adjustment (Laws & Kelly, 2005), and may increase vulnerability to psychopathology in adulthood (Rutter, 1989).

The intensity and nature of negative attitudes towards people with intellectual disabilities may differ according to the type, chronicity, causes and perceived characteristics of the disability (Weiserbs & Gottlieb, 2000). Freeman and Alkin

(2000) conducted a review of the literature and concluded that children with intellectual disabilities in mainstream schools were not as socially accepted as their typically developing peers, and that lower social acceptance was associated with dissimilarity, the most significant difference pertaining to social behaviour. In other words, the more pupils with an intellectual disability were perceived as different in terms of interests and how they behaved, the less they were accepted. Similarly, research has shown that competent children are viewed more positively than less competent ones whereas more functionally disabling disabilities elicit stronger negative attitudes (Livneh, 1982). Stronger negative attitudes toward disabilities have also been marked by impairments characteristic of intellectual disabilities, such as language and social skills (Brown, Ouellette-Kuntz, Lysaght, & Burge, 2011). In a different study, peer acceptance was associated with severity of children's language and social communication difficulties (Laws, Bates, Feuerstein, Mason-Apps, & White, 2012). The social rejection of children with intellectual disabilities has also been partly attributed to their lack of sophisticated psychosocial skills or inability to make a judgment when faced with conflicting information. These negative attitudes have been mediated by personal insecurity, limited confidence, discomfort, and attempts to purposefully avoid contact (Bricker, 1995).

Two processes have been identified to support the positive outcome of inclusive education, namely Social Learning Theory and Contact Theory (Brown, 2011). Of interest to this review, Allport's (1954) Contact Theory suggests that interaction between different groups of people can reduce negative attitudes, stereotypes and prejudice. He argued that the following conditions need to be met in order for group contact to have positive effects: 1) groups need to have equal status 2) share common goals 3) work co-operatively towards achieving that goal 4) have

support of authorities, law or custom. Whilst contact has been well researched in some areas of intergroup relations there are very few studies looking at contact as a main focus of research into attitudes towards intellectual disabilities.

In a recent meta-analysis of the contact literature, Pettigrew, Tropp, Wagner, and Christ (2011) concluded that 'mere exposure' rather than the conditions put forward by Allport (1954) might be enough to reduce prejudice. Although this is an appealing conclusion given that mere exposure has the added benefit of more basic processes, as already noted however, research suggests that the social inclusion of children with disabilities cannot be achieved through inclusive policies alone (Freeman & Alkin, 2000; Hughes et al., 1999; Lindsay & Edwards, 2013). Despite this, the rationale behind inclusive education continues to be that integration and mere exposure between children and young people with and without intellectual disabilities will reduce negative attitudes. However, there is consensus among the inclusive education literature that contact between children with and without disabilities needs to be structured, meaningful and positive (Lewis, 1995). In fact, research has shown that unstructured contact could result in negative experiences and negative attitudes (Brown, 2010; Shevlin & O'Moore, 2000a). If inclusive education cannot succeed via exposure alone then intervention programmes need to be implemented in order to facilitate meaningful interaction and positive attitudes. Thus, it is critical that strategies aimed at promoting positive attitudes evaluate the effects of a contact based intervention rather than focus on interventions at broader system or organisational level, such as the introduction of inclusive education.

Many intervention programmes have been developed and implemented aimed at promoting children's positive attitudes towards their peers with intellectual

disabilities. One strategy has been to focus on disseminating accurate information about disability, and another to facilitate forms of active learning such as classroom discussion, video viewing and simulation activities (Shevlin & O'Moore, 2000a). However, it has been suggested that structured and direct intergroup contact is likely to be the most effective method to improve attitudes and facilitate interaction, with the vast majority of studies reporting positive outcomes (Seewooruttun & Scior, 2014). Indeed, in a recent review of the literature, Lindsay and Edwards (2013) concluded that disability awareness interventions in schools need to include social contact with people with a disability, and run for several sessions rather than one-off. Despite the success of direct contact interventions, they can be costly and difficult to put into practice (Reinke, Corrigan, Leonhard, Lundin, & Kubiak, 2004) and so research could look towards expanding and improving on indirect contact as an alternative. Indirect contact provides a variety of methods including film, storytelling, puppet shows, role-plays and imagined contact. However, to date, the effects of both direct and indirect contact based interventions on children and young people's attitudes towards people with intellectual disabilities have not been subject to a systematic review.

This review will assess the effect of interventions that have either direct or indirect contact at their core, on children and young people's attitudes and behavioural intentions towards their peers with intellectual disabilities.

The following questions will be addressed:

1. What interventions have been delivered to children and young people that provide contact with a person with intellectual disabilities and have been evaluated?

2. What are their effects on children and young people's attitudes towards people with intellectual disabilities?

3. Do any factors emerge as particularly important in promoting positive outcomes of contact based interventions?

Method

Search Strategy

The literature was systematically searched to identify published papers, in peer-reviewed journals written in English that looked at the effect of contact on the attitudes and behavioural intentions of children and young people towards those with intellectual disabilities. The electronic databases PsycINFO, Scopus and ERIC were used with the time limit from 1990 up until *the present date,* in order to focus on most relevant and up-to-date research. The reference lists of all studies included in the review were also searched to identify any further relevant studies.

Search Terms

The search terms focused on five concepts presented in Table 1.

Table 1

Search Terms Used

Intellectual Disability	Sample	Attitudes	Contact	Intervention
Intellectual Disabilit*	Young People	Attitude*	Film	Intervention
Learning Disabilit*	Children	Stigma*	Video	Program*
Mental Retard*	Youth	Belief*	Theatre	Expos*
Developmental Disabilit*	School	Aware*	Puppet*	Experience*
SEN		Knowledge*	Contact	Interact*
Special Need*		Accept*	Sport*	

Note: *indicates terms that were truncated to allow for multiple endings of the word

Inclusion and Exclusion Criteria

The search results were assessed against the following inclusion and exclusion criteria in order to decide suitability for this review.

Inclusion criteria

- Published in English in full in a peer reviewed journal since 1990

- Study's focus was on children and young people up to 18 years of age

- The intervention examined at least one outcome of an intervention involving contact with people with intellectual disabilities (or people with intellectual disabilities alongside those with other disabilities)

- The study provided contact with a person with intellectual disabilities (child, adult, or stand-in, e.g. puppet)

- The intervention in question was either direct or indirect contact, or a combination of the two

- Studies must have at least used a repeated measures design, and/or control group to test the effects of the intervention.

- The outcomes evaluated concerned children's or young people's attitudes towards people with intellectual disabilities (or people with intellectual disabilities alongside those with other disabilities)

Exclusion criteria

- Attitudes towards children and young people with intellectual disabilities related to a specific area, e.g., sexuality or IQ

- The intervention in question consisted of inclusive education on its own, without an added intervention

- Intervention strategies which did not include a contact component, e.g., a group discussion or classroom lecture only

Quality Rating of Studies

The studies included in this review were evaluated using the Health Evidence Bulletin

(2004), designed for assessing the methodological quality of interventional studies.

The tool rates studies on nine dimensions using three options ('yes/no/can't tell').

Each category needs to meet criteria assessed through prompt questions (see

Appendix A). An additional summary judgement rating of the overall study,

following the National Institute for Health and Clinical Excellence (2009) guidelines,

was also included to aid comparison of studies (see Appendix B). Inter-rater

reliability was addressed by asking the thesis supervisor to independently rate a

random selection of seven out of the 15 papers. There was no difference of agreement

regarding their rating.

Results

The initial search identified 823 articles of potential relevance. The process by which

these were examined against the inclusion/exclusion criteria, and the final body of 15

articles selected is shown in Figure 1.

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┌─────────────────────────────────────┐
│ Records identified through electronic │
│ databases.                           │
│ (N = 823)                            │
│     • Eric (Proquest) (n=291)        │
│     • PsycINFO (n=336)               │
│     • Scopus (n=196)                 │
│                                      │
│ Titles and/or abstracts read for all articles. │
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┌─────────────────────────────────┐
│ Articles excluded based on       │
│ inclusion/exclusion criteria.    │
│ Duplicates excluded.             │
│ (n=790)                          │
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┌─────────────────────────────────────┐
│ Full text read to assess whether met inclusion │
│ criteria (n=33)                      │
└─────────────────────────────────────┘
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┌─────────────────────────────────┐
│ Articles excluded based on       │
│ inclusion/exclusion criteria.    │
│ (n=25)                           │
└─────────────────────────────────┘
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┌─────────────────────────────────────┐
│ Reference list of all included papers reviewed │
│ for any additional relevant articles. Seven │
│ additional articles were identified. │
└─────────────────────────────────────┘
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┌─────────────────────────────────────┐
│ Articles included in the review      │
│ (n=15)                               │
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Figure 1. The Process of Selecting Studies for the Review

Overview of the studies

The 15 articles reported on 15 separate studies. The respective studies were conducted mostly in the USA (n = 6), two in Ireland, two each in Israel and New Zealand, and one each in the UK, Turkey and Australia. Sample sizes ranged from 8 to 417 participants (M = 105, SD = 107); the total number of participants across all studies being 1,654. Over half of these participants were taken from a secondary school pupils sample (N = 919), and ranged in age from 12 to 18 years. The remaining participants were primary school pupils (N = 555), age ranged from 8 to 13 years, and kindergarten pupils (N = 87), age ranged from 5 to 7 years. Only one longitudinal study assessed the attitudes of pupils 8 years following the contact intervention, they had a mean age of 20 (N = 93).

An overview of the studies and their key findings is presented in Table 2. The table provides effect sizes rather than significance values, mainly because not every significant result refers to an effect with a high impact. An effect size is the magnitude of the difference between groups, and while a P value can inform the reader whether an effect exists, the P value will not reveal the size of the effect. Thus, in order to describe, if effects have a relevant magnitude, effect sizes were used to describe the effects of contact interventions. Table 3 outlines the quality assessment ratings for each selected study.

Table 2

Studies Assessing Effects of Contact Interventions on Attitudes of Typically Developing Children and Young People towards People with

Intellectual Disabilities (effect sizes were calculated using Cohen's d)

Authors and Country	Sample	N	Intellectual Disability Definition	Measurement of attitudes	Contact intervention	Frequency of Contact	Findings
Burns et al. (1999) USA	Pupils aged 15-17 from 2 high schools in a large urban school district	36	Severe disabilities (most identified as moderate to severe intellectual disabilities).	Pre-post repeated measures. Attitude towards individuals with severe disabilities scale (ATISD) survey form 1 (Aveno & Stahlman, 1989). 18 item, 6-point semantic differential scale, depicting scenarios in the community and asking for a reaction.	Two direct contact conditions vs. control (enrolled in social studies class). 1) Service learning: Create a community garden on campus with 8 pupils with disabilities (sharing in responsibilities). 2) Accompanying 8 pupils with disabilities for two days of the special Olympics (providing a service only).	2-3 times per week over a semester period (12-20 weeks long) during science class.	Significant improvement in attitudes in condition 1 but not in condition 2 or control group. No differences were found between condition 2 and control group. ATISD: moderate effect size of 0.67 for condition 1. Small effect size of 0.16 for condition 2.

Authors and Country	Sample	N	Intellectual Disability Definition	Measurement of attitudes	Contact intervention	Frequency of Contact	Findings
Carter et al. (2001) USA	General education high school pupils from 5 high schools aged 14-18	60	Severe disabilities (multiple disabilities, mental retardation, autism).	Pre-post repeated measures. Social Distance Questionnaire (SDQ, Haring et al., 1983) 63-item 3-point scale with 4 subscales: (1) social willingness, (2) knowledge, (3) affect, and (4) contact. Used the term "person with mental retardation".	Direct contact (Peer Buddy Program) vs. Control (pupils who chose not to volunteer). Peer Buddy Program included 'orientation' (awareness & interaction strategies) 'instructional' activities (e.g., functional academics & life skills, employment training skills) and 'noninstructional' (e.g., participation in sports, volunteering, "hanging out").	50-90 minute class period per day for 18 weeks.	Scores were significantly higher on the willingness, knowledge and contact subscales, but not for affect. More previous contact was associated with greater social willingness for both groups. Moderate effect size for social willingness 0.7, knowledge 0.6, contact 0.7 and small for effect 0.4.
Cohen et al. (2012) Israel	9th grade pupils from various junior high schools throughout Israel	164	Disabilities (incl. some contact with 'Intellectual Disabilities')	Pre, post stage 1, post stage 2 repeated measures. Attitude toward disabled persons questionnaire (ATDP, Yuker et al., 1966). 30-item 6-point likert scale measuring attitudes towards persons with disabilities, e.g. 'persons with disabilities who work can succeed like other workers'.	Direct contact (Leadership Program) vs. Control. Leadership programme stage 1: information and knowledge, stage 2: contact with peers with disabilities. Contact with intellectual disabilities defined as joint volunteering activities in old-age homes.	4.5hs once weekly for 8 months.	Acquiring knowledge positively influenced attitudes but contact had a stronger positive influence on changing attitudes. ATDP: small effect size after stage 1, 0.4, and large effect size after stage 2, >1.

Authors and Country	Sample	N	Intellectual Disability Definition	Measurement of attitudes	Contact intervention	Frequency of Contact	Findings
Favazza & Odom (1997) USA	Kindergarten children (M=5 years) from 3 schools.	46	Mental Retardation and Multiple Disabilities	Pre-post repeated measures. 18-item, 3-point scale Acceptance Scale (ASK, Favazza & Odom, 1996) requires children to respond "yes", "no", or "maybe" to questions that reflect acceptance and non-acceptance of people with disabilities or people who are different ("can't see/walk")	'High' Direct Contact (storytime, discussion, structured play and home reading) vs. 'Low' direct contact (recess, lunchroom, music periods or in the library) vs. No contact control (non-inclusive school).	9 weeks	High contact showed significantly increased acceptance compared to low and control. Low contact showed significantly increased acceptance compared to control. Scores maintained at follow-up. ASK: large effect size at postest 0.96, small effect size at follow-up 0.42.
Gannon & McGilloway (2009) Ireland	Primary School children aged 8-11 from 6 rural mainstream schools.	118	Down Syndrome	Pre-post repeated measures. Attitude Questionnaire (AQ, based on modified version of Gash, 1993) 20-item scale measuring sociability and views on inclusion. Replaced the term 'Mental Handicap' with 'Down Syndrome'.	Indirect contact intervention. Video of children with Down Syndrome in inclusive classroom participating in everyday school activities. Information on inclusion strategies and benefits, learning profile of a child with Down Syndrome and their motor skills and behaviour.	10-min excerpt from video.	No change in overall attitudes following exposure to indirect audio-visual intervention.

Authors and Country	Sample	N	Intellectual Disability Definition	Measurement of attitudes	Contact intervention	Frequency of Contact	Findings
Jacques et al. (1998) New Zealand	Primary school children aged 9-11 from 21 classrooms	22 (with mild intellectual disabilities in 21 classes x 30 pupils in each)	Mild intellectual disability	Pre-post & 5-week follow-up repeated measures. Social Acceptance measure (Asher et al, 1996). All children asked to record name of '3 children in your classroom you would like to invite to your birthday party'. Measured acceptance toward children with intellectual disabilities (1) who attended special classes & (2) who attended regular classes.	Direct contact (Cooperative learning) vs. Control (usual classroom programme). Cooperative learning condition: 4-6 members, 1 with mild intellectual disability. To accomplish group task members had to cooperative and coordinate learning by fitting together individual assignment in order to complete group project.	4 x 30min sessions per week over 6 weeks.	Social acceptance significantly higher for cooperative learning compared to control at post and follow-up. No difference between those returning from special classes and those never attending special class. Social Acceptance: large effect size for experimental group, >1.
Maras & Brown (1996) UK	Children from two national curriculum year 4 classes at mainstream primary school aged 8-10	50	Severe learning disabilities (also, severe mental retardation)	Repeated measures during 3 time periods over 3 months. (1) A five happy/sad faces likert scale to measure affect, (2) a measure of psychological and physical attributes, (3) a post box measure of social distance. A categorization sorting task was administered.	Direct contact vs. Control (no intervention) Direct contact was structured sessions in pairs or groups. Work was collaborative and nondisabled children were given instructions on how to approach tasks.	Weekly afternoon sessions for 3 months.	Social orientations significantly more positive for direct contact but not control. Categorisation became more salient favouring disabilities children had contact with. All 3 measures had large effect sizes, (1) 0.82, (2) 0.8 (3) 0.87.

Authors and Country	Sample	N	Intellectual Disability Definition	Measurement of attitudes	Contact intervention	Frequency of Contact	Findings
Marom et al. (2007) Israel	Pupils aged 10-12 attending 8 general education schools in Israel	170	Intellectual Disability (Cerebral Palsy examined separately).	Pre-post repeated measures. (1) Attitudes Toward Children with Disabilities (ATCD), 19-item 3-point scale (Siller et al., 1967 validated in Israel by Weisel et al., 1988). (2) Specific self-efficacy 18-item, 3-point-scale (based on Children's Self-Efficacy Scale, Bandura, 1989). Term "mental retardation" used.	Direct contact ('Partners to Inclusion' programme, PIP) vs. Control (no intervention). PIP included information giving and joint activities (sports, music, arts and social groups). Two contact groups (N=28, about 19 without intellectual disabilities and about 9 with intellectual disabilities).	Weekly or bi-weekly 30-90 minute session lasting 1 year. Mean contact per participant = 16.75.	ATCD and specific self-efficacy significantly improved as a result of the PIP, but not for control. ATCD – moderate effect size of 0.61. Specific self-efficacy – moderate effect size of 0.45.
Ozer et al. (2011) Turkey	Pupils (male, aged 12-15) from a special education school and a secondary school in large urban community	76	Intellectual Disability (mostly mild)	Pre-post repeated measures. (1) Friendship Activity Scale (Siperstein & Bak, 1985) 4-point scale indicating if they would include child attributed in the listed activity. (2) Adjective checklist (ACL, Siperstein, 1980). 34 items on positive/negative dichotomous scale measuring attitudes by asking judgment of attributes of a new peer	Direct contact intervention (Special Olympics Unified Sports soccer training program) vs. Control. Soccer training: skill training, soccer rules, sportsmanship, team and match tactics, and a soccer tournament was held at the end of the program with parents attending as spectators.	Three 1.5hr weekly sessions over 8 weeks.	Scores on FAS and ACL significantly increased compared to the maintaining of the pre-test scores in the control group. Attitudes towards peers with intellectual disabilities improved, but intentions to play and interact did not. Small effect size for FAS 0.3, moderate effect size for ACL 0.5.

