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Article:
Bond, C, Hebron, J and Oldfield, J (2017) Professional learning among specialist staff in resourced mainstream schools for pupils with ASD and SLI. Educational Psychology in Practice, 33 (4). pp. 341-355. ISSN 0266-7363

https://doi.org/10.1080/02667363.2017.1324406

Professional learning among specialist staff in resourced mainstream schools for pupils with ASD and SLI

Caroline Bond[1], **Judith Hebron**[2], **& Jeremy Oldfield**[3]

[1]Caroline.Bond@manchester.ac.uk Manchester Institute of Education, University of Manchester, Manchester, UK

[2]J.Hebron@leedstrinity.ac.uk Department of Psychology, Leeds Trinity University, Leeds, UK

[3] J.Oldfield@mmu.ac.uk Department of Psychology, Manchester Metropolitan University, Manchester, UK

Corresponding author:

Caroline Bond, Manchester Institute of Education, University of Manchester, Oxford Rd, Manchester, M13 9PL. Email: Caroline.Bond@manchester.ac.uk

Abstract

Supporting pupils with autism spectrum disorder (ASD) in mainstream schools is a challenging task. This paper proposes a professional development framework for EPs to consider when supporting the development of specialist ASD staff. The framework focuses on training content, educator characteristics and organisational elements. Nine mainstream schools developing additional provision to support children with ASD and Specific Language Impairment (SLI) participated in the research. Specialist staff were provided with training and took part in follow up interviews about their developing practice. A pre-post questionnaire of participants (N = 30) attending the specialist training is supplemented with longitudinal interview data from specialist staff (N = 20). A paired sample t-test of questionnaire data showed that staff self-efficacy significantly increased pre to post training with a large effect size(0.61) and thematic analysis of interviews provided evidence of sustained professional development over time underpinned by supportive organisational factors.

Keywords

autism spectrum disorder, professional development, mainstream school, inclusion, school staff

Introduction

In England around 70% of young people with autism spectrum disorder (ASD) currently attend mainstream schools (Department for Education, 2014). While mainstream schools can provide many opportunities for children with ASD, they may also present social and emotional challenges such as the risk of social exclusion or bullying (Humphrey & Symes, 2010). These challenges are likely to be exacerbated if staff do not perceive themselves to have the skills, confidence and knowledge to be able to provide effective support (Segall & Campbell, 2012). Research has found that professionals in health social care and education, including teachers have not had sufficient training in relation to ASD (Dillenberger, Kerr, Jordan, & Keenan, 2016; Shyman, 2012). To address this, national and regional training strategies have been developed, particularly in the UK, US and Australia (Authors, 2016).

In the UK, awareness of a need for ASD training for mainstream staff resulted in the Autism Education Trust's three levels of training which relate to level of staff specialism (Jones, 2015). Educational psychologists (EPs) can play an important role in supporting education professionals to develop their ASD expertise through training based on psychological principles and including an autobiographical perspective (Barrett, 2006; Medhurst & Beresford, 2007).

Local ASD staff development projects aim to respond to specific local needs and contexts (Oxfordshire, 2012), and the current study evaluates one such project. This involved training for specialist teachers and teaching assistants (TAs) working in three mainstream secondary and six mainstream primary schools which were resourced to

support six to ten additional pupils with ASD/specific language impairment (SLI). These nine provisions were set up concurrently as part of one UK local authority's (LA) ASD strategy. This paper focuses on the perceived effectiveness of training delivered to specialist staff and the development of their skills and knowledge during the first year of admitting pupils with ASD to the resource provision schools.

Professional development is a complex process, which Mitchell (2013) defines as 'the process whereby an individual acquires or enhances the skills, knowledge/attitudes for improved practice' (p.390). From the wider literature on school staff learning, Opfer and Pedder (2011) describe professional development as resulting from a complex interaction of a range of factors including training content, individual educator characteristics, and organisational elements.

In relation to ASD content, Simpson, Mundschenk and Heflin (2011) argue that identifying the focus of training for ASD specialist educators can be controversial, as there is debate about which interventions should be the focus, and guidance is limited on how these can be translated into practice. Shyman (2012) argues that ASD training also needs to focus on the practical issues of working with pupils within the broader context of inclusion and partnership with families. The role of the ASD specialist is therefore complex and requires a range of skills including knowledge of interventions, the translation of research into practice, and the ability to work collaboratively with staff, parents and other professionals. Involving parents of children with ASD in training delivery has also been identified as important in increasing participants' understanding (Murray, Ackerman-Spain, Williams, & Ryley, 2011).