Authors and Country	Sample	N	Intellectual Disability Definition	Measurement of attitudes	Contact intervention	Frequency of Contact	Findings
Piercy et al. (2002) New Zealand	New entrant Grade 2 kindergarten in Auckland elementary school (5-7 years)	41	Intellectual Disabilities	Pre-post repeated measures. (1) Peer-Acceptance Scale (5 items adapted from Moe, Nacoste and Insko, 1981). (2) Social Distance Scale (adapted from Fenrick and Petersen, 1984). (3) Behavioural observations.	Two direct contact conditions vs. control. 1) Cooperative learning. Small groups of 3/4 (1 intellectual disabilities child included) participating fully in-group activities, with equal status and common goal. 2) Social-contact. Participated in similar activities but in individual rather than group form.	40-minute sessions 2 mornings per week for 10 weeks.	Cooperative learning facilitated peer acceptance, reduced social distance and increased positive interactions. No change in social-contact or control conditions. Large effect size >1 for cooperative learning group.
Putnam et al. (1996) USA	Grade 5-8 in 21 classes in 2 schools. 197 boys and 220 girls, mean age 12	417	Special-education classmates (Disabled, (incl. mental retardation)	Pre-post repeated measures. Peer Acceptance was measured using a sociometric method (Asher & Taylor, 1981). Pupils rated each classmate on 5-point scale according to how much they would like to work with that person.	Direct contact under 3 conditions: 1) cooperative learning 2) competitive learning 3) competitive learning (taught by random sample of teachers). Cooperative learning: face-to-face interaction, Use of social skills and group processing. Competitive learning: lecture, class discussion, individual work, periodic tests.	5 weekly 45mins classes for 8 months (cooperative condition used for 2 out of 5 weekly classes).	Perception of Special-Education classmates significantly more positive between pre- & post tests in cooperative conditions compared to no improvement in the competitive condition. Peer acceptance: moderate effect size 0.7 for cooperative learning group.

Authors and Country	Sample	N	Intellectual Disability Definition	Measurement of attitudes	Contact intervention	Frequency of Contact	Findings
Rillotta & Nettelbeck (2007) Australia	Year 6 (M age=11) and year 8 (M age=13) pupils from 2 private coeducational schools. Past pupils (M age=20)	259	Intellectual Disabilities	Attitudes Towards Persons with an Intellectual Disability Questionnaire – 31 items on a 4-point likert scale (modified by Down, 1996 to include Nickson 2001 & Bailey 2004). Administered post intervention.	Direct contact (Awareness of Disability Training Programme, ADP) vs. Control. Direct contact was either a 3-session or 8-session awareness training. All training sessions included structured interactions with pupils with intellectual disabilities and discussion of feelings, attitude and knowledge.	3-session training: 3x45 min sessions over 1 week. 8-session training: 8x45min over 3 weeks. No information regarding 10 week training.	ADP promoted positive attitudes & control did not. 8-session training reported more favourable attitudes than 3-session. 3-session group did not outscore control group. Effect sizes ranged between medium to large: 0.036 for ADP and no ADP, 0.13 for 8-week session, 0.26 for follow up.
Rynder et al. (1990) USA	Children aged 10-13 attended public or parochial schools throughout the Twin Cities metropolitan area.	8	Severe Mental Retardation	Pre-post repeated measures. (1) Non-intrusive observations measuring instances of social interactions recorded. Operationalised as initiating/receiving social interaction. (2) 5-item, likert scale questionnaire that corresponded to perceptions of the relationship with peer with disabilities.	Direct contact intervention: Two week integrated camping program living, playing and working together Cooperative peer training (information, similarities, manual communication signs) to prepare them to interact cooperatively and assist their peers with disabilities as needed.	All day for 2 weeks integrated camping experience 16.76 (5.41) 19.01 (5.62)	Social bids emitted towards peers with disabilities improved but was below the .05 p value. Statistically significant difference in feelings of friendship found toward peers with disabilities. Small effect size of 0.4.

Authors and Country	Sample	N	Intellectual Disability Definition	Measurement of attitudes	Contact intervention	Frequency of Contact	Findings
Shevlin & O'Moore (2000) Ireland	Female pupils attending mainstream schools in suburban area in Dublin aged 13-17	56	Severe profound intellectual disabilities	Pre-post-6-month & 1-year follow-up repeated measures. CARA schools questionnaire (McConkey & McCormack, 1983). 35 items measuring perceptions, comfort at meeting person with intellectual disabilities, frequency of contact and knowledge.	Direct contact (Schools' Link Programme) vs. Control (no contact) Shared classroom sessions in art, crafts and physical education designed to facilitate a cooperative learning approach.	1-1.5 hours weekly sessions throughout school year.	Pupils developed and retained over two-year period positive pro-social attitudes on measures of perceptions and comfort (no change for frequency of contact and knowledge). Moderate to large effect sizes for comfort 0.7, perception >1.
Slininger et al. (2000) USA	Children (aged 9-10) in three grade 4 classes in an upper elementary school	131	Severe mental retardation (concomitant physical disability, wheelchair use).	Pre-post repeated measures. (1) 34 item Adjective Checklist (Siperstein, 1980) to assess children's judgments of the attributes (strengths and weaknesses) of peers with disabilities. (2) 15 item Intention Scale (adapted from Siperstein, 1980) to measure behavioural intentions of school children.	Direct contact (in a physical education class) under two conditions vs. Control. 1) Structured contact throughout lesson (encouraged to interact with target child). 2) Unstructured contact (only during 5-minute warm-up). 2 target children per class of 37-49 children.	25-minute daily physical education classes for 4 weeks.	No statistical significance between condition 1 and 2. Female attitudes did not change and were more favourable than males. Male adjective scores in structured condition improved & male intention scores in unstructured group improved. Adjective: small effect size 0.3, intention: small effect size 0.2 for structured group.

Table 3. *Quality Assessment of Studies included in the Literature Review using the Health Evidence Bulletin*

Study	1. Relevance	2. Focus	3. Method	4. Tables/ Graphs	5. Analysis	6. Findings	7. Relevant locally	8. Results	Overall Assessment
Burns et al. (1999)	Y	Y	Y	Y	Y	N	Y	Y	+
Carter et al. (2001)	Y	Y	Y	Y	Y	Y	Y	Y	++
Cohen et al. (2012)	Y	Y	Y	Y	Y	N	Y	Y	+
Favazza & Odom (1997)	Y	Y	Y	Y	Y	Y	Y	Y	++
Gannon & McGilloway (2009)	Y	Y	Y	Y	Y	?	Y	Y	+
Jacques et al. (1998)	Y	Y	Y	Y	?	Y	Y	Y	+
Maras & Brown (1996)	Y	Y	Y	N	Y	Y	?	Y	+
Marom et al. (2007)	Y	Y	Y	Y	Y	Y	Y	Y	++
Ozer et al. (2012)	Y	Y	Y	Y	Y	Y	Y	N	+
Piercy et al. (2002)	Y	Y	Y	Y	Y	Y	Y	Y	++
Putnam et al. (1996)	Y	?	Y	Y	Y	Y	Y	Y	+
Rillotta & Nettelbeck (2007)	Y	Y	Y	Y	Y	Y	Y	Y	++
Rynders et al. (1990)	Y	Y	Y	Y	Y	N	N	Y	+
Slininger et al. (2000)	Y	Y	Y	Y	Y	Y	Y	Y	++

Note: Y = Yes; N = No; ? = Can't tell; ++ = High Quality; + = Medium Quality; - = Low Quality

1. What interventions have been delivered to children and young people that provide contact with a target with intellectual disabilities and have been evaluated?

Of the 15 articles selected, 14 were direct contact programmes and one was an indirect film-based intervention (Gannon & McGilloway, 2009). Eleven of the direct contact studies included in this review could be categorised as peer interaction programmes, whereas three were cooperative learning programmes (Jacques et al., 1998; Piercy et al., 2002; Putnam et al., 1996).

The peer interaction programmes were designed to create opportunities for positive and structured social interaction between peers with and without intellectual disabilities in order to provide mutually beneficial educational and social outcomes. These often relied on voluntary participation; volunteers were told that they would be given opportunities for awareness-raising and direct contact with a person with a disability. Methods of intervention were thus focused on more direct and discernible procedures, such as knowledge of disability, communication and behaviour strategies, and social interaction activities. Programme success often depended on proper recruitment and preparation of pupils for the programme, effective scheduling of interactions, identification and selection of appropriate activities, and the development of measurable programme goals. An exception was two of the peer interaction studies (Burns et al., 1999; Ozer et al., 2011) that were experiential only, and focused on the principles and procedures of service learning and unified sports rather than explicit attitudinal awareness-raising procedures.

Cooperative learning refers to the practice of having a small group of pupils with mixed ability levels working together, with each member having equal status

within the group, to help each other accomplish a specified learning task. These were experiential only and thus focused on the principles and procedures of cooperative learning rather than awareness of disability *per se*. The three cooperative learning studies involved school children without disabilities working in groups that included at least one child who had an intellectual disability engaged in activities that followed cooperative learning principles: working together, sharing things, helping each other, talking politely to each other, checking that others understand and that they agree. These principles were introduced and positively reinforced by the teacher/researcher. It could be argued that cooperative learning and experiential only strategies were able to evaluate the effect of contact on attitudes in a more indirect and subtle way than those which used explicit attitudinal awareness-raising procedures.

Seven (Carter et al., 2001; Cohen et al., 2012; Favazza & Odom, 1997; Marom et al., 2007; Rillotta & Nettelbeck, 2007; Rynders et al., 1990; Slininger et al., 2000) of the 14 direct contact studies included in this review were multi-component interventions combining awareness-raising sessions with opportunities for contact between children and young people with and without intellectual disabilities. Five (Burns et al., 1999; Jacques et al., 1998; Ozer et al., 2012; Piercy et al., 2002; Putnam et al., 1996) tested the effect of a contact experience without additional orientation sessions, and two studies did not specify whether they provided awareness sessions alongside contact (Maras & Brown, 1996; Shevlin & O'Moore, 2000).

Specific details of the quality and nature of the contact component were often limited to a brief summary description and thus low on replicability, with the exception of two studies (Favazza & Odom, 1997; Slininger et al., 2000). Maras & Brown's (1996) paper did not provide any detail of the contact experience rather outlining that the programme involved structured sessions working collaboratively in

pairs and groups, and favoured Hewstone & Brown's (1986) model of categorised contact and a number of Allport's (1954) contact conditions.

Alongside offering awareness, information and knowledge about intellectual disabilities (and disability more generally), some studies offered training that reflected the specific focus of the intervention and severity of intellectual disabilities. For example, as part of the leadership programme, training involved prejudice, stigma, disability rights, equal opportunities, and leadership skills (Cohen et al., 2012), whilst a programme which focused solely on raising disability awareness included guest speakers, an awareness video, class presentation and discussions (Rillotta & Nettelbeck, 2007). Two studies provided young people with both awareness and specific instructional strategies on how to interact and communicate with young people with severe intellectual disabilities; Carter et al.'s (2001) programme included interaction strategies and Rynder et al.'s (1990) integrated camping programme included manual communication signs.

Another difference between the interventions was found in their development and implementation. Most of the interventions were funded, developed and implemented by the school and/or an official body whilst others by the authors. Seven of the studies developed and implemented by the school and/or official body tended to be structured manualised programmes often included in the school curriculum. They could be seen to provide opportunistic research, aimed at evaluating their effectiveness within schools with school-aged children. For example, the 'Youth Leadership Program' was routinely implemented in junior high schools (Cohen et al., 2012) and the 'Awareness of Disability Programme' had been in place for a decade within a school that encouraged an inclusive learning environment, including on-going positive contact between peers with and without intellectual

disabilities (Rillotta & Nettelbeck, 2007). Similarly, the Integration Programme evaluated by Maras & Brown (1996) had been in operation for years within a school, which at the time of the evaluation had a strong ethos of the importance of the integration of children with Special Educational Needs (SEN).

Unfortunately more information regarding the school context was not provided by any of the papers included in this review. In other words, it remained unclear to what extent schools practiced inclusivity, whether they regularly delivered anti-bullying, anti-stigma, or pro-inclusion work (and if so what these were), and if they had an ethos or overall message regarding the inclusion of pupils with disabilities. These unknown contextual factors could have easily confounded the effectiveness of these interventions. For example, pupils attending a school with a strong anti-bullying focus may well be biased towards expressing more pro-social attitudes, whether or not they necessarily subscribe to them.

Other studies based their intervention programmes on previous research and theory either implemented by staff members or by the authors. In evaluating a cooperative learning intervention, Piercy et al.'s (2002) programme was based on Johnson and Johnson's (1999) "learning together and alone" procedures and implemented by the teachers. Another cooperative learning programme by Jacques et al. (1998) was based largely on a unit devised by Aronson et al. (1978) and on Slavin's (1983) modification of this unit, and was developed and implemented by the first author. Although Jacques et al. (1998) controlled for differential treatment and/or teacher bias, they argued that teachers ought to develop and run interventions if they are to survive long-term within schools.

Three of the papers included in this review assessed peer interaction

programmes that were designed and implemented by the authors. These provided a more in-depth description of the quality and nature of the contact. A study by Favazza and Odom (1997) encouraged contact by employing 'environmental arrangement strategies' to increase structured play between peers. These included limiting space, selecting materials and activities that promote social interaction, rotating and limiting materials. The authors followed guidelines from the Vanderbilt-Minnesota Social Interaction Project and chose toys and play activities that encouraged social rather than solitary play. Another study by Slininger et al. (2000) based contact activities on Orlick's (1978) criteria for a cooperative game experience; children took it in turn as 'special helpers' to assist and maintain close contact with the target child; staff positively reinforced and modelled interactions; games were adapted to maximize contact. Rynder et al. (1990) reported that cooperative interaction strategies encouraged contact between peers by using a three-step model of assistance: verbal instruction proceeded, if necessary, with demonstrating the task followed lastly by gentle hand-over-hand guidance.

2. What are the effects of these interventions on children's and young people's attitudes towards people with intellectual disabilities?

Of the 15 articles included in this review, 13 reported a positive outcome as measured by self-report attitude and social distance questionnaires following the effects of a contact-based intervention compared to a no intervention control group. However, two reported no significant outcome (Gannon & McGilloway, 2009; Slininger et al., 2000). Of those finding a positive outcome, none were rated low quality, seven were rated medium quality (Burns et al., 1999; Cohen et al., 2012; Jacques et al., 1998; Maras & Brown, 1996; Ozer et al., 2012; Putnam et al., 1996;

Rynder et al., 1999), five were rated high quality (Carter et al., 2001; Favazza &

Odom, 1997; Marom et al., 2007; Piercy et al., 2002; Rillotta & Nettelbeck, 2007).

Only three studies (Maras & Browns, 1996; Piercy et al., 2002; Slininger et

al., 2000) used all three components of attitude formation (cognitive, emotional and

behavioural) to measure attitudes, the remaining studies mainly focused on the

cognitive aspect of attitudes. Measures of behavioural intentionality and actual

behaviour were largely ignored and thus they failed to assess whether the positive

effect of contact-based interventions on improving attitudes would necessarily

translate into inclusive behaviour. Although the studies included in the review

provide some insight into attitudes held towards individuals with intellectual

disabilities, the limitations described below decrease the weight that can be placed on

these results and thus the conclusions that can be drawn from them.

Overall, the primary methodological weakness concerned the measurement

used to assess attitudes, as few were able to provide insight into attitudes towards the

diagnostic label intellectual disabilities. Only three of the papers included in this

review (Marom et al., 2007; Rillotta & Nettelbeck, 2007; Shevllin & O'Moore, 2000)

used measures to assess attitudes towards people with intellectual disabilities

following contact with peers with intellectual disabilities; though it is unclear if

Shevllin & O'Moore's (2000) study provided a baseline definition of intellectual

disabilities. However, because the remaining studies measured attitudes toward peers

with disabilities more generally and/or provided direct contact with a cohort of mixed

disabilities, including intellectual disabilities, they were unable to inform accurate

responses to attitudes toward people with intellectual disabilities. These findings thus

report on typically developing children and young people's attitudes toward people

with broad disabilities, of which some had intellectual disabilities. For example, the

Acceptance Scale (ASK, in Favazza & Odon, 1997) measures acceptance of people with disabilities generally or people described as 'different' (e.g. cannot see or walk), after exposing typically developing pupils to peers with multiple disabilities (physical, language, health, visual impairments and 'mental retardation'). Similar to this, the Attitude Toward Disabled Persons questionnaire (ATDP, used by Cohen et al., 2012) measured effects on attitudes towards disabilities more generally, rather than intellectual disabilities.

In addition, although five of the studies asked participants to measure attitudes towards peers with whom they had experienced contact (described as having intellectual disabilities), the many methodological weaknesses in these studies, such as their failure to provide a diagnostic label and differentiate intellectual disabilities from other disabilities, raises doubt regarding the accuracy of these findings. These findings, rather than provide insight into attitudes towards intellectual disabilities, could reflect attitudes towards classroom peers seen as having severe disabilities, special needs and/or difficulties; e.g., "from Miss Brown's class" (Piercy et al. 2002). The three cooperative learning studies used social acceptance measures by asking participating pupils to record the name of three class members they would like to invite to their birthday party (Jacques et al., 1998); to indicate acceptance and social distance of peers represented by coloured photographs (Piercy et al., 2002); or to rate each classmate ('special education students', three of which had mental retardation) according to how much they would like to work with them (Putnam et al., 1996). The generalisability of these findings is questionable as it is impossible to assume that the positive expression of attitudes necessarily translates into positive attitudes towards intellectual disabilities.

Rynder et al.'s (1990) study also assessed social acceptance; campers were

asked daily about their perceptions of and relationships with their 'friends' with disabilities. However, one of the target children had a diagnosis of autism, and although information regarding the target children was provided, similar to the cooperative learning studies, a baseline definition of intellectual disabilities was not given and thus scores failed to reflect attitudes towards people with intellectual disabilities.

Although these studies did not claim to evaluate attitudes towards intellectual disabilities only, but rather attempted to assess the effect of contact on attitudes towards broad disabilities, Maras and Brown's (1996) study demonstrated the importance of categorising different disabilities and measuring attitudes towards these different categories. The authors used photographs of both known (children with intellectual disabilities from the contact experience) and unknown children (physical disabilities, hearing impairment and Downs Syndrome), to assess typically developing children's categorization of, and attitudes toward, intellectual disabilities in comparison to other disabilities. They found that categorization and subtyping of disabilities became more salient and differentiated over time, and more importantly, that results were most positive and significant toward the category 'intellectual disabilities' and the category 'physical disability' with which the contact was experienced (some of the children with intellectual disabilities were also in wheelchairs and had physical as well as intellectual disabilities). Results showed that children had different attitudes towards different categories of disabilities; favouring the attitudes to those they had been exposed to. This clearly illustrates the need to categorise different disabilities when measuring attitudes, as different disabilities will elicit different attitudes. Also, defining which disability type participants are being

exposed to will guarantee that any attitude change is in fact an outcome of the contact experience.

The Social Distance Questionnaire (SDQ; used by Carter et al., 2001) used the term 'a person with mental retardation' interchangeably with 'person with disabilities', following contact with pupils with 'severe disabilities' (multiple disabilities, mental retardation and autism). Although typically developing pupils were trained on the different categories of disabilities prior to contact, these categories were not maintained during the contact experience or during the administration of the questionnaire. Unlike Marom et al.'s (2007) study which evaluated attitudes towards intellectual disabilities separately from cerebral palsy, this study failed to reveal attitudes towards the different categories of disabilities, such as attitudes toward intellectual disabilities only.

Slininger et al. (2000) used target children with mental retardation and concomitant physical disabilities (requiring a wheelchair) to participate in contact and to represent 'a student from the severely disabled classroom' as stated in the adjective and intention scale. However, it was unclear if the typically developing children were provided with a baseline definition of intellectual disabilities in order to inform valid responses to the measures. Rather, children were told that peers with severe disabilities would be joining their class and information on how to interact with them was given.

Ozer et al.'s (2012) study assessed attitudes towards young people with intellectual disabilities by using the Friendship Activity Scale (FAS) and an Adjective Checklist (ACL). However, the authors did not specify if the FAS measured intellectual disabilities, or disabilities more generally, but rather referred to attitudes towards 'individuals with unique attributions'. Burns et al. (1999) used the Attitudes

Towards Individuals with Severe Disabilities scale (ATISD), which depicts scenarios in the community and asks for a reaction. A sample item was given which referred to the target young person as 'severely mentally retarded'. However, on describing the questionnaire, the authors stated that it measured perceptions toward 'severe disabilities' thus leaving it unclear if they assessed attitudes towards severe disabilities generally or severe mental retardation specifically. Moreover, although in their paper pupils with severe disabilities were described as mostly having severe intellectual disabilities, similar to Slininger et al.'s study (2000), typically developing pupils were told that peers with 'severe disabilities' rather than 'severe intellectual disabilities' would be joining them. Again, this raises questions regarding the specificity of questions posed and the findings.

3. Do any factors emerge as particularly important in promoting positive outcomes of contact based interventions?

Most of the studies did not analyse process variables and thus cannot determine which aspects of the programme or to what extent they contributed to attitude change. Rather, majority of these studies assessed the effects of contact on various outcomes and were thus only able to postulate hypotheses regarding key mechanisms of change. As a result, little is still known about which factors emerge as important in promoting positive outcomes of contact based interventions. Despite this, some of the studies used comparisons between experimental groups to provide opportunities for more precise examination of the variables involved in contact-based interventions as vehicles for attitude change. Three studies conducted longitudinal studies and were thus able to report on the effects of contact over time. Many of the studies compared a contact intervention with an inclusive educational environment

and thus concluded that contact-based anti-stigma programmes were more effective that mere exposure.

In comparing results from experimental groups 1 and 2, Burns et al. (1999) found that advocating 'shared responsibilities' during service learning (building a communal garden together) generated positive results in comparison to 'unequal responsibilities' whereby pupils with intellectual disabilities were the recipients of service. They concluded that providing young people with and without intellectual disabilities equal access and equal participation for learning was a key factor responsible for positive attitude change.

Rillotta & Nettelbeck (2007) found that shorter interventions compared to longer ones, might not be enough to change attitudes. However, although the longer intervention was completed with older children, the shorter intervention was completed with younger children who may not have been developmentally ready for the messages communicated in training. Also, comparing length of intervention by using two samples that differ in age range lacks methodological rigour and can lead to questionable results.

In the context of sustained contact, Shevlin & O'Moore (2000a) found lasting effects on confidence scores over a two-year period. This demonstrates that sustained contact over a considerable period of time has enduring positive effects on raising participant confidence when it comes to interacting with a person with an intellectual disability. However, raising confidence as a key mechanism for promoting attitude change was not assessed in this study.

Whilst assessing the difference between those who chose to volunteer in a contact-based intervention and those who did not, Carter et al. (2001) found that accurate information about (knowledge) or positive feelings (affect) concerning

intellectual disabilities are not critical factors in a pupils' decision to enrol in this type

of programme, whereas prior contact and greater social willingness are. In fact,

results show that pupils with more exposure, compared to those with less, score

higher on social willingness. These last two factors appear to indicate that frequency

of contact and intentionality might have an impact. The authors thus suggested that

multi-component programmes need to prioritise contact experiences over awareness-

raising in order to attract people to participate in these programmes, and to promote

more willingness to engage in intergroup contact. However, this somewhat circular

process (contact promotes greater social willingness which in turn promotes more

contact and so on) raises questions as to the direction of the relationship between prior

contact and social willingness. Also, and in contrast, Shevlin and O'Moore (2000a)

found that prior contact does not independently predict attitudes towards peers with

intellectual disabilities in the 6-month or 1-year period after intervention.

Another interesting result from Shevlin & O'Moore's (2000) study is that

prior to intervention, scores for comfort are significantly higher in the matched

control group than the experimental group. The authors attributed this to the

possibility that those in the control group were aware that they would not experience

contact with pupils with intellectual disabilities and thus felt safe and comfortable

enough to express positive intentions. Increasing comfort and confidence in meeting

a young person with intellectual disabilities was postulated as an important variable to

consider when designing intervention programmes.

Maras and Brown (1996) was the only study to measure the effects of contact

on categorisation of different disability types. The finding that attitudes differ

towards different categories of disabilities favouring the attitudes of the target

disability, suggests that providing a category and definition of disability might be a key factor in the success of contact-based interventions.

Most of the studies, which compared a structured contact-based intervention with an inclusive education setting, found that the type of exposure provided was more important than the exposure *per se*. A study by Piercy et al. (2002) assessed this directly by comparing cooperative learning (contact-based intervention) with social contact (normal inclusive classroom) and a control group (no classroom contact), and found that direct contact interventions were necessary to bring about more widespread change. Burns et al. (1999) also concluded that since results for the recipients of service learning (unequal responsibilities) and controls were the same, structured contact was more powerful than mere exposure. Rillotta and Nettelbeck (2007), Carter et al. (2001), and Favazza and Odom (1997) suggested that inclusion together with a structured awareness programme was a more effective form of improving attitudes toward intellectual disabilities. Whilst Jacques et al. (1998) and Putnam et al. (1996) also found that a cooperative learning intervention was more effective in changing children's attitudes than a usual integrated classroom, and thus a necessary component of inclusion.

In these cooperative learning studies the experimental groups were compared to a normal inclusive classroom, which one study termed 'competitive' rather than 'cooperative' learning style (Putnam et al, 1996). Positive results for cooperative vs. competitive learning indicates that its use within contact based interventions might be an important factor to effect positive attitude change. Participants in a number of peer interaction studies were reported to engage collaboratively during the contact experience, however, the principles of 'cooperative learning' as a necessary factor of contact was not specifically assessed in these studies.

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Three out of the four studies reporting on differences between genders found significant results for increased positive attitudes amongst female participants compared to males. On finding improved attitudes amongst females compared to males, Slininger et al. (2000) posited that males need a different and more intense programme of contact than females in order to improve attitudes. However, the authors failed to identify which factors would be needed to effect positive attitude change of males compared to females. It is also possible that females simply report more positive attitudes in explicit attitude tests, and that, as reported in a recent review of the literature (Wilson & Scior, 2014), no gender differences emerge in implicit attitude tests.

Only one study (Cohen et al., 2012) attempted to compare the effects of awareness/knowledge with contact on attitudes towards disabilities. However, although they found contact a more effective component for attitude change, this was assessed as an outcome variable and thus it is unclear if changes are primarily a result of knowledge or contact.

With regards to age, because the studies included in this review were all conducted with different ages ranging from five to 18 years of age, collectively the available evidence could be seen to suggest that contact-based interventions are successful in changing attitudes amongst a wide range of ages. However, the effect of age as a potential outcome moderator was not assessed in these studies. It thus remains unknown whether the individual interventions presented in these papers would be successful beyond the age group they tested for, or which programme factors emerge as necessary to effect change within different age groups.

In addition, many of these interventions did not offer clear theoretical underpinnings regarding attitude change, rather, positive findings were attributed to

Allport's core contact conditions as an after thought. This conceptual limitation also noted by Scior and Werner (2015) brings to question the credibility of their "post-hoc" explanations. Positive results were generally ascribed to structured and planned contact, which involve cooperative tasks and clearly defined roles (Maras & Brown, 1996; Marom et al., 2007). Most of these studies thus claimed support for Allport's (1954) contact conditions, specifically amongst children and young people's attitudes towards their peers with disabilities. In Piercy et al.'s study (2002) they argued that cooperative learning procedures were indeed based on Allport's (1954) contact conditions, for example, group members had equal status roles in pursuit of a common goal and learning was structured so all group members made contributions to the team outcome. According to this, the success of and support for cooperative learning could thus be extended to contact theory.

Discussion

This review indicates that research into the effects of contact based interventions on children and young people's attitudes towards those with intellectual disabilities is thus far limited, with majority of studies investigating contact with mixed disabilities, of which some had intellectual disabilities, and employing measures which assessed attitudes towards general disabilities. Although many of the studies evaluated the effects of contact with intellectual disabilities (as can be seen in table 2), The many methodological limitations unfortunately do not allow us to infer any effects of contact on attitudes towards intellectual disabilities *per se*. For example, participants were not provided with a baseline definition of intellectual disabilities and therefore did not know they were interacting with a person with an intellectual disability or that they were answering on attitudes towards intellectual

disabilities. Questionnaires did not capture attitudes towards people with intellectual disabilities rather they asked for attitudes towards people who were 'disabled', 'different' or from 'Mrs Brown's class'. Nor were people with intellectual disabilities evaluated separately from people with other types of disabilities in these studies therefore participants were unable to accurately report on attitudes towards people with intellectual disabilities only. Nevertheless, the evidence available to date suggests that the effect of contact between children and young people with and without intellectual disabilities is mostly positive, although little is known about which factors of contact improve attitudes. Despite this, there is tentative evidence to suggest that contact needs to be more than one-off, structured and collaborative rather than via inclusive education alone. However, this merits further careful examination.

Methodological issues

The evidence has a number of important methodological limitations that should be addressed in future research in this area. Twelve of the studies examined the effects of contact on attitudes towards disabilities more generally, rather than the actual effects on attitudes towards 'intellectual disabilities'. This is a strong limitation of the studies given disabilities vary greatly, from type, to severity and behaviours and that attitudes are greatly influenced by the different characteristics associated with disabilities (Weiserbs & Gottlieb, 2000); for example, negative attitudes being associated with more severe intellectual disabilities and lower levels of functioning (Morin et al. 2013). The time, culture and country in which the paper was written would also produce great variation with regards to the labels used to describe people with intellectual disabilities in the literature.

The terminology used in the studies may have affected their findings; for

example, people may associate the term 'mental retardation' with more severe intellectual disabilities than those implied by the term 'learning disabilities'. Furthermore, lack of knowledge or misconceptions about the term 'intellectual disabilities' may affect people's ratings of questions regarding attitudes. Many studies did not include a definition of intellectual disabilities or its respective term, and did not exclude other terms or diagnoses (such as autism, or specific learning difficulties), which people may associate with intellectual disabilities. Some studies failed to use questionnaires, which corresponded to the target disability used during the intergroup contact, thus making it unclear whether attitudes were the effect of contact. Since many schools do not overtly label pupils who are disabled in keeping with equal opportunities, many pupils remain unaware of who has an intellectual disability (unless they are obvious e.g., Down Syndrome), and its associated characteristics. Given this, participants will not necessarily make the link between the contact experience and the term used in the questionnaire as pertaining to the same person, raising further questions regarding the validity of findings. Furthermore, inconsistencies between studies in terms of methodology and measurement make comparisons between findings more difficult, including those between direct and indirect contact, or between multi-component and contact only.

Most studies used standardised methods of measuring attitudes, with good reliability and validity, though all results were derived from explicit self-report measures of attitudes. Whilst a majority measured attitudes towards an impersonal person with disabilities, the four studies (Jacques et al., 1998; Piercy et al., 2002; Putnam et al., 1996; Rynders et al., 1990), which used measures to assess the target children from the contact experience, may increase content validity. However, without a diagnostic label, pupils would not have been answering on attitudes towards

intellectual disabilities therefore reducing external validity. Furthermore, due to this lack of categorisation and definition, participants may not have known which disability type the questionnaire was referring to. It is conceivable that answers were based on different understandings of what the diagnostic label and/or description, e.g., 'mental retardation', different' or 'person with disabilities' referred to.

No studies employed implicit measures of attitudes, which have attracted increasing attention recently. Attitude scores taken from explicit measures may differ from those measured implicitly, explicit self-report measures reporting more favourable results, and this requires further investigation. Self-report explicit measures of attitudes are most susceptible to biases such as social desirability, than implicit measures. The school context, teachers and parents own biases, which have been shown to influence young people's attitudes (Antonak & Livneh, 2000), were not considered in any of the studies included in this review. Furthermore, many studies have used more than one measure of attitude, which demonstrates the multi-dimensionality of the attitude construct. While some studies measured behavioural intentions through the use of social distance scales, the relationship between contact, attitudes and actual behaviour was only assessed in two of the studies reviewed (Piercy et al., 2002; Rynders et al., 1990), which is a major limitation given evidence on the moderate association between attitudes and actual behaviour (Kraus, 1995). The attitude literature suggests that explicit measures of attitudes may predict only deliberate rather than spontaneous behaviour, here implicit measures may predict the latter (Maio & Haddock, 2010), demonstrating limits in what current studies may be able to explain.

The measurement of contact in the studies raises many issues. Most of the

studies were opportunistic and did not outline the details of the contact experience

making it difficult to replicate and form an evidence base to recommend to schools.

Most of these studies represent descriptive accounts of contact with and attitudes

towards intellectual disabilities signifying a lack of research testing theory based

models, such as the relationship between contact, intergroup relations and attitude

formation. Only three studies (Maras & Brown, 1996; Marom et al., 2007; Slininger

et al., 2000) specifically measured theory (Hewstone & Brown's model of categorised

contact; Theory of Planned Behaviour; conditions for contact as theorised by Allport,

1954 respectively), as an aim of research, rather than an explanation of results.

Furthermore, in many studies, participants were grouped on a dichotomy of structured

contact versus unstructured/no contact, with little or no attention to other factors

pertaining to the contact. Some studies included assessment of different components

of contact, such as frequency and quality, although these were often only assessed as

outcome variables. Studies ought to assess different components of contact, as

process variables in order to identify which key factors are needed to influence

attitude change. There is some suggestion in the literature that positive attitudes are

associated with capabilities, skills, comfort, confidence (Morin et al, 2013) and

perceived similarities in interests and abilities (Brown et al., 2011). However, these

significant associations have not yet been explored in relation to the effects of contact

on attitudes towards intellectual disabilities. Mediation analysis of these psychosocial

variables might start to identify important factors. Although comfort was assessed as

an outcome variable, and found to endure over time, contact was found to decrease

over time thus suggesting that raising comfort does not automatically effect

behavioural changes. In fact, one study (Ozer et al., 2012) found that although

changes had been found for attitudes, no change was found for behavioural intentions,

suggesting that more needs to be investigated to effect behavioural change.

Studies investigating the difference in attitudes towards disabilities reported by male and female participants have provided some interesting results. Of the studies in this review that included information on the gender of participants (N=14), all but two used a mixed gender sample of which two had majority 87% females. Only four of the total studies completed analysis for gender differences. Of these, three found significant results for increased positive attitudes amongst female participants compared to males. This supports previous research into explicit attitudes, which has suggested that women often report more positive attitudes towards individuals with disabilities than men (Wilson & Scior, 2014). Given these findings, consideration of possible gender differences in these studies would seem pertinent, particularly when the ratio between females and males was equal across 12 studies. This lack of examination leaves a gap in the literature regarding the relationship between contact, attitudes and gender in a younger sample.