Individual educator characteristics, such as previous experience of working with pupils with ASD and attitudes towards inclusion, are also important aspects to consider. Segall and Campbell (2012) surveyed the experience, knowledge and attitudes of 196 mainstream teachers, specialist teachers and school psychologists using the Autism Inclusion Questionnaire (Segall & Campbell, 2007). They found that greater experience of working with pupils and specific ASD training was associated with more positive attitudes towards the inclusion of pupils with ASD and greater reported use of ASD strategies. In a UK-based survey of good practice schools Charman et al. (2011) identified empathy and getting to know the child individually as particularly important from the perspective of school staff, parents and young people with ASD.

Organisational factors can facilitate the application and sustainability of new practices in schools. The term 'communities of practice' emphasises that learning takes place within a group rather than within the individual and describes learning as an active process of collective learning in a specific area (Wenger, 1998). This process may take place at the level of the school or through local or national networks (Cashman et al., 2014). In relation to ASD, Morewood, Humphrey and Symes (2011) describe a 'saturation' model in which ASD awareness becomes embedded as part of the school ethos. Elements of the model include: a key figure who is able to champion ASD across the school, an autism friendly environment, on-going staff training, flexible support, and peer education. Resourced mainstream schools may also have a role in building local communities of practice through activities such as outreach to mainstream schools (Charman et al., 2011).

(insert fig. 1 here)

This paper explores how the three elements summarised in Figure 1 interacted in the professional development of a group of specialist school staff working with pupils with ASD in mainstream schools in the UK with additional resourced provision.

Method

Overview

The research was part of a wider evaluation of the effectiveness of resource provision in primary and secondary schools admitting pupils with ASD and a smaller number of pupils with SLI (Authors, 2013) which received ethical approval from the host institution. The specific aims of the current study were to assess the effectiveness of the enhanced training programme that staff undertook, and to focus on the experience of staff working with the pupils with ASD during the first year of admissions. A pre- and post-training questionnaire was used to evaluate the training programme, and three interviews (at initial pupil admissions, mid-year and end of first year) explored staff perceptions during the first year.

The intervention – resource provision

Schools volunteered to become resource provision schools and the LA funded new buildings, resources and training. The LA also advised schools regarding issues such as staffing ratios, but the schools retained a high degree of autonomy in the development of

their own provisions (e.g. staffing). A tiered training model was developed to provide introductory training for all staff and advanced trainingfor specialist staff. Two days of training were provided for all staff in each school to ensure a shared commitment and level of understanding about ASD/SLI and in addition to this,six days of enhanced training were provided for specialist staff. Regular resource provision network meetings took placeconvened by a LA representative, so that staff working in primary or secondary resource provisions could continue to meet regularly and exchange ideas.

The enhanced training was planned and delivered by a multi-professional group, led by an EP and with input from parents. The aims were to link training to the local context and provide collaborative learning opportunities within and across staff teams. This interactive training took place weekly over six weeks and covered understanding ASD and SLI, communication, social skills, sensory development, understanding and managing behaviour, meeting individual needs, and ASD/SLI friendly schools. Themes addressed in all sessions included the use of evidence-based interventions and practices, such as social stories and visual supports and partnerships and collaboration with families and professionals. The sessions ran separately for staff working with primary and secondary aged pupils with some modification of content appropriate to setting and age range e.g. consideration of different models of support for primary and secondary aged pupils and sessions on therapeutic interventions and sex, relationships and life skills education during the secondary age training.

The training also reflected the variety of anticipated pupil needs. Pupils transferring from a special school which was closing had SLI and/or ASD but came from a settled

educational placement while other pupils might have been out of school for a while. Some pupils had co-occuring difficulties in addition to ASD/SLI and all had to meet the LAs criteria for a resource provision place. These criteria described in detail pupils who would benefit from mainstream inclusion but required a higher level of support than might be available in a regular mainstream placement.

Quantitative phase: assessing the effectiveness of the enhanced training

Design. A repeated measures longitudinal design was utilised, with response variable data collected at pre-training (T1) and six weeks later at post-training (T2). Resource provision teachers completed the same questionnaire at both time periods.

Training evaluation questionnaire. The enhanced training course was evaluated using a training evaluation questionnaire (see Appendix 1) focusing on skills, knowledge and self-efficacy. A review of the literature revealed that there were no suitable existing measures that could be used, and so the evaluation team developed and piloted a questionnaire for use in the project. The final version of the self-efficacy scale consisted of 20 items and was based on the teacher self-efficacy section in the Instruction of Students with Autism Scale (Caywood, unpublished[1]). As the scale was specifically adapted for this evaluation, it was analysed to assess internal consistency. Cronbach's alpha ($\alpha = .955$) revealed a high level of internal consistency and so all items were retained for analysis. Participants were required to select a response from1-5 (not at all to very confident) according to their perceived level of confidence in a number of areas that, in combination, provide an overall

[1] Supplied by the author on request

assessment of self-efficacy in this area. The self-efficacy scale used in this evaluation included domains on learning, joint working with parents, behaviour, social inclusion, communication, motivation, strengths, and learning environments. The questionnaire also asked two supplementary questions, 1) Do you feel you have the skills to teach a child with ASD? and 2) If further training were available how likely would you be to attend?

Participants**.** Although 47 people completed the training, not all groups completed the questionnaires at T1 and T2. In order to minimise missing data only 30 complete matched questionnaires for the self-efficacy scale at T1 and T2 were used, as this was the main focus of the analysis. All 30 cases also provided responses for supplementary question 1, and 29 responses for supplementary question 2.

Qualitative data: teacher perceptions of resource provision

In addition to the Likert scale response items, there were two open-ended questions (What are the ways and areas in which you feel most effective/least effective in working with individuals with ASD/SLI?). These questions were analysed using qualitative content analysis (Hsieh and Shannon, 2005) to identify frequency of themes and changes in response patterns over time.

A series of semi-structured interviews also took place with 20 training participants at three key pointsThese focused on factors which staff perceived as contributing to their ongoing professional development and included the three factors identified by Opfer and Pedder (2011). The interviews were recorded, transcribed, transferred to Nvivo and then grouped using a hybrid thematic analysis (Braun and Clarke, 2006; Fereday and Muir-

Cochrane, 2006). This permitted key themes related to professional development to emerge inductively whilst simultaneously being informed deductively by themes identified from the literature.

Results

Thirty participants completed matched Enhanced Level Training Questionnaires designed to measure perceived self-efficacy. Table 1 shows the demographic characteristics of the sample.

(insert Table 1 here)

As can be seen in Table 1, the majority of participants were female, in their 30s and worked in primary schools, which reflects the higher number of primary school provisions. TAs formed the largest single group of participants, but the 'Other' group is made up of qualified teaching staff in other roles (e.g. in senior management) which makes the total number of qualified teachers similar to the number of TAs. Two thirds of participants had gained most of their experience in mainstream classrooms and the remaining third were from the special school sector.

Knowledge and experience of children ASD/SLI

Question 1 - Do you feel you have the skills to teach a child with ASD/SLI? Thirty participants answered this question at both T1 and T2 with either yes, some, or no. No participants answered no at either time-point, indicating that no one felt completely lacking

in confidence in terms in having the skills to teach children with ASD/SLI. There was a notable change in scores moving from some to yes at T2, demonstrating an increase in confidence in having the necessary skills to teach a child with ASD/SLI following the training. According to McNemar's test this change was significant over the time periods ($p = .002$). Resource provision staff were more likely to answer yes, indicating that they felt had the relevant skills at T2 (87%) compared with T1 (53%). Those answering that they felt they had some of the skills fell from 47% at T1 to 13% at T2.

Question 2 - If further training were available how likely would you be to attend? 29 participants answered this question at both T1 and T2 with either very unlikely, unlikely, likely, or very likely. No participants stated that (s)he would be very unlikely or unlikely to attend further training at either of these time points. An analysis using McNemar Chi Square test assessed whether there was any significant change in the response from likely to very likely that someone was to take part in the further training from T1 to T2. Although there was a small decrease in the percentage of respondents indicating it would be very likely that they would attend further training over the time periods (69%% to 66%), this change was not statistically significant ($p > .05$). These results indicate that participants generally had an ongoing commitment to further training.

Self-efficacy scale

The descriptive statistics for the self-efficacy scale are provided in Table 2.