This review suggests that structured contact is more effective at changing attitudes than mere exposure. These findings are broadly in line with Freeman and Alkin's (2000) systematic review, which found that inclusive education alone is not enough to improve attitudes towards peers with intellectual disabilities. Future research is needed to address Pettigrew et al.'s (2011) suggestion that 'mere exposure' accounts for positive attitudes following intergroup contact. More information about negative contact experiences, for example, is required to make any conclusions as to whether this could result in negative attitudes. Despite the positive effects of structured contact, most of the studies did not assess contact versus mere exposure directly. Rather, and perhaps due to a lack of choice, studies used an inclusive

educational setting as the control condition. It is also important to note that studies need to clearly define what they mean by 'mere exposure' and/or exposure through 'inclusive education' to guarantee consistency and clarity between studies.

Many of the studies in this review attribute positive results to Allport's (1954) contact conditions. However, these conditions, hypothesised as necessary for successful contact, were not explicitly tested and therefore attribution to Allport's (1954) contact conditions is theory based and not empirically tested. Also, if many of the cooperative learning principles are based on Allport's (1954) contact conditions, then cooperative learning might be an effective way to implement and measure Allport's (1954) conditions within an educational context. However, further information is required to assess Allport's (1954) conditions for contact with people with intellectual disabilities, both within schools and in relationship to cooperative learning.

Although this study conducted quality-rating for the articles reviewed, the methodological problems were not necessarily captured in the quality-rating tool used for this study. In particular the dimensions provided by the evaluation tool did not discriminate between the administration of good versus bad measures. Although the tool had prompt questions to aid evaluation, these were brief and vague and did not provide sufficient details to warrant them helpful. Furthermore, the rating of each article was not different enough to generate any interesting pattern or insight regarding the articles. Unfortunately, for these reasons, the quality ratings were not used in the interpretation of the results.

Future research

In order to measure and analyse the effects of contact on attitudes towards intellectual disabilities it is important that there is some standardisation in how it is measured. Without categorisation diagnostic labelling and/or description, findings will not reliably assess attitudes towards people with intellectual disabilities. Questionnaires also need to capture specific characteristics pertaining to intellectual disabilities, in order to effectively measure attitudes towards this disability type. Future studies also need to assess personal experiences (such as family members with an intellectual disability, upbringing, values and beliefs) that may influence attitudes. In addition, further exploration is needed of parents' and teachers' perspectives, not only to confirm consistency of opinions across home, school and self-report measures, but also because their attitudes may be reflected in the pupils' attitudes.

There is a need for more focused research into the impact of contact on attitudes within an educational setting, looking at various aspects such as quality, frequency and nature of contact and how these may influence different aspects of attitudes. The effectiveness of contact also needs to be assessed longitudinally in order to explore the stability of positive change over time. Attitude measures need to consider the behavioural domain, but at least include a measure of behavioural intent. This is likely to create much clearer possibilities for interventions aimed at reducing stigma. Only one study assessed the effects of indirect contact (and it was assessed as a secondary aim), given the logistical problem of providing structured and direct contact interventions within schools, research needs to draw on indirect contact as an alternative.

Clinical implications

This current review suggests that contact between children and young people with and without intellectual disabilities is effective in reducing negative attitudes towards people with intellectual disabilities. There is a need however, for further research to differentiate and categorise the different disability types, in order to effectively measure contact with and attitudes towards the diagnostic label intellectual disabilities. Furthermore, future research needs to look into the different components of contact to identify the type of contact most likely to improve children and young people's attitudes towards people with intellectual disabilities, and ultimately reduce stigma. Seeing as attitudes do not always translate into actual behaviours, more studies need to measure actual behaviour as an outcome of intervention, and to highlight which facet of contact effects positive behaviour change.

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Part 2: Empirical Paper

Can an Imagined Contact Intervention delivered in Schools Reduce Prejudice towards People with Intellectual Disabilities?

Abstract

Background: Contact is seen as a key route to tackling the stigma associated with intellectual disability. Contact can be costly and difficult to implement in practice so studies have begun to investigate indirect contact as an alternative component of anti-stigma interventions. The act of imagining intergroup contact in the form of a positive interaction has been found to improve prejudice towards the out-group; however, the majority of studies are conducted with adults in a laboratory environment. To date only one study has conducted imagined contact to reduce stigma towards intellectual disabilities.

Aims: The present study set out to examine whether the effects of an imagined contact intervention reduces children and young people's stigma towards intellectual disabilities. This question was examined again at 17 weeks follow-up. It also set out to ask whether intergroup anxiety mediated intergroup attitudes and whether contact self-efficacy mediated social distance.

Method: Two hundred and one children and young people were randomly allocated to either an imagined contact or control condition and completed measures of intergroup attitudes, intergroup anxiety, social distance and contact self-efficacy towards people with intellectual disabilities. Differences between group and time were analysed.

Results: No statistically significant differences were found between groups post intervention and at 17 weeks follow-up. Mediation was not found; however, an

association between intergroup anxiety and intergroup attitudes and between contact self-efficacy and social distance was found to exist.

Conclusions: Future research aimed at reducing intellectual disability stigma through the use of imagined contact, should adjust the imagined contact scenario to fit a school context. Future research should also consider examining prior contact and whether the imagined person with an intellectual disability is representative of people with intellectual disabilities as a whole. Reasons for insignificant findings are considered.

Introduction

Intellectual Disability and Stigma

Research into stigma towards intellectual disabilities has provided much information regarding its social, psychological and emotional impact, and has influenced legislation and policy to support the rights, independence and empowerment of people with intellectual disabilities. However, stigma towards people with intellectual disabilities remains a significant social problem undermining the success of these policies. Stigma has significant negative effects on relationships, opportunities, employment, access to services as well as the stigmatized individuals' self-esteem, and vulnerability to self-stigma and mental health problems. Thus changing stigma towards people with intellectual disabilities is important for the success of these policies.

Phelan, Link, and Dovidio (2008) proposed three theoretical drivers of stigma related to issues of domination, conformity and illness. Despite there being no adequate theoretical model of public stigma and behaviour in the area of intellectual disabilities (Scior, Addai-Davis, Kenyon, & Sheridan, 2012), disease avoidance has been applied most clearly to visible illnesses and disabilities (Oaten, Stevenson, & Case, 2011), and refers to the desire to avoid contact with a particular group of people. This facet of public stigma has been measured consistently in the form of social distance (Jorm & Oh, 2009), and is central to the definition of stigma put forward by the 2001 World Health Report.

Deinstitutionalisation and the subsequent movement towards the social inclusion of people with intellectual disabilities within mainstream society have dominated public policies for several decades. However, despite these efforts, continued societal barriers and discrimination indicate that inclusion has mostly taken

the form of physical rather than social integration (Cummins & Lau, 2003). For example, research consistently shows that people with intellectual disabilities remain one of the least desirable groups to socially interact with (Nagata, 2007) indicated by the hostility they are subjected to when engaging in community activities with others (Stalker & Lerpiniere, 2009). The public has been found not to want them as neighbours (Lau & Cheung, 1990), or socialise with them in the presence of their non-intellectually disabled friends (Ouellette-Kuntz, Burge, Brown, & Arsenault, 2010). Not only have the public expressed hostility and suspicion towards social inclusion (Yazbeck, McVilly, & Parmenter, 2004), but children with intellectual disabilities attending inclusive education are rarely chosen as friends and avoided by their peers (Hurst, Corning, & Ferrante, 2012; Nikolaraizi et al., 2005).

Members of stigmatised groups usually face negative attitudes and discriminatory behaviours (Thornicroft, Rose, Kassam, & Sartorius, 2007), which can be disabling and hinder integration efforts. Despite some studies reporting positive attitudes towards people with intellectual disabilities (Ouellette-Kuntz et al., 2010; Scior, Kan, McLoughlin, & Sheridan, 2010), most have highlighted less favourable attitudes. Particularly with regards to knowledge of causes (the cognitive aspect of attitudes) and affective responses, in that people mainly tend to feel sadness or pity when presented with someone with intellectual disabilities (Morin, Rivard, Crocker, Boursier, & Caron, 2013). Furthermore, a recent review identified a consistent pattern of moderate to strong negative implicit attitudes, indicating that negative attitudes towards people with intellectual disabilities pervade, even among people who work in close relation to them and report positive explicit attitudes (Wilson & Scior, 2014).

Research has also investigated the feelings or emotions, which underpin negative attitudes. Thornicroft, Rose, Kassam, and Sartorius (2007), in relation to mental health stigma, suggested that anxious, angry, hostile and disgust emotions expressive of prejudiced attitudes influence the development and maintenance of negative attitudes. Specific to intellectual disabilities, research shows that people tend to feel uneasy, uncomfortable, uncertain, and lack the confidence to know how to interact with people with intellectual disabilities (Morin et al., 2013). An Australian study found that people in general feel uncomfortable when interacting with individuals with disabilities due to a lack of knowledge or understanding regarding intellectual disabilities (Kleeman & Wilson, 2007).

Anti-Stigma Interventions

Although educational approaches have been shown to increase knowledge and improve attitudes (Donaldson, Helmstetter, Donaldson, & West, 1994; Fisher et al., 1998), contact as a means of achieving social inclusion remains a core component of many anti-stigma interventions. This is based on Contact Theory (Allport, 1954), which suggests that interaction between groups may change attitudes toward a stigmatised out-group and may reduce stereotyping and prejudice. According to this, contact needs to meet four conditions if it is to reduce negative attitudes and prejudice, namely, equal status between the groups, common goals, no competition between groups and authority's sanction of the contact (Pettigrew, 1998). Though in their meta-analysis, Pettigrew Tropp, Wagner, and Christ (2011) conclude that all four measures do not need to be met in order to achieve positive attitude change, the contact literature continues to assess the efficacy of the four contact conditions put forward by Allport (1954). Contact is thought to provide opportunities for people to challenge their negative expectations and stereotypical beliefs regarding an out-group

member. This effectively leads to an improvement in attitudes generalised to other members of the same group (Desforges et al., 1991).

Within the intellectual disabilities field, studies investigating attitudes provide some important information and guidance regarding which factors interventions need to focus on in order to reduce stigma. Research has shown that negative attitudes are stronger towards people who have more severe intellectual disabilities and lower levels of functioning, as well as being linked to misconceptions about the capabilities of people with intellectual disabilities (Antonak & Livneh, 1995; Morin et al., 2013). A study conducted in a school in Canada also found that pupils expressed increased social distance due to perceived dissimilarities in interests or abilities (Brown, Ouellette-Kuntz, Lysaght, & Burge, 2011). Moreover, negative attitudes are arguably maintained by negative stereotypical media coverage designed to elicit pity towards people with intellectual disabilities (Aveyard, 1997; Mencap, 2012; Scior & Werner, 2015; Special Olympics, 2005; Wilkinson & McGill, 2009). In relation to this, research has highlighted that attitudes, which expressed sensibility and tenderness towards people with intellectual disabilities, were found to promote pity rather than the empowerment of people with intellectual disabilities (Morin et al., 2013).

Previous research has thus identified capabilities, skills, capacity and rights of people with intellectual disabilities as a focus for interventions aimed at promoting empowerment and self-determination (Morin et al., 2013). It is thought that viewing people with intellectual disabilities as competent could have a positive impact on attitude change (Roper, 1990). In addition to this, studies have indicated that prior contact is likely to be associated with more positive attitudes and a reduction in anxiety (see Scior & Werner, 2015 for a review). The intellectual disabilities domain

has thus utilised direct contact as a potential avenue for attitude change, regarding it as the most promising route to improving attitudes towards individuals with intellectual disabilities, with the majority of studies reporting positive outcomes (Seewooruttun & Scior, 2014). However, these attempts are either limited in their design or have failed to identify the specific elements of the interventions that contribute to attitude change (Scior & Werner, 2015; Seewooruttun & Scior, 2014). Furthermore, the existing research rarely considers factors such as quality and quantity of contact, which are likely to affect the relationship between contact and stigma (Blundell, Potts, Das, & Scior, 2015). For example, negative contact experiences have been found to lead to increased social distance (Narukawa, Maekawa, & Umetani, 2005), which has implications for contact-based interventions designed to reduce stigma.

Studies have developed the contact approach further by introducing indirect contact interventions such as film, puppetry and theatre to tackle stigma. Within the mental health domain, a 2012 meta-analytical review concluded that direct contact was more effective, albeit both direct and indirect contact significantly diminish stigma (Corrigan, Morris, & Michaels, 2012). Surprisingly however, a more recent systematic review of the literature found that social contact was not essential to reduce mental health stigma (Mehta et al., 2015). This is an important finding given that indirect contact interventions provide an efficient way of reducing stigma to a broad audience via online platforms and television networks in a cost effective way (Corrigan et al., 2012; Reinke, Corrigan, Leonhard, Lundin, & Kubiak, 2004). Encouraged by findings within the mental health field, studies in the intellectual disabilities domain have begun to investigate indirect contact as an alternative component of anti-stigma interventions (Walker & Scior, 2013).

Imagined contact as a promising route for stigma reduction

One form of indirect contact that has emerged as a promising strategy for stigma reduction is imagined contact. Research has found that the act of imagining intergroup contact in the form of a positive interaction can improve negative attitudes towards the out-group (Crisp & Turner, 2012; Stathi & Crisp, 2008; Turner & Crisp, 2010; Turner, Crisp, & Lambert, 2007; West, Holmes, & Hewstone, 2011). Imagined contact works by producing emotional and motivational responses via mental imagery similar to real experiences. Mental imagery is argued to use neurological mechanisms similar to memory, emotion and motor control and thus imagining a positive contact interaction activates experiences of other positive and successful intergroup interactions (Crisp & Turner, 2012).

There is increasing evidence for the effectiveness of imagined contact on four key measures of intergroup bias: attitudes, emotions, behavioural intentions and actual behaviour (Miles & Crisp, 2014). In particular relevance to this study, a recent study by Falvo, Capozza, Hichy, and Di Sipio (2014) tested the effectiveness of imagined contact with a person with an intellectual disability, on non-disabled adults humanity perceptions of people with intellectual disabilities. Imagined contact was found to reduce the 'humanity bias' ascribed to people with intellectual disabilities both at post intervention and one month later. Although this is very promising for the effectiveness of imagined contact in reducing stigma towards intellectual disabilities, its focus was somewhat narrow, only looking at 'humanity bias' rather than attitudes more broadly. Further studies clearly need to be done in order to build on its effectiveness in the area of intellectual disabilities.

Research has also shown improvements in attitudes with different stigmatised groups such as older adults and homosexual men (Turner et al., 2007), immigrants (Vezzali, Capozza, Stathi, & Giovannini 2012), obese people and Muslims (Turner & West, 2011), people with schizophrenia (West et al., 2011) and members of ethnic minority communities (Stathi & Crisp, 2008). Imagined contact has been shown to improve stigma by reducing anxiety and avoidance (Stathi, Tsantila, & Crisp, 2012), and producing stereotype change (Brambilla, Ravenna, & Hewstone, 2012), positive perceptions of the out-group (Crisp & Turner, 2009), and secondary transfer effects (the generalisation of contact effects from an encountered primary out-group to other secondary groups) (Harwood, Paolini, Joyce, Rubin, & Arroyo, 2011). It has also been found to increase intentions to engage in future contact (Hasnu & Crisp, 2010a, 2011; Turner & Crisp, 2012), increased out-group trust (Vezzali et al., 2012), and enhanced self-efficacy relating to future interactions (Stathi, Crisp, & Hogg, 2011).

Although the evidence shows an improvement in attitudes, a change in how people behave towards an out-group member is considered the main aim of imagined contact (Turner & Crisp, 2012; Turner & West, 2011). Self-efficacy is argued to be a key outcome variable in motivating and preparing people for intergroup action, but has been somewhat ignored in previous research on contact (Stathi et al., 2011). Bandura (1986, 2001) defined self-efficacy, as a person's belief that they can achieve desired outcomes when performing a specific behaviour. Enhancing self-efficacy, through imagined contact, is thus suggested to be an important part of the process of orienting people more positively to out-group contact, building confidence and lowering prejudice.

In Stathi et al.'s (2011) study, three experiments with different contact scenarios (individual, individual vs. group, and typical vs. atypical) were conducted to

assess whether imagining intergroup contact with British Muslims increased participants contact self-efficacy. Results show that imagined contact enhances contact self-efficacy and a willingness to engage in future interactions, in particular, within the group-based and typicality-based conditions. The British Muslims in this contact condition were presented as typical out-group members; in other words they were representative of other British Muslims (dressing in a traditional way, avoiding alcohol and reading the Koran). Focus on the group 'British Muslims', rather than the individual out-group member, increased participants' willingness to engage in future interactions with other British Muslims, thus promoting individual to group generalisations, what has been termed the Mutual Intergroup Differentiation Model (Hewstone & Brown, 1986).

Imagined contact research has also consistently identified intergroup anxiety as a key underlying mechanism responsible for facilitating positive outcomes towards an out-group (Husnu & Crisp, 2010a; Turner & Crisp, 2012; Turner et al., 2007). For example, a study by West et al. (2011) concluded that the impact of imagined contact on attitudes towards people with schizophrenia was fully mediated by intergroup anxiety.

While imagined contact seems promising for the intellectual disability field, not least as avoidance of contact with people with intellectual disabilities has been related to discomfort and anxiety, to date only one study has tested imagined contact with someone with intellectual disabilities (Falvo et al., 2014).