(insert Table 2 here)

Table 2 gives details of means and standard deviations for the sample as a whole, followed by details for sub groups. Higher levels of self-efficacy were observed in T2 compared with T1, reflecting increases in perceived confidence over time. Larger standard deviations in T1 compared with T2 were also observed reflecting greater variation in scores at this time period.

The self-efficacy scale was analysed using a paired samples t-test to assess whether there was a significant change in perceived self-efficacy from T1 until T2. The results indicated that participants' levels of self-efficacy at T2 ($M = 3.08$, $SD = .43$) were significantly greater than levels at T1 ($M = 2.49$, $SD = .69$), $t(29) = -5.795$, $p < .001$. An effect size was calculated using Cohen's d to assess the magnitude of difference between the two time points. A figure of 0.61 was calculated, equivalent to a large effect (Cohen, 1992). This was calculated using the formula specified by Dunlop, Cortina, Vaslow and Burke (1996) in order to control for repeated measures designs over-inflating the true effect of d. The 95% confidence intervals for the mean difference between the two ratings were -.80 – -.38. These results suggest that participants began training with a reasonable level of confidence in their ability to meet the needs of children with ASD/SLI, but following training there was a marked increase in confidence.

Teachers and TAs

Two paired samples t-tests were conducted to assess whether there were any differences in the magnitude of change in perceived self-efficacy from T1 until T2 for those participants with qualified teacher status (QTS) and those working as TAs.

The results indicated that TAs' levels of self-efficacy at T2 (M = 2.94, SD =.46) were significantly greater than their levels at T1 (M = 2.28, SD = .70), t(14) = -3.730, p =.002. *Cohen's d* equalled 1.08 representing a large effect (Cohen, 1992) The 95% confidence intervals for the mean difference between the two ratings were -1.03 – -0.28.

The levels of self-efficacy of teachers at T2 (M = 3.22, SD =.36) were also significantly greater than levels at T1 (M = 2.69, SD = .64), t(14) = -4.916, p < .001. *Cohen's d* was calcaulted as 0.80 indicating a large effect (Cohen 1992). The 95% confidence intervals for the mean difference between the two ratings were -0.75 – -0.30.

These results suggest there was a significant increase in perceived confidence from both groups of staff although that magnitude of effect in increased self-efficacy scores was greater for TAs than teachers.

Qualitative data

Perceptions of effectiveness. Pre- and post-training, participants were asked open ended questions about the areas of their practice where they felt most/least effective. Areas where participants felt most effective remained relatively stable before and after training with personal characteristics such as empathy and flexibility being mentioned and general skills such as personalisation, differentiation, working individually with children and behaviour management specifically being mentioned at both time points. Post-training participants mentioned personal and generic skills, particularly behaviour management but also more ASD/SLI specific strategies, such as visual timetables and visuals to support spoken language.

Prior to training participants felt least effective, in relation to understanding ASD/SLI, working with mainstream staff, working in mainstream environments, manging pupil behaviour and motivation. Post-training, understanding ASD/SLI and working in mainstream environments were no longer concerns. Working with mainstream staff and motivating children were still concerns, alongside a more specific concern about manging behaviour when strategies were unsuccessful..

Staff interviews. Interviews with key staff illustrate factors which facilitated the professional development of staff working directly with pupils with ASD/SLI who had attended the enhanced training. A broadly deductive approach was adopted and Figure 2 illustrates how the data fit into the themes of training, individual learner characteristics and organisational factors (as described in Figure 1). .

(insert Figure 2 here)

Training. The level 2 training was received very positively, particularly the delivery of the training by parents and local professionals. The session content was rated highly and the training also provided opportunities for informal learning with other staff working in resource provision. A resource provision lead teacher highlighted that, 'part of the Level 2 training for me, was meeting others in the resource provision, meeting other professionals that we could discuss *individual cases with'.*

Staff who attended the training identified that they would need to attend further training to continue to develop their expertise. Resource provision staff also valued informal training opportunities such as visits to other resource provision schools and network meetings. Towards the end of the first year of admitting children, staff were also

beginning to see a role developing in relation to providing professional development for staff in other schools.