Rationale for this study

More effective interventions aimed at reducing stigma towards people with intellectual disabilities are needed. In view of the overwhelming support for contact-based interventions, imagined contact, as a structured and well-researched intervention underpinned by neurological and psychological theory, could access the benefits of contact where direct contact is not feasible. A recent meta-analysis of imagined contact, which found it more effective for children and young people than adults, suggests that imagined contact could be used as a key component of educational strategies (Miles & Crisp, 2014). This meta-analytic finding coupled with evidence that 61% of teenagers are perpetrators of hate crimes towards people with intellectual disabilities (Mencap, 2014), adds further support for the use of imagined contact to reduce stigma associated with intellectual disabilities in children and young people.

In line with the imagined contact hypothesis and previous research (e.g., West et al., 2011), this study set out to examine whether contact self-efficacy, conceptualized as a positive *outcome*, and intergroup anxiety, conceptualized as a *mediator*, are key components in reducing negative attitudes towards people with intellectual disabilities. A measure of social distance was added in order to address the assertion in the imagined contact literature that an imagined contact intervention prepares people for interactions with out-group members. Moreover, this study endeavoured to go beyond earlier research and test whether contact self-efficacy mediates a willingness to interact with an out-group, measured as social distance.

In summary, this study aimed to examine whether imagined contact could reduce stigma among secondary school pupils towards people with intellectual disabilities. It was hypothesised (1) imagined contact would yield positive effects

compared to a control condition (2) these effects would be maintained four months later, albeit differences between both groups having weakened (3) lower anxiety would mediate the reduction in negative attitudes (4) greater self-efficacy would mediate the reduction in social distance.

Method

Sample

The sample consisted of 201 secondary school pupils from an inclusive state funded comprehensive school in South London, UK, where pupils with and without intellectual disabilities are educated together. The sample size for this study met the requirement as calculated through *a priori* power analysis (Faul, Erdfelder, Lang & Buchner, 2007). An effect size of 0.4 was assumed, based on the effect sizes reported in Miles and Crisp's (2014) meta-analysis of imagined contact interventions, which produced a sample size of 199.

The participants were recruited from 12 classes in the school; 42% ($n = 84$) from year 7 (age 11-12), 38% ($n = 76$) from year 8 (12-13) and 20% ($n = 41$) from year 9 (13-14), all within what in the UK is defined as key stage 3. The mean age of pupils was 12.3 years (range 11 to 14 years), with 48.76% female and 51.24% male. The Special Educational needs Co-ordinator (SENCO) was consulted about the questionnaire to ensure that its wording and vocabulary was age appropriate to complete it.

Procedure

Forty-seven schools from eight London boroughs were contacted by email and asked to participate in the study. These were shortlisted from school websites and Ofsted reports after having been assessed as representative of schools across London (in terms of the proportion of pupils eligible for free school meals and speaking

English as an additional language). Letters were sent to each school's head teacher and SENCO detailing the nature and aims of the study, see Appendix C. Of the 47 schools contacted, three replied and only one school participated in the study. One school dropped out due to school commitments and the other simply stopped communication. The researcher liaised with the SENCO throughout.

School context

According to the latest Ofsted report (2012), just over half (53%) of the 505 pupils on the school roll were from ethnic minorities, the largest section being of African and Caribbean heritage. Over a quarter (32%) of the pupils had English as an additional language, and 55.2% of pupils (compared to the national average of 26.7%) were eligible for free school meals. The proportion of pupils eligible for the pupil premium and requiring additional help, supported by school action and school action plus, or with a statement of special educational needs was 9.7%, much higher than the national average of 8.1%. These figures indicate that participants were drawn from a co-educational socially diverse state school representative of schools across London and were a cross-section of society both in terms of gender, socio-economic status, and ethnicity. The school values and encourages pupils to be kind, courteous and responsible citizens and has established a number of school policies relating to bullying, race equality, safeguarding children and special educational needs (SEN). The school is committed to inclusive education; they ensure that pupils with and without SEN engage in shared activities unless an alternative provision has been made for pupils with SEN. At the time of the study, the school had not completed any awareness raising or interventions to promote positive attitudes towards people with (intellectual) disabilities/SEN within the school.

Sampling

The sampling design was intact classes from years 7, 8 and 9 randomly assigned to either the experimental or control condition. This guaranteed an approximate equal number of pupils from each year and age group, and a control group from the same school matched for age, gender and academic level to minimise the impact of confounding variables. Participants were randomly assigned to either the experimental or control condition, by picking intact classrooms out of a hat. The author and a research assistant implemented the research at time 1 and time 2. The researchers visited the different year groups in their regular classroom settings during the course of a school day.

Imagined Contact Task

All participants were asked to spend five minutes on the imagined contact task, and to write down any thoughts or feelings they had on a piece of paper provided. In order to control for the potential confound between imagined contact and positive information, consistent with experiment 4 from West et al.'s (2011) study, participants in both the imagined contact and control conditions engaged in a positive imagined interaction task, the former with a person with intellectual disabilities, the latter with a person who did not have an intellectual disability.

Video

The terminology 'learning disabilities' was used rather than 'intellectual disabilities' as this is the term most commonly used within the UK. Pupils were provided at baseline with a definition of 'learning disabilities', either prior to imagined contact (experimental group) or directly after it (control group), see appendix D. This definition ensured that the diagnostic label 'learning disabilities' was differentiated and not confused with other disabilities. This baseline definition

was provided in a 48 second text only video format with additional voice-over, in order to provide only brief information e.g., what a learning disability is and is not, to control for the potential confound between imagined contact and positive information. The experimental group were asked to watch this video prior to imagined contact to ensure that pupils imagined an interaction with a person with a learning disability, whilst the control condition watched it after imagining contact to ensure they *did not* imagine an interaction with a person with a learning disability but before they completed any of the measures. Furthermore, both conditions were provided with a written definition of learning disabilities again shortly before completing the measures to ensure the validity of their responses.

A script introducing the research and outlining the procedure was written identical for both conditions, except where it differed with regards to the specifics of the imagining task (control vs. experimental) (see Appendix E). This procedure was followed so that the equivalence/reliability of the intervention and control condition across the different classroom settings and between researchers would be maximised.

Imagined contact intervention

Instructions were designed to invoke participants' imagination of a positive and detailed interaction with a person with intellectual disabilities. Participants were instructed as follows: *"The school have invited a group of people with learning disabilities to talk to your class about taking part in the London Paralympics. During break time you get talking to one of the athletes with a learning disability who tells you about their participation and achievements in the London 2012 Paralympics. I would like you to take 5 minutes to imagine having a positive, relaxed conversation with this person. Feel free to talk about anything. Imagine this person's appearance, mannerisms, and specific things that you find admirable"*.

Control condition

Participants in the control condition were instructed as follows: *"The school have invited a group of people to talk to your class about volunteering for the London Olympics. During break time you get talking to one of the volunteers who tells you about their work for the London 2012 Olympics. I would like you to take 5 minutes to imagine having a positive, relaxed conversation with this person. Feel free to talk about anything. Imagine this person's appearance, mannerisms, and specific things that you find admirable".*

In both conditions, participants were then instructed, *"I want you to spend the time thinking, but also please write down, from time to time, the things that you imagine. Please write clearly and feel free to write down whatever springs to mind".* Pupils were then given the 3-part questionnaire, which took approximately 15 minutes to complete at time 1 (post-intervention) and at time 2 (17 weeks follow-up). They were asked to write their initials on the questionnaires in order to match up their responses from time 1 and time 2.

Design

This study used a 2x2 randomised design, the between-groups factor being the experimental manipulation (intervention vs. control) and the within-groups factor time (post-intervention and 17 weeks follow-up). While it would have been desirable to have baseline data, collecting such data would have posed a serious risk of biasing responses due to demand characteristics. Hence similar to all previous imagined contact studies no pre intervention data were collected. While aware of the inherent difficulties associated with matching groups, a non-intervention group was selected for comparison purposes, and both groups were matched by age, academic ability, school context and time spent in school.

The exogenous variable was the intervention received; imagined contact *with* a person with an intellectual disability vs. imagined contact with a person *without* an intellectual disability. The endogenous variables were intergroup attitudes, intergroup anxiety, social distance, and contact self-efficacy.

Measures

As mentioned above, the word 'learning disabilities' was used in all four self-report measures, as this is the most commonly used term in the UK, and thus corresponds with the baseline definition provided in the video, (see Appendix F for all 4 measures used).

Intergroup Attitudes

Intergroup attitudes were assessed using a modified version of the intergroup anxiety scale (Cameron & Rutland 2006), designed to assess prejudice reduction among children. Participants are presented with 10 traits (5 positive and 5 negative). The positive traits are 'nice', 'pretty or handsome', 'good', 'friendly', and 'smart'. The negative traits are 'mean', 'dirty', 'selfish', 'naughty', and 'unfriendly'. In this study participants were presented with two photographs of young people, one group of young people without a learning disability (two young women and two young men, representing the in-group) and a similar photograph of a group of young people with a learning disability (two young women and two young men with Downs Syndrome, representing the out-group). Participants were then asked to think about the people in the photographs and to indicate, on a 4-point scale (1 = none to 4 = all), how many people with or without learning disabilities, like the ones in the corresponding photograph, possess the relevant trait. A general in-group and out-group attitude score was computed by subtracting the mean of the negative adjectives from the mean of the positive adjectives. A total attitude score toward people with intellectual

disabilities was calculated, with higher scores indicating more favourable attitudes (Cronbach's α = >.8). An adequate level of test-retest reliability (.80 across 2 weeks) was found.

Intergroup Anxiety

Intergroup anxiety was assessed using an intergroup anxiety scale developed for a school context (Jasinskaja-Lathi et al., 2011), adapted from Tausch, Hewstone, Kenworthy, Cairns and Christ (2007), which was in turn a modified version of the intergroup anxiety scale by Stephan and Stephan (1985). Participants were asked "If you were the only person interacting with a person with a learning disability (e.g., talking to them or doing homework with them), how would you feel?'' Respondents answered on a 5-point Likert scale (1 = not at all to 5 = very) whether they would feel more or less nervous, anxious, comfortable, awkward, safe, and at ease, (comfortable, safe and at ease were reversed), with higher scores denoting higher anxiety (Cronbach's α = .88). An adequate level of test-retest reliability (.75 across 3 weeks) was found.

Social Distance

Social distance was assessed using a social distance scale originally developed for mental health stigma research by Link et al. (1999), and used to study attitudes to intellectual disability by Scior and Furnham (2011). Participants rated their willingness to engage with a peer with intellectual disability in four social situations of increasing intimacy, on a 5-point scale (1 = strongly disagree to 5 = strongly agree). A total score for the social distance scale was obtained from the mean of the five items, reversed so that higher scores indicate a greater desire for social distance (Cronbach's α = .87). Test–retest reliabilities for the social distance items were kappa > .7 for all items, indicating the items measure relatively stable attitudes.

Contact Self-Efficacy

Stathi et al.'s (2011) social self-efficacy scale was used to measure contact self-efficacy. This scale of social self-efficacy targets self-efficacy in an interactive conversational context and is thus a salient measure for contact self-efficacy. It consists of six items using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Participants were asked to think of interactions they might have with a person with an intellectual disability *in the future* and indicate their agreement with statements such as: "I would feel confident talking to a person with a learning disability", "I would be worried that I might not handle myself well in social gatherings with a person with a learning disability (reversed)", "I would feel I have common topics for conversation with a person with a learning disability". (Cronbach's α = .85). Test–retest reliability was .85 (p < .001), suggesting satisfactory test-retest reliability over a 5-week period.

Ethics

The study was approved by the UCL Research Ethics Committee (Project ID Number: 6536/001, see appendix G). The school was initially provided with a brief information sheet that explained the purpose and content of the study, followed by a face-to-face meeting with the school's SENCO. Agreement to participate in the study at school level was given by the head SENCO and the headteacher. As the project was integrated into the school's Personal, Social, Health and Economic (PSHE) curriculum and delivered in combination with broader educational activities aimed at increasing disability awareness and encouraging positive attitudes towards people with intellectual disability, in line with usual school practices consent was not sought from individual pupils. Instead, parents were informed of the project in a letter distributed by the school and given a two-week window to opt-out of the project, see

Appendix H. Participants were able to discontinue the study at any time. Personal information including initials, age and gender was provided by the school and immediately separated from responses once data analysis was complete, and stored in a separate password protected file to ensure confidentiality. Data were stored according to the Data Protection Act, and individual scores were not shared with the school. Teachers were present during the intervention.

A follow-up session focused on general disability awareness was provided to all participants in the intervention and control conditions. An 11-minute video was presented to all participating pupils, which addressed the impact of stigma and bullying on individuals with intellectual disabilities. Whilst also highlighting the difficulties and hardships, it attempted to challenge many of the negative stereotypes people with intellectual disabilities face, instead presenting them as competent and capable. This video offered the opportunity to raise participants' awareness of intellectual disabilities/SEN and challenge negative attitudes whilst also encouraging the potential role of young people as agents of positive change. It also provided an opportunity to discuss any unresolved issues or questions regarding the study.

Data analysis

The data were analysed using SPSS version 23. Descriptive statistics were calculated. The assumption of normality for all four measures was investigated by visual inspections of histograms, Normal Q-Q plots and Box plots, and by calculating skewness and kurtosis (normal distribution falling between -1.96 and +1.96). A visual inspection and a numerical inspection of skewness and kurtosis showed that total scores for three of the measures were approximately distributed for both groups, with a skewness for intergroup anxiety of -.086 ($SD = 0.245$) and a kurtosis of -0.389 ($SD = 0.485$) for the experimental group and a skewness of .080 ($SD = 0.243$), and a

kurtosis of -.533 (SD = 0.481) for the control group. Social distance scores had a skewness of .278 (SD = 0.245) and a kurtosis of -.837 (SD = 0.485) for the experimental group and a skewness of -.037 (SD = 0.243) and a kurtosis of -1.043 (SD = 0.481) for the control group. Finally, scores for contact self-efficacy had a skewness of -.226 (SD = 0.245) and kurtosis of 900 (SD = 0.485) for the experimental group, and a skewness of -.152 (SD = 0.243) and kurtosis of .418 (SD = 0.481) for the control group. Skewness and kurtosis for intergroup attitudes violated normal distribution and therefore bootstrapping was performed for these scores.

Independent samples t tests were performed to evaluate differences between the experimental and control conditions following an imagined contact intervention at time 1. Effect sizes (Cohen, 1988) were calculated to estimate the magnitude of differences between the two conditions on all four measures at time 1. Furthermore, mediation analyses were conducted for time 1 data for the variables intergroup anxiety and contact self-efficacy by using Hayes' (2013) Process Analysis file for SPSS. Testing for mediation involved testing the data against four conditions; 1) the independent variable (IV) is significantly related to the dependent variable (DV); 2) the IV is significantly related to the mediating variable (MV); 3) the MV is significantly related to the DV; 4) when controlling for the effects of the MV on the DV, the effect of the IV on the DV is no longer significant (Barron & Kenny, 1986). Mediation was also assessed by performing a Sobel test.

The interaction between time and group was conducted by running a linear mixed model analysis due to 41% missing data at time 2. A multilevel model does not require complete data sets, so when data are missing for one time point they do not need imputing nor does the whole case need to be deleted. Parameters were estimated successfully with the available 59% follow-up data. In the context of a

linear mixed model, this study is a two level study with measures at different time points (level 1) nested within participants (level 2). This hierarchical structure suggests that intercepts for all four measures differ across people, in other words, people's responses will vary due to other reasons such as personality, parental, teacher and peer influences and so on. Rather than treat all variables and effects as fixed, this model can distinguish random and fixed effects; fixed effects generalised only to the situations in the experiment, and random effects generalised beyond the treatment conditions in the experiment. For this study, time, grouping and time*grouping were analysed as fixed variables, whilst participants were analysed as a random variable.

This study predicted a significant difference between groups with the intervention group reporting less negative attitudes, intergroup anxiety, social distance, and higher contact self-efficacy than the control group. Figure 2 maps the predicted relationships between the dependent, independent and mediation variables examined for the experimental group at time 1. A group difference was still predicted at follow-up but this was expected to be smaller than immediately post-intervention.

Indirect effect

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                    ┌─────────────────────────┐
                    │ 1) Intergroup Anxiety   │
                    │ 2) Contact Self-efficacy│
                    └─────────────────────────┘
         a                                         b
  ┌──────────────────┐              ┌─────────────────────────┐
  │ Imagined Contact │─────────────▶│ 1) Intergroup Attitudes │
  │                  │              │ 2) Social Distance      │
  └──────────────────┘              └─────────────────────────┘
```
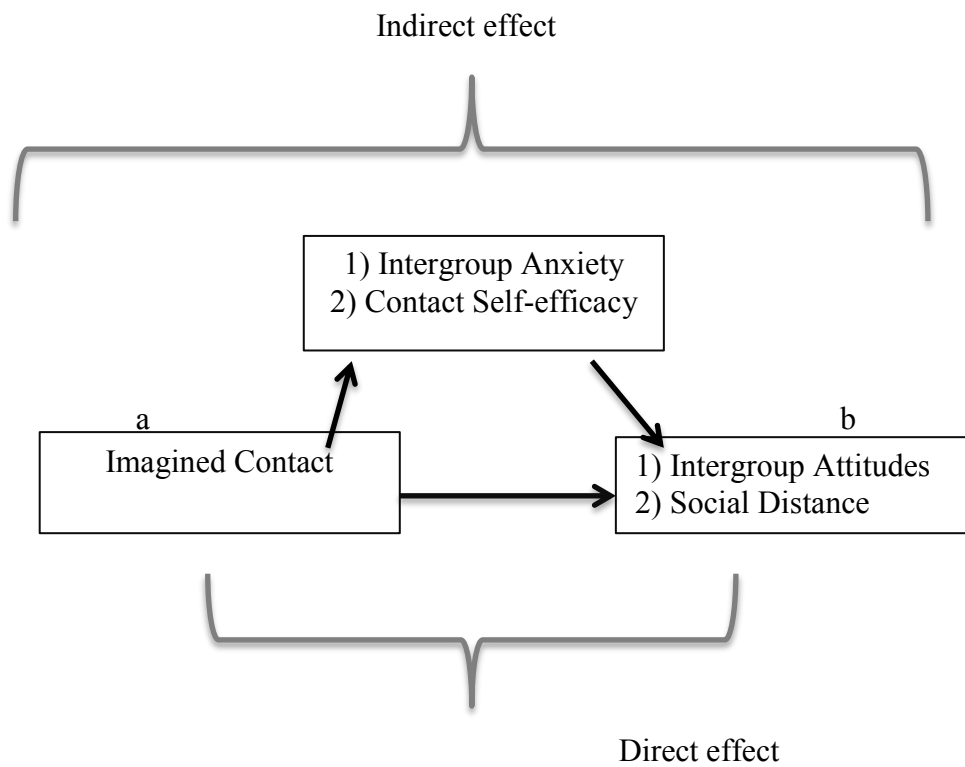
Direct effect

Figure 2. Theoretical Mediation Model of the Relationship between Imagined Contact

(predictor), 1) Intergroup Anxiety (mediator) and Intergroup Attitudes (outcome), and

between 2) Contact Self-efficacy (mediator) and Social Distance (outcome).

Results

The overarching aim of this study was to examine whether imagining intergroup contact results in reduced intergroup anxiety and social distance, alongside increased contact self–efficacy and more positive attitudes towards people with intellectual disabilities amongst secondary school pupils. It aimed to do this by comparing two conditions: an experimental and a control group. Additionally, it aimed to evaluate differential effects of the intervention immediately post intervention and at 17 weeks follow-up, and to assess for mediation between intergroup anxiety and intergroup attitudes, and contact self-efficacy and social distance.

Sample characteristics

A chi-square test of independence was performed to identify potential demographic differences between the two groups. No differences between the two groups were found for gender, $\chi^2(1, 201) = 0.25$, $p = .62$; or school year, $\chi^2(2, 201) = 1.49$, $p = .47$, inferring that the experimental and control conditions were matched for these key variables. There were 51 females and 50 males in the experimental group and 47 females and 53 males in the control condition. Year 7 pupils (aged 11 to 12) made up 41 participants in the experimental group and 43 in the control group; year 8 (aged 12 to 13) 42 in the experimental and 34 in the control groups; year 9 (aged 13 to 14) 18 in the experimental and 23 in the control groups.

Comparisons between groups

In order to assess the effect of an imagined contact intervention an independent samples t-tests compared total scores for all four measures of the two groups, with equal variances first confirmed via Levene's F test for intergroup anxiety, $F(198) = .487$, $p = .48$; social distance, $F(199) = .039$, $p = .84$; and contact self-efficacy, $F(195) = 1.109$, $p = .29$. Equal variances for intergroup attitudes were

not assumed, $F(199) = 4.553$, $p = .03$. See Table 4 for means and standard deviations.

Table 4

Means (Standard Deviations) at time 1 for all Dependent Variables as a function of

Imagined Contact Condition.

Variable	Imagined Contact	Control
Intergroup attitudes	1.17 (1.06)	1.35 (0.92)
Intergroup anxiety	15.95 (5.41)	16.75 (5.89)
Contact self-efficacy	20.19 (4.54)	19.82 (5.07)
Social distance	2.71 (1.16)	2.82 (1.17)

Table 4 shows that the imagined contact group reported less positive intergroup attitudes, less intergroup anxiety and social distance, and more contact self-efficacy than the control group. A one-sample *t* test was calculated for all four measures to assess whether scores were significantly lower or higher than the midpoint, thus indicating out-group prejudice (i.e., negative attitudes, high intergroup anxiety, high social distance and low contact self-efficacy), or out-group favouritism (i.e., positive attitudes, low intergroup anxiety, low social distance and high contact self-efficacy). However, if scores are not significantly different from the midpoint, this suggests that participants are ambivalent toward people with intellectual disabilities (Cameron & Rutland, 2006). For intergroup attitudes, scores were significantly higher than the midpoint for the imagined contact and the control condition, ($t(100) = 11.02$, BCa CI [0.95, 1.39], $p = .001$ and $t(99) = 14.72$, BCa CI [1.15, 1.54], $p = .001$ respectively). For intergroup anxiety, scores were significantly lower than the midpoint for imagined contact and the control condition, ($t(99) = -3.78$, $p < .001$ and $t(99) = -2.11$, $p = .037$ respectively). Scores for both the imagined contact and control condition were significantly higher than the midpoint for contact

self-efficacy, ($t(97) = 4.77$, p < .001 and $t(98) = 3.58$, $p = .001$ respectively). For the imagined contact condition, scores were significantly lower for social distance, $t(100) = -2.41$, $p = .017$, but were not significantly lower for the control condition, $t(99) = -1.503$, $p = .136$. This finding suggests that the pupils in both groups generally held positive attitudes toward people with intellectual disabilities except for the control group with regards to social distance; this group was neither significantly higher nor lower than the midpoint. This suggests that pupils in the control group were ambivalent about the social distance they wanted to maintain from people with intellectual disabilities.

At time 1, differences in inferential scores for the experimental and the control groups were not significant on any of the four measures. Results of the independent-samples t-test did not support the hypotheses for group differences following the effects of an imagined contact intervention. Therefore, contrary to prediction, typically developing pupils who took part in imagining a positive contact experience with a person with an intellectual disability did not report less intergroup anxiety, less social distance, more contact self-efficacy, nor more positive attitudes toward them.

Intergroup Attitudes

Participants in the imagined contact condition did not report significantly higher positive attitudes towards the out-group compared to participants in the control condition $t(199) = -1.32$, BCa CI [-0.48, 0.09], $p = .194$, $d = -0.19$ (small effect size). There was also no significant effect of condition on positive attitudes toward the in-group. The small effect size for intergroup attitudes suggests that a non-significant result could be due to a small sample size.

Intergroup Anxiety

Participants in the imagined contact condition did not report less intergroup anxiety than the control condition, $t(198) = -0.99$ $p = .32$, $d = -0.14$ (no effect).

Social Distance

There were no differences between the imagined contact and control conditions for social distance scores following an imagined contact intervention, $t(199) = -0.64$, $p = .53$, $d = -0.09$ (no effect).

Contact Self-Efficacy

Scores for contact self-efficacy were not significantly higher for the imagined contact group compared to the control condition, $t(195) = 0.53$, $p = .59$, $d = 0.08$ (no effect).

Mediation analysis

At time 1 there was no significant path between imagined contact (X) and attitudes (Y), $\beta = .16$, $p = .25$. Imagined contact did not predict the mediator intergroup anxiety, $\beta = .80$, $p = .31$. The indirect effect of X on Y via intergroup anxiety indicated no mediation. However, the path between intergroup anxiety and attitudes was significant $\beta = .071$, $p = <.001$, and when the mediator was controlled the path between imagined contact and intergroup attitudes while controlling for imagined contact was similarly non-significant, $\beta = .217$, $p = .09$. A Sobel test showed that the indirect effect of imagined contact on intergroup attitudes through intergroup anxiety was non-significant; $Z = -.98$, $p = .33$, $\kappa^2 = -.06$, suggesting that a mediator did not carry the influence of imagined contact to intergroup attitudes.

At time 1 there was no significant path between imagined contact (X) and social distance (Y), $\beta = .88$, $p = .22$. Imagined contact did not predict the proposed mediator contact self-efficacy, $\beta = -.35$, $p = .52$. The indirect effect of X on Y via contact self-efficacy indicates no mediation. However, the path between contact self-

efficacy and social distance while controlling for imagined contact was significant $\beta =$ -.40, $p = <.001$ and when the mediator was controlled the path between imagined contact and social distance was non-significant, $\beta = .74$, $p = .28$. A Sobel test showed that the indirect effect of imagined contact on social distance through contact self-efficacy was non-significant; $Z = .63$, p = .53, $\kappa^2 = .14$ suggesting that a mediator did not carry the influence of imagined contact to social distance.

In summary, mediation was not evident due to violation of step 1 - imagined contact was not significantly related to intergroup attitudes or social distance, step 2 - imagined contact was not significantly related to both mediator variables (Barron & Kenny, 1986), and an insignificant result for the Sobel test. However, the strength of the relationship between mediator and dependent variables was significant at steps 3 and 4, indicating that imagined contact and intergroup anxiety together predicted positive attitudes as did imagined contact and contact self-efficacy which jointly predicted more social distance. Contact self-efficacy was thus found to have a negative effect on social distance in that raised contact self-efficacy was associated with reduced social distance. Intergroup anxiety was found to have a positive effect on intergroup attitudes in that lowered anxiety was associated with a reduction in negative attitudes.

Effects of imagined contact over time

A 2 (group) x 2 (post/follow-up) linear mixed model was computed to evaluate the differential effects of the experimental intervention (contact with an intellectually disabled target) compared to control (contact with a non-intellectually disabled target) over time. There was no significant group x time interaction for intergroup attitudes $F(1, 146) = .20$, $p = .65$, intergroup anxiety $F(1, 129) = 1.25$, $p = .26$, social distance $F(1, 205) = .01$, $p = .93$, or contact self-efficacy $F(1, 131) = .28$, p

= .59. These results indicate that intergroup attitudes and anxiety, social distance and contact self-efficacy towards people with intellectual disabilities for participants in both groups were similar post-intervention and 17 weeks later.

Discussion

This study examined whether the effects of an imagined contact intervention would reduce negative attitudes towards people with intellectual disabilities. Imagining positive contact with a target person with intellectual disabilities was not found to improve intergroup attitudes, lower intergroup anxiety or social distance, nor was it found to enhance contact self-efficacy compared to a positive imagined contact control condition. Intergroup anxiety and contact self-efficacy were not found to mediate the effects of imagined contact on intergroup attitudes and social distance respectively. However, positive scores for steps 3 and 4 of the four conditions necessary for mediation (Barron & Kenny, 1986) indicated a significant relationship between intergroup anxiety/intergroup attitudes and contact self-efficacy/social distance. Perhaps not surprisingly, the group x time interaction was also non-significant at 17 weeks follow-up. With regards to the descriptive statistics, general positive attitudes were found for both the imagined and the control condition at time 1.

The expected strong support for the imagined contact group was not evident in this study's findings. Thus the results do not provide support for the effects of imagined contact in challenging prejudice within the field of intellectual disabilities.

Methodological limitations

This study has a number of important methodological limitations that should be addressed in future research in this area. The limitations, of which many are associated with a quasi-experimental design, are considered within the context of non-

significant results. Although the control group was matched for year group and gender, participants were not systematically matched on other variables that might account for the lack of differences obtained on the four outcome measures. Socio-demographic characteristics such as ethnicity, religion, and prior contact are factors known to predict whether people hold more or less favourable attitudes towards individual disabilities (Scior, 2011).

The method of random selection used in this study was not computerised and thus poses another methodological limitation of this study. Although computerised randomisation was the preferred method discussed with the school, due to logistical complications on the day, this was not possible. Pulling slips of paper at random out of a hat although an attempt to adhere to randomisation is hugely problematic given people do not tend to take slips of paper from the top. Thus, this was unlikely to be random. Although this study attempted to use randomisation to assign participants to one of two groups, it in fact selected and assigned participants from intact groups rather than individual pupils. It is therefore possible that pre-existing variables (e.g., class dynamic, individual teaching style) impacted the results.

This study also failed to use repeated measures and control for baseline attitudes in the analyses. Although a significant methodological limitation, this was deemed necessary given previous imagined contact research found that baseline measures biased responses due to demand characteristics. Hence similar to all previous imagined contact studies, and as per their recommendations, no pre-intervention data was collected. However, this remains a significant limitation given the importance of baseline data in determining whether any effects of the intervention were indeed due to the effects of imagined contact.

Another significant limitation relates to the absence of any measure of adherence to the intervention. This lack of adherence makes it uncertain as to whether or not pupils engaged with the task, and if so, to what extent. This is particularly important given that the task was administered in a busy, easily distracted and at times disruptive classroom environment. Also, this study included one pupil with an intellectual disability in the sample. Although this was a requirement of the school, consistent with their equality policy, this may have influenced pupils responses and provided some significant differences between the attitudes of pupils who did and did not share a classroom with a pupil with an intellectual disability. The potential ethical implications for this pupil were considered with the SENCO; the pupil had a teacher's assistant present during the task and was offered the opportunity to discuss anything after completion of the task.

Although research has noted that prior contact is likely to be associated with more positive attitudes and a reduction in anxiety (Scior, 2011), this study did not control for prior contact with people with intellectual disabilities. Specific to imagined contact, prior contact with an out-group member has been argued to both increase a person's readiness to generate an imagined contact interaction (Crisp & Turner, 2012), and to increase their willingness to engage in future contact (Husnu & Crisp 2010b). Importantly, this suggests that the more prior contact participants have had, the greater the impact of imagery on intentions. Although significant, this lacks a clear operational definition of contact and therefore does not consider how attitudes are dependent on the nature, frequency and closeness of the contact experience. In fact, in a recent study exploring contact as a nuanced variable, frequency closeness and nature of the contact experience was found to be better at explaining social distance than contact as a binary variable (Blundell et al., 2016). Despite posing some

logistical challenges in terms of how to measure prior contact as a nuanced variable, the investigation of prior contact as either a covariate or a condition of treatment should be incorporated into future research.

In relation to measures, the intergroup attitude questionnaire was worded to suggest that people should answer the questions in relation to people 'like' the person presented in the picture, whereas participants may well have responded to questions as per the person in the actual picture. The imagined contact scenario related to a person with a mild intellectual disability. Previous research indicates that severity of intellectual disability is positively correlated with stigma (Ouellette-Kuntz et al., 2010), and that contact may have the greatest influence in reducing stigma directed at people with moderate to severe disabilities, in comparison to education for reducing stigma towards people with mild intellectual disabilities (Antonak, Mulick, Kobe & Fielder, 1995).

Conducting research within a school also brought with it some limitations. Research was conducted in the summer and autumn terms, that is either side of the summer holidays, which made the collection of follow-up data very difficult due to pupils moving classrooms and leaving the school. The initial research was also conducted close to the end of term, which could have meant that pupils were less interested in participating and eager to begin their summer holidays.

What can we take from what was found?

With regards to the descriptive statistics, given that at time 1 both groups reported general positive attitudes towards intellectual disabilities brings into question whether there was in fact any space for change to occur between the groups. It is possible that the schools inclusive education model has had some impact on the pupils general attitudes towards people with intellectual disabilities, thus masking a potential

effect of the imagined contact task. Although insignificant results could be due to a ceiling effect, this is highly unlikely considering the lack of low variance and that scores were not near the top of the range.

This study also found no evidence for the mediation variable intergroup anxiety put forward by Crisp and Turner (2012) as a key underlying mechanism for reducing prejudice. However, it did provide some support for an interaction between intergroup anxiety and intergroup attitudes suggesting that lowering intergroup anxiety may be related to improving intergroup attitudes. This finding was consistent for contact self-efficacy and social distance in that enhancing contact self-efficacy was related to reducing social distance. This reflects findings from the intellectual disability literature, which widely acknowledges that people feel anxious and lack confidence when interacting with people with intellectual disabilities. This discomfort is thought to lead to negative attitudes and increased social distance (Morin et al., 2013). The relationship between these variables is clearly relevant and should be investigated further in future research pertaining to intellectual disability.

Implications for future research

The success of imagined contact across age groups, countries and stigmatised groups (Crisp & Turner, 2012; Miles & Crisp, 2014) raises some important questions regarding the lack of significant findings in the present study. Most imagined contact studies have reported positive results for studies conducted with adult populations, often in laboratory conditions. Whereas some positive effects have been found with children and young people in educational settings (e.g., Cameron & Rutland, 2006; Vezzali, Capozza, Giovannini, & Stathi, 2011), this remains very much an under-researched area. Results of this study perhaps highlight the importance of adapting the task to the age of the child or young person. Although the imagination task used

in this study was different from the relatively brief instructions typically given to adults in the laboratory, these findings suggest that when applying the intervention in schools a more involved and sustained task may be necessary. Also the difficulty in controlling all of the factors operative in a real life setting (for example, class disruption, quality of teaching) may help to explain why significant differences between groups and over time were not found.

During administration of the questionnaires, many participants asked for explanation of the word "at ease" and the statement "I would be worried that I might not handle myself well in social gatherings with a person with a learning disability". Although the SENCO was consulted about the questionnaires prior to administration in order to ensure they were age appropriate, clear and understandable, this highlights the need to also pilot questionnaires with pupils. Participants in the study were asked to answer questionnaires that exposed opinions, attitudes, feelings, thoughts, and behaviour, and were thus liable to respond inaccurately and offer answers that they perceived as socially desirable (Krajewski & Flaherty, 2000). In addition, it was observed that despite the researchers' instructions to answer truthfully, and reassurance that responses were anonymous and would only be seen by the researchers, some participants were observed to compare responses with their peers. Whilst all four questionnaires were self-report measures, future research may wish to include a measure of implicit attitudes in an attempt to overcome some of the issues regarding response bias. Implicit measures are less likely to be influenced by social desirability given that they are unintentionally activated by the actual or symbolic presence of an attitude object and thus measure more subtle indirect and spontaneous attitudes. This is particularly important seeing as prejudices are often maintained through subtle biases otherwise not expressed overtly (Wilson & Scior, 2014).

In the wider literature on contact theory, research has found support for the Mutual Intergroup Differentiation Model (Hewstone & Brown, 1986), which proposes that for successful outcomes to be generalised to the whole group, the interacting out-group member needs to be perceived as typical of their group (Stathi et al., 2011; Wilder, 1984; Wolsko, Park, Judd, & Bachelor, 2003). According to this model, a highly atypical out-group member will likely be subtyped as separate from other out-group members, and have little positive impact on attitudes towards the out-group as a whole (Hewstone, 1994). This is particularly important since contact self-efficacy involves confidence about interacting with out-group members more generally. These findings have important implications for imagined contact research in that who is the target of the imagined contact matters. The imagined contact scenario in this study was not arranged such that the interacting member was considered typical of their group. Choosing a Paralympic athlete who was successful at achieving medals could be interpreted as highly atypical, and thus a considerable limitation of this study. Imagining contact with a Paralympic athlete is likely to have had little positive impact on attitudes towards people with intellectual disabilities as a whole. Although a typical group representative is problematic due to people with intellectual disabilities not consisting of a homogenous group, (differ vastly in terms of the severity of their disability, its causes, and their level of functioning), it is possible that insignificant findings were partly due to a subtyping process and subsequent lack of generalising to people with intellectual disabilities. This limitation should be addressed in future research.

It is also important to consider the ethical implications of the opt-out system for obtaining participatory consent from parents. Although this was a decision taken by the school, in accordance with their school communication policy, the potential

barriers related to this, such as language and limited access to the internet, might have made it difficult for some parents / carers to complete and return the opt-out form.

The findings also have a number of important implications for future school-based integrated schemes and programmes. The non-significant results may be partly due to a mismatch between an imagining task and our current education system in terms of style and method of delivery. Many of the pupils struggled to understand and complete an 'imagination' task often asking what was meant by 'imagine' and whether the researcher could put specific questions on the board. The education system has often been criticised, with some (for example, see Robinson, 2009; 2015a; 2015b) strongly arguing that schools are designed for learning factual knowledge and book learning often relying on teaching to the correct answer. Robinson (2009, 2015a; 2015b) further claims that the current school system is stifling the creativity and imagination of teachers and their pupils. This particular view of the current education system could appear incompatible with an imagined contact intervention, which requires pupils to use their imaginations in a creative free-flowing, non-judgmental capacity, with very limited instruction beyond the task being positive and interactive.

This possible mismatch was reflected in how both researchers had to go off script in order to explain the task. Imagining contact took an average of 15 minutes to complete rather than the allocated 5 minutes consistent with previous imagined contact studies. The researchers had to walk around the room in order to support some pupils individually in the completion of the task. In particular, younger pupils tended to struggle more, to become distracted and in some cases unruly. Although aware of the research, teachers were not sufficiently briefed and included and therefore did not exert their authority during the procedure. It is possible that the

researchers' inability, at times, to manage a disruptive classroom reflected their lack

of experience, authority and influence over the pupils (similar to the experience of

many supply/substitute teachers). Also the word 'imagine' was extended to include

'think' 'daydream' 'picture in your head', and for pupils who struggled with the task,

prompts to aid imagining were given. Some of these prompts were, "imagine what

he/she is wearing", "what would need to happen for this to be a really positive

interaction?", "what quality does your best friend have that this person could have

also?".

Ideally, future research should pilot questionnaires with a group of pupils who

are representative of the target population; teachers should be fully briefed and

included in the delivery of the intervention; prompts should perhaps be included in the

script; and more time should be allowed for the task. Future research should also

consider conducting research with smaller groups where pupils are able to work

collaboratively and share ideas and thoughts about what they would imagine before

individually imagining contact.

Conclusions

This study does not provide support for the positive effects of imagined

contact on changing pupils' attitudes towards people with intellectual disabilities.

However, it has furthered our understanding of how to carry out future imagined

contact interventions with young people in a school context. Future research should

adapt the imagined contact scenario in a variety of ways, such as increasing the length

of the task, and providing prompts, and the use of collaborative group work to

stimulate understanding and interest from pupils should be considered. Furthermore,

research should consider with whom contact is being imagined in terms of whether or

not they represent, in as much as is possible, a "typical" person with an intellectual disability.

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Part 3: Critical Appraisal

Introduction

This critical appraisal will focus on issues relevant to imagined contact and the study of stigma, conducting research in schools with young people, some methodological concerns and future directions. These issues are discussed with the intention to support future research in the area of intellectual disabilities.

Research in schools

There are many challenges to conducting research in schools with young people. Firstly, the fact that 48 schools were contacted with only three responding and one participating, highlights the pressures and demands schools are under to meet government targets and respond to frequent new policies and demands. Perhaps this is an indication that teachers feel unprepared and under-resourced to commit to participation in research on top of their usual responsibilities. Also, liaising with staff unfamiliar with research methodology often involves having to be flexible with regards to research procedures and sampling in order to accommodate school timetables and work pressures. For example, taking dependent measures one day after the imagery task has been shown to reduce demand characteristics (Husnu & Crisp, 2010b), however, this would be difficult to do in practice as schools are busy and preferably want the research to be completed in one day.

Despite the participating school following an inclusive education model it was somewhat surprising that no attempt was made prior to this research to engage pupils in any disability awareness schemes. Although this ensured scientific rigour, in terms of testing the effects of an imagined contact intervention, it highlights an over-reliance on exposure through inclusion alone, which as already noted is not enough to alter attitudes (see Freeman & Alkin, 2000 for a review). School policy regarding disability dictates that pupils with disabilities should not be labelled as 'different' in

order to avoid stigmatising them. However, this need not exclude open discussions between pupils and teachers regarding different types, causes, and characteristics of disabilities; including the many challenges people with disabilities face, alongside the many strengths and abilities that often remain unrecognised by common stereotypes about disability. A lack of knowledge about intellectual disability was reflected in the pupils' many questions about this label and its meaning. Questions such as: "is ADHD an intellectual disability?"; "are they all aggressive?"; "do they all look the same?" and so on. Furthermore, some of the pupils reported that they had never been taught about intellectual disabilities or had the opportunity to talk about it, particularly in relation to some of their peers' challenging behaviours. Although inclusive education is vital to break down barriers, provide social contact and change attitudes, research suggests that perhaps it is not sufficient in itself. Given this, and anecdotal evidence from pupils, schools could arguably benefit from providing disability anti-stigma interventions alongside an inclusive education model; a suggestion in fact advocated by the majority of the articles discussed in the literature review.

The principles governing inclusive education are not that dissimilar to those of many school-based multicultural/anti-racist interventions, which have traditionally provided pupils with information and exposure in the hope that this will reduce prejudice (Appl, 1996). However, it is thought that many of these multicultural curricula interventions have not been effective due to the assumption that pupils are passive recipients of information (Crisp & Turner, 2012; Miles & Crip, 2014). These passive interventions fail to reduce prejudice because they do not actively engage children and young people ultimately leading the anti-stigma information to become ignored, distorted or forgotten (Rothbart & John, 1985). Far from passive, research shows that young people actively construct schemas that are then used to interpret and

make sense of the world around them (Piaget, 1970), suggesting that active strategies are more effective than passive ones (Randi & Corno, 2000).