Individual learner characteristics. Staff came to the specialist roles with a range of previous experience. There were some concerns about lack of training, particularly among TAs, but staff who were appointed were very committed to working with children with ASD/SLI and to further training. A senior manager described appointing the 'right' people, who would champion the resource provision as key to success, *'there's* no accident that the three of us are people who have to be of a certain calibre *and strength and…ability and kno*wledge level and very, very vocal*'.*

Although some staff may have lacked previous experience and skills initially, interviewees often commented on the increasing range of skills developed through ongoing training, particularly for TAs. The resource provision teachers also developed new skills in deployment of staff, training other teaching staff and representing the resource provision at management team meetings.

Advising staff and working with parents were often areas where TAs in particular developed confidence over time. A TA commented, *'*Well I speak to [the pupil's] mum anyway *every night … you're finding that you're saying a lot of the same things like mum's saying and I think that's quite good for reassurance'.*

TAs also supported mainstream staff with lesson materials and resources and took on an important role in promoting a whole school collaborative approach. This could be a challenge, as one TA described*, 'trying* to get the main staff to accept that *these are their children, they're not just our children, it's a group team. We're getting there'*.

Organisational factors. The LA and schools worked closely to ensure coherence between the aims of the resource provision and the ethos of the individual schools. Participating schools were already recognised for their inclusive ethos and saw the resource provision as an extension of this practice. One TA commented, '*I've got to say it's a school thing,* where the school have embraced*…there's no barrier, it's not a unit…*the boys come for extra work, but they are attached to classes and attached to friends'. In later interviews staff commented on how the shared ethos between resource provision and mainstream staff had continued to develop. A TA observed that a teacher was, '*fantastic' because I could pull away and she'd have a notebook and she'd write … this is what we're doing today, this is the equipment you need or she'd break it down depending on the child*'.

The resource provision increasingly became viewed as integral to the school's provision for all pupils. A resource provision lead teacher described how, *'*Some of the good practice is rippling through now for the other children*'.* Wider benefits included having more staff in class who had been trained in developing children's language skills and children who were not part of the resource provision being able to access some small group interventions as peer supporters.

Resource provision staff had a clear and shared ethos. Inclusion in mainstream was planned on an individual basis with staff working creatively and flexibly to find motivating ways for resource provision pupils to engage in mainstream activities. One TA commented on the importance of mainstream for learning, *'the inclusion bit's been really i*mportant, *especially, because I think the language they hear…the environments, they're buzzing*

*environment, the school environment and that's where skills get transferr*ed, not always *when we're there'.*

A strong sense of team work among the resource provision staff was evident in their interviews, and was underpinned by good communication, clear roles and consistency. The resource provision was also linked into the school as a whole through resource provision lead teachers who mostly had a senior management role.

Discussion

The inclusion of children with ASD in mainstream schools presents many opportunities and challenges. The current paper provides an example of how one LA developed an ASD strategy which supported the professional learning of staff working in mainstream resource provision. This included training, ongoing support and flexibility for schools to develop their own organisational models for delivery.

The quantitative data from the enhanced training evaluation demonstrates how the relatively highly skilled participants who initially had positive perceptions about working with pupils with ASD were able to extend their skills and sense of self-efficacy. The positive training data are similar to findings in other ASD training research (Cullen, Cullen, Lindsay, & Arweck, 2013). Data from the self-efficacy scale also showed a significant increase in perceived self-efficacy for the sample as a whole and particularly among the TAs, who may have had less knowledge or experience of supporting children with ASD in schools at the outset.The question about participant's perception of

effectiveness illustrates how the training was able to integrate elements identified in the literature, such as the application of evidence and practice based strategies (Simpson et al., 2011; Shyman, 2012) and psychological and personal understanding (Barrett, 2006; Medhurst & Beresford, 2007) although the challenge of broader inclusion was identified as an area for continued development by some staff. The interviews extend the survey data further to look at how the participants' skills continued to develop over time and the factors which supported this. At the individual level they highlight the participants' increasing sense of self-efficacy and commitment to working with individual pupils with ASD and their families.

In relation to educator learning, the questionnaire showed that working with parents was an area where staff did not feel entirely confident by the end of the six weeks' training but that this gradually developed over time. Similarly collaborative working between resource provision and mainstream staff also evolved over time. In relation to training content, the interview and questionnaire data support the importance of practical training focusing on work with pupils and the key role of staff in adapting activities and expectations (Shyman, 2012).