Despite this, it is still commonly assumed that inclusive education, through providing mere exposure to peers with disabilities, will reduce stigma. Although there is little evidence to support the notion that improved knowledge alone is associated with less stigma (Corrigan & Fong, 2014), more recent research has shown that attitudes can be influenced positively if more information about intellectual disabilities together with more structured, positive contact with people with intellectual disabilities are given (McManus, Feyes, & Saucier, 2011; Yazbeck, McVilly, & Parmenter, 2004). Schools, which actively increase awareness, challenge negative stereotypes and provide structured contact interventions could prove an effective pathway towards the reduction of disability stigma in schools.

The role of Imagined Contact

The imagined contact literature contends that improving intergroup attitudes is only one of many components relevant to improving intergroup relations. Key proponents of imagined contact, such as Crisp and Turner (2012), view explicit and implicit attitudes together with perceptions of confidence and self-efficacy as equally important outcomes, stating that attitude change ought to be directed toward the out-group and toward oneself. A change in attitude towards oneself implies that changing a person's belief about their own capacity to behave appropriately and confidently in unfamiliar and challenging situations will help them to think more positively about the prospect of out-group contact. Together these outcomes are seen to promote tolerance towards the out-group and to orientate people to think positively about out-group contact; arguably this would appear to tap into a cognitive level change rather

than a behavioural one. The imagined contact literature in fact makes a distinction between outcomes that promote tolerance and orientation (cognitive) and those that stimulate intentions to seek out future contact with out-group members (behaviour). In other words, imagined contact should not only improve attitudes towards an out-group but it should also promote greater interest in, and positive inclination toward, engaging in intergroup contact. This is an important point seeing as many contact studies, which focus solely on improving negative attitudes, rely on opportunities for contact for this to prove successful. Promoting a person's desire to actively seek out positive contact might be a way of overcoming this problem. In the context of inclusive education, stimulating intentions to engage in future contact makes more sense in an environment where physical proximity and positive attitudes do not necessarily translate into collaborative working, peer support or friendships (Carter, 2001).

This has far reaching implications regarding the role of imagined contact in the bigger scheme of changing attitudes. Perhaps, as Crisp and Turner (2012) suggest, imagined contact could be seen as part of a larger attempt to reduce conflict and prejudice between groups. Where it is difficult and costly to implement direct intergroup contact, imagined contact could be an important first step in preparing people for actual contact. Importantly, Crisp and Turner (2012) argue that contact based interventions should compliment one another rather than compete with each other. Rather than see inclusive education as a complete solution for disability stigma, it could be seen as part of a wider package with imagined contact as a first step. By using a measure of behavioural tendencies, research has found positive results for the effect of imagined contact on intentions to engage in future contact (Crisp, Husnu, Meleady, Stathi, & Turner, 2010; Husnu & Crisp, 2010a; 2010b;

2011). However, despite these promising results, many issues need considering carefully regarding the relationship between behavioural intentions and actual behaviours, discussed in more detail below.

Imagined contact research

In this study, rather than compare imagined contact with an educational strategy, the decision to only measure the effect of imagined contact on school pupils' attitudes towards people with intellectual disabilities was twofold. Firstly, imagined contact has yielded some promising results in the reduction of prejudice and bias and secondly, many contact studies have failed to identify the key underlying mechanisms responsible for promoting attitude change (Lindsay & Edwards, 2013). Unlike the studies reviewed in the literature review, which only assessed outcomes of participation, this study sought to focus on identifying two process variables theorised as important in both the imagined contact and attitudes to intellectual disability literature, namely intergroup anxiety and contact self-efficacy. Although no significant results were found, there was a significant positive relationship between intergroup anxiety and intergroup attitudes and a negative one between contact self-efficacy and social distance. This suggests that investigating these relationships further could provide some important insights regarding the role of these variables in reducing intellectual disability stigma, and their impact on one another.

There is a general reliance in contact-based research on only measuring immediate effects of interventions. As a result, the durability and stability of participants' attitudes over time remain uncertain (Pettigrew & Tropp, 2006). A recent meta-analysis (Miles & Crisp, 2014) also highlighted the lack of longitudinal studies measuring the effects of imagined contact on intergroup bias. Moreover, it is unclear if relationships developed through long-term contact programmes produce

friendships, which last beyond the conclusion of the intervention (Carter, 2001). This is significant seeing as school-based anti-stigma interventions are implemented with the aim of supporting schools to develop a more inclusive educational model, including supportive peer relationships, a no bullying policy and increased collaboration in the classroom. Indeed, increasing the social integration of pupils with disabilities is a goal consistent with inclusion efforts. Evaluating whether effects are maintained over time would be an important direction for future research.

Adapting imagining contact for young people

Despite the empirical research finding no statistically significant results, hypothesising the different reasons for this has brought about some interesting insights regarding the research process and implications for future research. While there is evidence for the benefits of imagined contact on school pupils' attitudes (Miles & Crisp, 2014), it is still a relatively new area of research. Considering this was the first imagined contact intervention conducted in a school relating to intellectual disabilities suggests that we have a lot to learn with regards to adjusting methodology and the application of an imagery exercise with young people. Despite the insignificant statistical finding, imagined contact has enough significant findings to warrant further research on its use with young people. Imagined contact perhaps needs rethinking when contact involves pupils in a school setting, and when it involves contact with a target person with an intellectual disability.

In a recent meta-analysis, Miles and Crisp (2014) found results for imagined contact to be more powerful for studies with highly elaborate instructions (Husnu & Crisp, 2010a; 2010b; 2011). Although this has not been directly compared to brief one-off adult studies, they advocate future research assessing an extended programme of imagined contact with an adult population to see if results are sustained and

strengthened over time. Extending imagined contact over multiple sessions with highly elaborate instructions would not only accommodate pupils engagement and understanding of the task, but may also have some beneficial long-term effects. The positive findings for elaboration are hopeful for school-based interventions that need to adjust the task to fit, for example, pupils' age and language ability, however, as already noted, the time constraints of many schools may limit this.

Whilst conducting the study, some of the pupils struggled to engage with the imagined contact task. Conducting research with young people in a group setting outside of a controlled laboratory environment can prove difficult with regards to pupils being disruptive. Peer pressure can also prevent some pupils from engaging and participating in a meaningful way. Although the researchers tried to accommodate this by increasing the length of the task and supporting individual pupils, this could have created some important differences across participants with regards to the delivery of the task. Furthermore, the researchers elaborated on the imagining task by asking the pupils to *think* about meeting someone with an intellectual disability (think about what they might be wearing; think about what makes them nice to talk to etc.). It is possible that this is a limitation of the current study as imagining and thinking are thought to elicit different outcomes (Ratcliff et al., 1999). Research has shown that imagining actions elicits more positive behavioral intentions than thinking does (Ratcliff et al., 1999; Ten Eyck, Labansat, Gresky, Dansereau, Lord, 2006). This is because the act of imagining is argued to stimulate conscious processes that imitate those involved in actual intergroup contact. Moreover, details of an imagining task, such as who is being imagined and the language used, could potentially alter its outcome (Crisp & Turner, 2012) thus making these details and any alterations an important consideration in future imagining

interventions. Future research could evaluate the effects of different instructions used in an imagined task with young people, such as think vs. imagine.

Awareness raising video

As a way of attracting schools to participate in this research and in order to "give something back", a 45-minute awareness session was offered after completion of the research. A 12-minute video was compiled which chronicled the challenges faced by people with intellectual disabilities both at school and in later life with regards to employment, and the many strengths, achievements and similarities they share with non-disabled people. The video ended with a caption stating that people with intellectual disabilities want to be treated as equals, with respect, dignity and friendship, and asked: 'what can you and your friends do to help make this happen?' The pupils appeared to engage more with the video than the imagining task, showing enthusiasm, appreciation and curiosity. The video also generated interesting and insightful discussions between pupils and the researchers/teachers. This is perhaps not surprising given the evidential support for film-based anti-stigma interventions (e.g., Corrigan, Larson, Sells, Niessen & Watson, 2007; Reinke, Corrigan, Leonhard, Jundin & Kubank, 2004). However, it also raises some important questions: are pupils being treated as passive recipients of a film-based intervention akin to the multicultural interventions already discussed and, if so, are these interventions likely to be ineffective longitudinally. Arguably, the motivation behind the final question on the video was an attempt to avoid this by stimulating discussion and empowering young people to engage with the issues in a positive and constructive way. Capturing young people's attention and interest is tantamount to positively engaging them and producing successful outcomes. Engaging young people through a film-based

medium could be seen as one of many steps argued by Crisp and Turner (2012) as necessary for reducing stigma in schools.

Methodological issues

This study used social distance as a measure of stigma, which is a self-report measure of behavioural intent to avoid a stigmatised person. Whilst social distance is the most commonly researched component of stigma, the relationship between self-reported behavioural intentions and actual behaviour has not been tested (Jorm & Oh, 2009). The imagined contact literature has argued that changing actual behaviour could be achieved by altering subtle non-verbal behaviours, such as the anxiety most people experience before and during interaction with an out-group member. In other words, following an imagined contact task, participants displaying more positive non-verbal behaviours (reduced anxiety, increased confidence) should be perceived as friendlier by an out-group member, in turn generating a more positive reciprocal interaction, ultimately producing pleasant and smoother future contact with out-group members. Turner and West (2011) found positive results for non-verbal behaviours by assessing the distance participants left between two chairs after imagining contact and before being told they would meet a target out-group member. In relation to pupils with and without intellectual disabilities, this more pleasurable interaction may generate a desire for more encounters within the context of a variety of inclusive settings including classrooms, hallways, assembly time, lunch and break times, all of which provide opportunities for contact. Importantly, this idea starts to include people with intellectual disabilities as active participants of contact, allowing for a relationship that is mutually influential and empowered rather than one-directional.

Despite attempts to predict and measure actual behaviour, ecologically and ethically valid measures of behaviour are difficult to design and implement in stigma

research. As can be seen in the literature review, only two measures of actual behaviour were used in the reviewed studies. This is a major limitation of the evidence base given that the main priority of anti-stigma campaigns is to bring about a reduction of discriminatory behaviours or the increase in positive behaviours towards people who are stigmatised (Corrigan & Shapiro, 2010). Although it is clear that the assessment of behaviour in stigma research is necessary and needs improvement, social distance scales nevertheless have the benefit of allowing comparisons to be made across studies as a result of their common use.

The literature review highlighted some important methodological issues concerning the measurement used to assess attitudes. Namely, a failure to use questionnaires, which correspond to the target disability used during the intergroup contact, and the inability to provide a diagnostic label or to differentiate intellectual disabilities from other disabilities. This not only limits the validity of findings and prevents comparisons between studies to be drawn but these studies subsequently lack insight into the effects of contact on attitudes and behavioural intentions towards people with intellectual disabilities. Unfortunately this also highlights a wider more systemic issue concerning the different diagnostic labels used to refer to intellectual disabilities. In a school context, intellectual disabilities are not differentiated from learning difficulties or neurodevelopmental conditions such as autism or ADHD. This makes research into the field of intellectual disabilities difficult and lacking in consistency given that many of the school-based research studies do not use the diagnostic label of intellectual disabilities and do not always provide a diagnostic definition in their studies.

Although the empirical paper attempts to address this diagnostic inconsistency by providing a definition of intellectual disabilities, the video definition was brief and

factual so as not to influence self-reported attitudes. Although this decreased the likelihood of a type 1 error, it is possible that the brief definition did not provide enough information to generate an imagined interaction with a person with an intellectual disability. Equally, in terms of the measures, pupils could have been answering the questions related to their particular understanding of what an intellectual disability was.

It was also somewhat surprising that only one study in the literature review examined the effects of an indirect contact film-based intervention on pupils' attitudes. Comparison of film and in vivo contact based anti-stigma interventions in the mental health field have found both to have significant effects, albeit direct contact had significantly larger effects (Corrigan, Morris, Michaels, Rafacz, & Rüsch, 2012). These indirect interventions are important to investigate considering they provide more feasible and cost-effective methods to reduce stigma; particularly relevant in a busy over-pressured and under-resourced school context. Future research in schools need to start exploring the effects of an indirect contact anti-stigma intervention as an alternative to in vivo contact, especially where direct contact is not feasible.

Researching stigma: The stigmatised

Stigma research has distinguished between people who experience stigma often resulting in self-stigma, and those who sanction the public stigma of others, both occurring within a context of institutional stigma (Corrigan & Fong, 2013). Although anti-stigma campaigns are critical, it is also important to consider the impact of stigma on the individual. Stigma research too often ignores the lived experiences of the stigmatised focusing rather on theories and science conducted by people who themselves are not victims of stigma (Link & Phelan, 2001; Corrigan & Fong, 2013).

An imagined contact intervention, which attempts to reduce stigma towards intellectual disabilities in an inclusive school context, needs to solicit the perceptions of pupils with intellectual disabilities of their interactions with non-disabled peers. Otherwise there is a danger that researchers become overly focused on the need to improve attitudes and stigma at the expense of actually improving the lives and experiences of those who are stigmatised. Research has shown that pupils with disabilities, who are more isolated and/or rejected than their peers without disabilities, perceive and internalize such feelings of rejection when they occur (Pavri & Luftig, 2001). Given this, it would be interesting to see if children also internalise feelings of acceptance, social competence and likeability following an anti-stigma intervention; and perhaps whether this enhances both the learning and social experiences of pupils with disabilities. Considering people with disabilities are investing their time, hope and efforts by participating in contact interventions in order to improve negative attitudes directed towards them, campaigns need to start including rather than excluding the lived experiences and expertise of people with intellectual disabilities, something that unfortunately current research often fails to do.

Personal reflections on the research project

This study unfortunately did not find significant results for imagined contact, and although personally frustrating, thinking about the possible reasons for this provided a valuable learning opportunity. In fact, it is important to consider and discuss insignificant results as they provide much needed insights regarding how to improve methodology, question and critique theory and suggest areas for future research.

Conducting research within a school had some benefits and drawbacks. The SENCO was extremely organised and efficient and greatly facilitated the smooth

implementation of research in the school. However, having to rely on a school diary and timetable meant that there was an inevitable delay collecting follow-up data. Also, collecting data before the summer holidays increased the chance of drop out due to pupils leaving the school and moving year groups. Furthermore it is important to think about the practicalities involved in conducting research. At the end of the second year of the DClinPsy I left the course to go on maternity leave. The challenges of being a first time mother coupled with the course requirements to be on placement and at university on particular days were important considerations in regards to completing the research.

The research process also reinforced the importance of context, and how research and theory can change according to different contexts and participants. Indeed this does not need to pose a significant problem, but rather studies can make suggestions regarding how to alter and adjust imagined contact to improve its efficacy, which are founded on evidence-based and theory-led research. Thinking about the broader issues relating to stigma and the role of imagined contact not only generated some important insights regarding future research but also reinforced the need to develop effective anti-stigma interventions.

Conclusions

The multi-layered, far-reaching and devastating impact of stigma makes it a complex but extremely important area to research. This study has provided some interesting insight into the relationship between imagined contact and stigma within the context of young people and intellectual disabilities. As the first study to research the effects of imagined contact on pupils' attitudes towards people with intellectual disabilities, it has highlighted many areas for development, some methodological considerations and limitations. Hopefully this will provide future researchers with the

support and inclination necessary to improve on this area of research and to, most

importantly, improve the lives of the stigmatised.

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Appendices

Appendix A: Critical Appraisal Checklist

Critical Appraisal from the health Evidence bulletin (2004)

Question	Yes	Can't tell	No
1. Relevance *Is the study relevant to the needs of the Project?*			
2. Focus *Does the paper address a clearly focused issue?* *Are the aims of the investigation clearly stated?*			
3. Method *Is the choice of study method appropriate? In terms of:* • *Has an acceptable method been chosen (e.g. interventional without randomisation, before-and- after study)?* • *Are the inclusion/exclusion criteria given?* • *Is the choice of control group (if included) adequate?*			
4. Tables/Graphs *Are tables/graphs adequately labelled and understandable?*			
5. Analysis *Are you confident with the authors' choice and use of statistical methods, if employed?*			
6. Findings *What are the results of this piece of research?* *Are the authors' conclusions adequately supported by the information cited?*			
7. Relevance Locally *Can the results be applied to the local situation?* *Consider differences between the local and study populations (e.g. cultural, geographical, ethical) which could affect the relevance of the study.*			
8. Results *Were all important outcomes/results considered?*			

Appendix B: Summary Judgement

Summary judgement as used in the National Institute of Clinical Excellence (2009)

Guidelines

Summary Judgement:	
++	All or most of the criteria have been fulfilled. Where they have not been fulfilled the conclusions are very unlikely to alter.
+	Some of the checklist criteria have been fulfilled, or not adequately described, the conclusions are unlikely to alter.
-	Few or no checklist have been fulfilled and the conclusions are likely or very likely to alter.

Appendix C: Letter Sent to Schools for Participation in UCL Research.

RE: fostering positive attitudes among young people towards people with learning disabilities, and a greater willingness to interact with them.

We are conducting research into young people's attitudes towards those with learning disabilities. Most schools now take strong action against bullying, and the recent Department of Education funded SEN and Disability anti-bullying campaign has developed resources to support schools in tackling bullying of children with disabilities. However, it is clear that more needs to be done, to not only reduce bullying, but also encourage more positive attitudes among young people towards people with learning disabilities, and a greater willingness to interact with them.

We would like to invite your school to participate in an important study to this effect. The project will combine awareness raising of learning disability, with fostering of positive attitudes towards peers and others with learning disabilities using a multi-media and discussion format. It will also examine the usefulness of imagined contact as a means to fostering positive attitudes.

What will taking part involve?

We would like to conduct this study during two 45 minute PHSE (or other more convenient) lessons (spaced 4 to 6 weeks apart) with pupils in years 7 to 9. In the first session pupils will watch a film to learn what a learning disability is, complete a brief exercise in which they imagine interacting with someone with a learning disability, and complete a brief anonymous questionnaire related to the same topic. (In what is called a 'randomised controlled design' some classes will engage in imagined contact with a person with a learning disability, others with a typically developing person to

allow us to carefully test the effects on attitudes.) About 4 to 6 weeks after session 1, we will return to deliver a second session using a multi-media and discussion format, along with completion of the same brief questionnaire. Above all this second session is designed to rule out common misconceptions about learning disability, to tackle prejudices, to raise empathy of common experiences of bullying and rejection among people with learning disabilities, and to empower young people to stand up against such behavior should they witness it.

Are there any risks?

The researcher who will visit the school (Patricia Mazure) has an up-to-date CBS check. There will be no risk of harm to pupils and they will have time to discuss issues raised and ask questions. Letters to parents will be provided by the research team, which will outline the project and give parents the option to withdraw their son/daughter from the project via a tear-off slip. Pupils will be informed that their responses are anonymous. The only personal information taken will be the age, gender and whether they know anyone with a learning disability but this information will be anonymous. Participants will also be told that they are not obliged to complete any questions they feel uncomfortable with. All data will be collected and stored in accordance with the Data Protection Act 1998.

We will carefully establish with each school in advance whether potential participating classes have any pupils with learning disabilities in them, and what the impact of being involved in the project may be on them. Based on this discussion it will be decided whether the class should either not participate or whether the project should be sensitively discussed with the child and their parents before a decision is

reached whether or not to include the class in the project.

We would be very happy to answer any queries you may have, show you the materials to be used, or address any other queries you may have to help you decide whether or not your school should take part in this project.

Please contact us by email or telephone if you would like to discuss this project further or might be interested in your school taking part: patricia.mazure.11@ucl.ac.uk, tel: 07947800329, or k.scior@ucl.ac.uk, tel: 0207-6791897.

Yours sincerely

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Appendix D: 48-Second Video Depicting What a Learning Disability is.

"Around 1.5 million people in the UK have a Learning Disability. A Learning Disability IS NOT a mental health problem. It IS NOT a learning difficulty such as Dyslexia. Some people with learning disabilities have Down Syndrome or Autism. Learning Disabilities affect the brain's ability to receive, process, analyse & store information. This means people may need extra time to learn new things and varying levels of support to go about their daily lives."

Appendix E: Research Procedure Script.

Imagined contact group

1.

"I'm going to show you a video and then guide you through a visualisation task. This will involve me asking you to imagine a situation or interaction in your head. I'm then going to give you a questionnaire to fill out. The questionnaire is divided into four parts."

2.

"I'm now going to show you the video".

3.

"I'm now going to guide you through a visualization task. You can keep your eyes open or closed".

"The school have invited a group of people with learning disabilities to talk to your class about taking part in the London Paralympics. During break time you get talking to one of the athletes with a learning disability who tells you about their participation and achievements in the London 2012 Paralympics. I would like you to take 5 minutes to imagine having a positive, relaxed conversation with this person. Feel free to talk about anything. Imagine this person's appearance, mannerisms, and specific things that you find admirable".

"I want you to spend the time thinking, but also please write down, from time to time, the things that you imagine. Please write clearly and feel free to write down whatever springs to mind".

4.

"Please read and complete the questionnaires on your desks. There are 4 parts. Please read the instructions carefully and answer ALL the questions. Please do not leave any answers blank. Please answer truthfully, not what you think we want to

hear. We are interested in what you think and feel. Your individual answers WILL

NOT be shared with the school. Please begin."

Control condition group

1.

"I'm going to guide you through a visualization task and then show you a short video.

The visualization task will involve me asking you to imagine a situation or interaction

in your head. I'm then going to give you a questionnaire to fill out. The

questionnaire is divided into four parts."

2.

"I'm now going to guide you through a visualization task. You can keep your eyes

open or closed".

"The school have invited a group of people to talk to your class about volunteering for

the London Olympics. During break time you get talking to one of the volunteers

who tells you about their work for the London 2012 Olympics. I would like you to

take 5 minutes to imagine having a positive, relaxed conversation with this person.

Feel free to talk about anything. Imagine this person's appearance, mannerisms, and

specific things that you find admirable".

"I want you to spend the time thinking, but also please write down, from time to time,

the things that you imagine. Please write clearly and feel free to write down whatever

springs to mind".

3.

"I'm now going to show you the video".

4.

"Please read and complete the questionnaires on your desks. There are 4 parts.

Please read the instructions carefully and answer ALL the questions. Do not leave

any answer blank. Please answer truthfully, not what you think we want to hear. We are interested in what you think and feel. Your individual answers WILL NOT be shared with the school. Please begin."

Appendix F: Questionnaire in 4 Parts.

Part 1) Intergroup attitudes

Part 2) Intergroup anxiety

Part 3) Social Distance

Part 4) Contact Self-efficacy.

This questionnaire is in 4 parts. Part 1 asks you to look at some pictures before asking you to answer some questions based on your opinion. Part 2 describes a situation and asks you how you feel about it. Part 3 will ask you to imagine different situations and ask you how you feel about them. Part 4 asks how much you agree or disagree with some statements.

Please read the instructions carefully and answer ALL of the questions. If you are not sure how to answer please give it your best shot. Please answer truthfully and not what you think we want to hear. We are interested in what you think and feel. Your answers WILL NOT be shared with the school.

Part 1.

Picture of young persons with learning disabilities

Picture of young persons without disabilities

Please look at the photographs and think about the young people in the photographs.

Now just look at the photograph of the young people with learning disabilities. How many young people with learning disabilities, like the ones in the picture, do you think are… (Please mark the corresponding number):

Nice

	1	2	3	4	
None	○	○	○	○	All

Good looking

	1	2	3	4	
None	○	○	○	○	All

Kind

	1	2	3	4	
None	○	○	○	○	All

Friendly

	1	2	3	4	
None	○	○	○	○	All

Smart

	1	2	3	4	
None	○	○	○	○	All

Mean

	1	2	3	4	
None	○	○	○	○	All

Dirty

	1	2	3	4	
None	○	○	○	○	All

Selfish