The findings also resonate with a number of organisational factors previously identified in the literature which illustrate the wider process of school development which took place. Although the data presented here only focus on the teachers and TAs, the wider data set, which included school managers confirmed the development of broader organisational factors (Authors, 2013). These included factors from the saturation model (Morewood et al., 2011), particularly key people who can champion ASD, senior

leadership representation, ongoing staff training and flexible pupil support. The resource provision offered staff opportunities for active learning and development of skills over time within a community of practice (Wenger, 1998). This included increased collaboration and valuing of expertise between staff and sharing good practice across schools through network meetings. The provision of the training and ongoing network meetings at a local level also supported these emerging communities of practice. The data illustrate how new partnerships developed between staff such as TAs and teachers which in turn facilitated teacher's learning about effective strategies for individual pupils and broader organisational learning which was shared between schools , in a similar way to partnerships described by Cashman et al. (2014).

The current research provides some initial support for the application of Opfer and Peddar's (2011) three elements of teacher professional learning to ASD professional learning. This includes training which supports the development of skills, knowledge and efficacy complemented by environments which enable training to be applied and embedded. This has implications for schools and EPs. Developing staff as ASD practitioners requires management, peer and external support which it will be important for EPs and senior staff to facilitate when initiating changes in school practice. At a school level whole staff training is an important starting point for building a shared commitment to the development of a whole school approach to supporting pupils with ASD, which needs to be promoted through regular formal and informal continuing professional development. Specialist training also needs to address the complexities of developing a whole school approach, collaboration with stakeholders, and implementing interventions.

Organisational factors such as senior leadership representation and collaborative working are also crucial to continued development. At a local level it is important to have systems which support collaboration between practitioners and sharing of emerging good practice within and between schools through events such as joint training and network meetings.

The current research was undertaken at a time when LAs had greater capacity to lead changes. However, in recent years the role of LAs has been diminishing (Smith, 2015) and schools will need to find new models to ensure that a continuum of provision is available to support pupils with ASD. Given the increasing prevalence of ASD (Russell, Rodgers, Ukoumunne, & Ford, 2014) and the likelihood of ASD referrals forming a significant part of EPs' work with schools, extending systemic work with groups of schools might be a useful way to achieve this.

There are nevertheless a number of limitations to the current research. As the study took place in one city in the UK, caution must be exercised when considering the extent to which these findings might generalise to other contexts. For example, the mechanisms which enabled professional learning in this research were complex and may have varied between schools and types of school (e.g. primary and secondary schools). Opfer and Pedder (2011) also point out that a model of professional learning developed in one context may not easily generalise to another. The use of a bespoke questionnaire tool rather than a standardised measure enabled the collection of very specific data related to the project but does in turn reduce comparability with other autism training data such as that provided by the Autism Education Trust (Cullen et al., 2013). The extent to which the

training resulted in improved outcomes for pupils and longer-term outcomes related to the training or other aspects of the training model also warrant further investigation.

To conclude, this study provides initial support for a framework of ASD professional development which is informed by broader theories of professional learning and focuses on the dimensions of educator characteristics, content and organisational elements. This model can support local commissioners, EPs and schools by ensuring that the complexities of supporting pupils with ASD in schools are considered when planning ASD provision and staff development.

Funding

This work was supported by a LA in the NW of England where the research took place.

References

Authors. (2016) Educating Persons with Autistic Spectrum Disorders- A Systematic Literature and Country Review. Trim: National Council for Special Education.

Authors. (2013) The development of resource provision for children with Specific Language Impairment or Autistic Spectrum Disorder in Manchester Local Authority. Manchester: Manchester City Council.

Barrett, M. (2006) Like dynamite going off in my ears: using autobiographical accounts of autism with teaching professionals. Educational Psychology in Practice, 22(2), 95-110.

Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2),77-101.

Cashman, J., Linehan, P., Rosse, M.R., Wenger-Trayner, E. & Wenger-Trayner, B. (2014). The IDEA Partnership: convening learning partnerships in the complex landscape of special education. In Wenger-Trayner, E. & Fenton- O'Creevy, M. (Eds.) Learning in landscapes of Practice: Boundaries, identity and knowledgeability in practice-based learning. New York: Routledge.

Caywood, K.D. (no date) Instruction of Students with Autism Scale. Unpublished.

Charman, T., Pellicano, L., & Peacey, L. V., Peacey, N., Forward, K. & Dockerell, J. (2011). What is Good Practice in Autism Education? London: Autism Education Trust.

Cohen, J. (1992). A power primer. Psychological Bulletin, 112(1), 155-159.

Cullen, M.A., Cullen, S., Lindsay, G. & Arweck, E. (2013) Evaluation of Autism Education Trust Training Hubs Programme, 2011-13: Final Report. Warwick: 1 Centre for Educational Development, Appraisal and Research. Retrieved from: http://www2.warwick.ac.uk/fac/soc/cedar/projects/current/autismeducationtrust/aet_-_final_report1_pdf.pdf

Department for Education. (2014). Special needs in England. January 2014.

Dillenberger, K., Kerr, L., Jordan, J-A. & Keenan, M. (2016) Staff training in autism: the one-eyed wo/man. International Journal of Environmental Research and Public Health, 13, 716.

Dunlap, W. P., Cortina, J. M., Vaslow, J. B., & Burke, M. J. (1996). Meta-analysis of experiments with matched groups or repeated measures designs. Psychological Methods, 1(2), 170-177.

Dybvik, A. C. (2004). Autism and the inclusion mandate. Education Next, 4(1), 42-49.

Fereday, J. & Muir-Cochrane, E. (2006). Demonstrating Rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. International Journal of Qualitative Methods 5(1), 80-92.

Frederickson, N., Jones, A. P., & Lang, J. (2010). Inclusive provision options for pupils on the autistic spectrum. Journal of Research in Special Educational Needs, 10(2), 63–73.

Humphrey, N., & Symes, W. (2010). Responses to bullying and use of social support among pupils with autism spectrum disorders (ASDs) in mainstream schools: a qualitative study. Journal of Research in Special Educational Needs, 10(2), 82–90.

Hsieh, H-F. & and Shannon, S.E. (2005). Three Approaches to Qualitative Content Analysis. Qual Health Res, 15(9), 1277-1288.

Jones, G. (2015) SEN policy research forum. JORSEN, 154-160.

Medhurst, B. & Beresford, J. (2007) 'THOMAS' Training: An early years intervention for children with an autistic spectrum disorder (ASD). Educational Psychology in Practice 23(1), 1-18.

Mitchell, R. (2013) What is professional development, how does it occur in individuals, and how may it be used by educational leaders and mangers for the purpose of school improvement? Professional Development in Education, 39(3), 387-400.

Morewood, G. D., Humphrey, N., & Symes, W. (2011). Mainstreaming autism : making it work. Good Autism Practice, 12(2), 62-68.

Murray, M. M., Ackerman-Spain, K., Williams, E. U., & Ryley, A. T. (2011). Knowledge is Power : Empowering the Autism Community Through Parent – Professional Training, School Community Journal, 21(1), 19–36.

Opfer, V. D., & Pedder, D. (2011). Conceptualizing Teacher Professional Learning. Review of Educational Research, 81(3), 376–407.

Oxfordshire (2012) Autism Training Needs: An Oxfordshire Report. Oxfordshire Autsim Partnership Board/NAS.

Russell, G., Rodgers, L. R., Ukoumunne, O. C., & Ford, T. (2014). Prevalence of Parent-Reported ASD and ADHD in the UK: Findings from the Millennium Cohort Study. Journal of Autism and Developmental Disorders, 44(1), 31-40.

Shyman, E. (2012) Teacher education in autism spectrum disorders: A potential blueprint. Education and Training in Autism and Developmental Disabilities, 47(2), 187–197.

Simpson, R.L., Mundschenk, N.A. & Heflin, J.L. (2011) Issues, Policies, and Recommendations for improving the Education of Learners with Autism Spectrum Disorders. Journal of Disability Policy Studies 22(1), 3-17.

Segall, M. J., & Campbell, J. M. (2007). Autism Inclusion Questionnaire. Unpublished Measure, University of Georgia, Athens, Georgia.

Segall, M. J., & Campbell, J. M. (2012). Factors relating to education professionals' classroom practices for the inclusion of students with autism spectrum disorders. Research in Autism Spectrum Disorders, 6(3), 1156–1167.

Smith, N. (2015) SEN policy research forum. JORSEN, pp. 141-146.

Tobias, A. (2009) Supporting students with autism spectrum disorder (ASD) at secondary school: a parent and student perspective. Educational Psychology in Practice, 25(2), 151-165.