```
        1    2    3    4
None   ○    ○    ○    ○    All
```

Rude

```
        1    2    3    4
None   ○    ○    ○    ○    All
```

Unfriendly

```
        1    2    3    4
None   ○    ○    ○    ○    All
```

Now just look at the photograph of the young people without disabilities. How many young people without learning disabilities, like the ones in the picture, do you think are… (Please mark the corresponding number):

Nice

```
        1    2    3    4
None   ○    ○    ○    ○    All
```

Good looking

```
        1    2    3    4
None   ○    ○    ○    ○    All
```

Kind

```
        1    2    3    4
None   ○    ○    ○    ○    All
```

Friendly

```
        1    2    3    4
None   ○    ○    ○    ○    All
```

Smart

```
        1    2    3    4
None   ○    ○    ○    ○    All
```

Mean

	1	2	3	4	
None	○	○	○	○	All

Dirty

	1	2	3	4	
None	○	○	○	○	All

Selfish

	1	2	3	4	
None	○	○	○	○	All

Rude

	1	2	3	4	
None	○	○	○	○	All

Unfriendly

	1	2	3	4	
None	○	○	○	○	All

Part 2.

If you were spending time with a young person with a learning disability and it was just the two of you, (for example, sitting next to them on the bus or being asked to work on some project together), how would you feel? (Please mark the corresponding number):

Nervous

          1   2   3   4   5

Not at all ○ ○ ○ ○ ○ Very

Worried

          1   2   3   4   5

Not at all ○ ○ ○ ○ ○ Very

Comfortable

          1   2   3   4   5

Not at all ○ ○ ○ ○ ○ Very

Awkward

          1   2   3   4   5

Not at all ○ ○ ○ ○ ○ Very

Safe

          1   2   3   4   5

Not at all ○ ○ ○ ○ ○ Very

At ease

          1   2   3   4   5

Not at all ○ ○ ○ ○ ○ Very

Part 3.

Please imagine how you would feel about the following situations involving someone your own age with a learning disability, like the young people in the first picture:

I would be happy to live next door to them

	1	2	3	4	5	
disagree strongly	○	○	○	○	○	agree strongly

I would be happy to spend break with them

	1	2	3	4	5	
disagree strongly	○	○	○	○	○	agree strongly

I would be happy to work on a school project with them

	1	2	3	4	5	
disagree strongly	○	○	○	○	○	agree strongly

I would be happy to make friends with them

	1	2	3	4	5	
disagree strongly	○	○	○	○	○	agree strongly

I would be happy for them to join my close circle of friends

	1	2	3	4	5	
disagree strongly	○	○	○	○	○	agree strongly

Part 4.

Please think about the following interactions you might have in the future. Please say how much you agree or disagree:

I would feel confident talking to a person with a learning disability

	1	2	3	4	5	
disagree strongly	○	○	○	○	○	agree strongly

I would be worried that I might not handle myself well in social gatherings with a person with a learning disability

	1	2	3	4	5	
disagree strongly	○	○	○	○	○	agree strongly

I would feel I have common topics for conversation with a person with a learning disability

	1	2	3	4	5	
disagree strongly	○	○	○	○	○	agree strongly

It would be difficult for me to make new friends with a person with a learning disability

	1	2	3	4	5	
disagree strongly	○	○	○	○	○	agree strongly

If I see a person with a learning disability I need to talk to, I would go to that person instead of waiting for him or her to come to me

	1	2	3	4	5	
disagree strongly	○	○	○	○	○	agree strongly

It would be difficult for me to ask questions to a person with a learning disability

	1	2	3	4	5	
disagree strongly	○	○	○	○	○	agree strongly

Appendix G: Ethical Approval

Appendix H: Parent Opt-Out Letter.

DATE.

Dear parents/carers,

Your child's school has agreed to participate in a research study run by University

College London (UCL). The opportunity to take part in this project, to be run at

school, will be available to all children years 7, 8 and 9.

Our research studies the effect of a visual imaging task on young people's attitudes.

Similar research has been run with children and adults in other settings and has been

found by all to be entirely acceptable and pleasant. We will also ask your child to

complete some brief questionnaires on their attitudes towards people with disabilities.

Their responses will be entirely anonymous and will not be shared with the school but

used entirely for research purposes.

After completing the initial task during a lesson this term, we will return to hold a

more education focused session with your child's class in the autumn term. During

that session they will be shown a film, promoting acceptance of peers with disabilities

and will have an opportunity to engage in a class-based discussion.

The research has been given ethical approval by the UCL Research Ethics Committee. All data will be collected and stored in accordance with the Data Protection Act 1998.

If you do not wish your daughter/son to take part in this study, please let the school know within one week of this letter.

Yours sincerely,