Wenger, E. (1998) Communities of practice: learning, meaning, and identity. Cambridge University Press.

Appendix 1: Enhanced Level Training Questionnaire

Demographics							
Are you . . . (please circle)	Teaching Assistant	SENCO	Base teacher	Other (please specify)			
1. Gender	Male					Female	
2. Age group	21-30		31-40		41-50		50+
Your initials	(these will only be used by the research team to match data)						

Teaching Experience			
3. Number of years' teaching experience			
4. My teaching experience is mainly . . .	Primary		Secondary
5a. In which setting have you mainly taught children with SEND?	Special School	Special unit within mainstream	Mainstream School

Experience and knowledge of SLI/ASD				
6. Do you feel you have the skills to teach a child with a SLI/ASD?	Yes	Some	No	
7. Have you ever taught children with SLI/ASD?	Yes		No	
8. If so, how would you describe the extent of their difficulties in a school environment?	Mild	Moderate	Severe	
9. If further training about SLI/ASD were available, how likely would you be to attend?	Very Likely	Likely	Unlikely	Very unlikely
10. Do you hold any additional qualifications in working with children with ASD or SLI? (please specify)				

Self-Efficacy in working with of children with ASD Scale
(from Caywood, unpublished)

This questionnaire is designed to help us gain a better understanding of the teaching self-efficacy of those who will be working with students with autism. Please circle the number (1= not at all confident, 5= completely confident) that most closely matches your feelings on the subject.

How confident are you that you:	Not at all confident (1)	Not very confident (2)	Neutral (3)	Confident (4)	Very Confident (5)
1.Know the most effective approaches for teaching children with ASD/SLI?					
2. Know about effective behaviour management approaches for children with ASD/SLI?					
3. Know how to communicate effectively with children with ASD/SLI?					
4. Know how to encourage parents of children with ASD/SLI to become involved in school?					
5. Understand the strengths and difficulties children with ASD/SLI may have?					
6. Know how to adapt the learning environment for children with ASD/SLI?					
7. Can provide social support for children with ASD/SLI?(e.g. buddy, circle of friends)					
8. Can adapt the curriculum to support children with ASD/SLI?					
9. Can quickly redirect children with ASD/SLI if they are becoming disruptive?					
10. Can implement strategies to support children with ASD/SLI's understanding of instructions and activities?					
11. Can enhance collaboration between teachers, staff and parents to help children with ASD/SLI do well in school?					
12. Can communicate the needs of children with ASD/SLI to the wider school community e.g. staff, peers, parents?					
13. Can adapt the school environment to the sensory needs of children with ASD/SLI?					
14. Can facilitate cooperative learning between children with					

ASD/SLI and their peers?					
15. Can modify the curriculum to support children with ASD/SLI? (e.g. 1 to 1 or specialized support such as social stories, social skills or language programmes)					
16. Can develop behaviour management programmes for children with ASD/SLI based upon analysis of behaviour?					
17. Can identify potential sources of anxiety for pupils with ASD/SLI and adapt the demands of the situation?					
18. Can motivate students with ASD/SLI who show low interest in their school work?					
19. Can personalize learning to meet the needs of children with ASD/SLI?					
20. Can keep children with ASD/SLI on task during challenging assignments?					

What are the ways and areas in which you feel you are ***most effective*** in working with individuals with ASD/SLI?

What are the ways and areas in which you feel you are ***least effective*** in working with individuals with ASD/SLI?

Table 1: Demographic characteristics of the Enhanced Level Training Questionnaire respondents.

Characteristic	**Category**	**Number of sample**[2]	**Percentage of sample**
Sector	Primary (5-11 years)	17	63%
	Secondary (12-16 years)	10	37%
Gender	Male	4	14%
	Female	25	86%
Age	21-30	10	33%
	31-40	9	30%
	41-50	6	20%
	51-60	5	17%
Experience	< 10 years	20	67%
	11-20	9	30%
	21-30	1	3%
	31-40	0	0%
Role	Teaching assistant	14	50%
	SENCO	4	14%
	RP[3] teacher	7	25%
	Other qualified staff	3	11%
Main experience	Mainstream only	15	60%
	Unit within mainstream	3	12%
	Special	7	28%
Previous experience	Yes	27	90%
of teaching children	No	3	10%

[2] Numbers do not include missing data where respondents failed to provide an answer

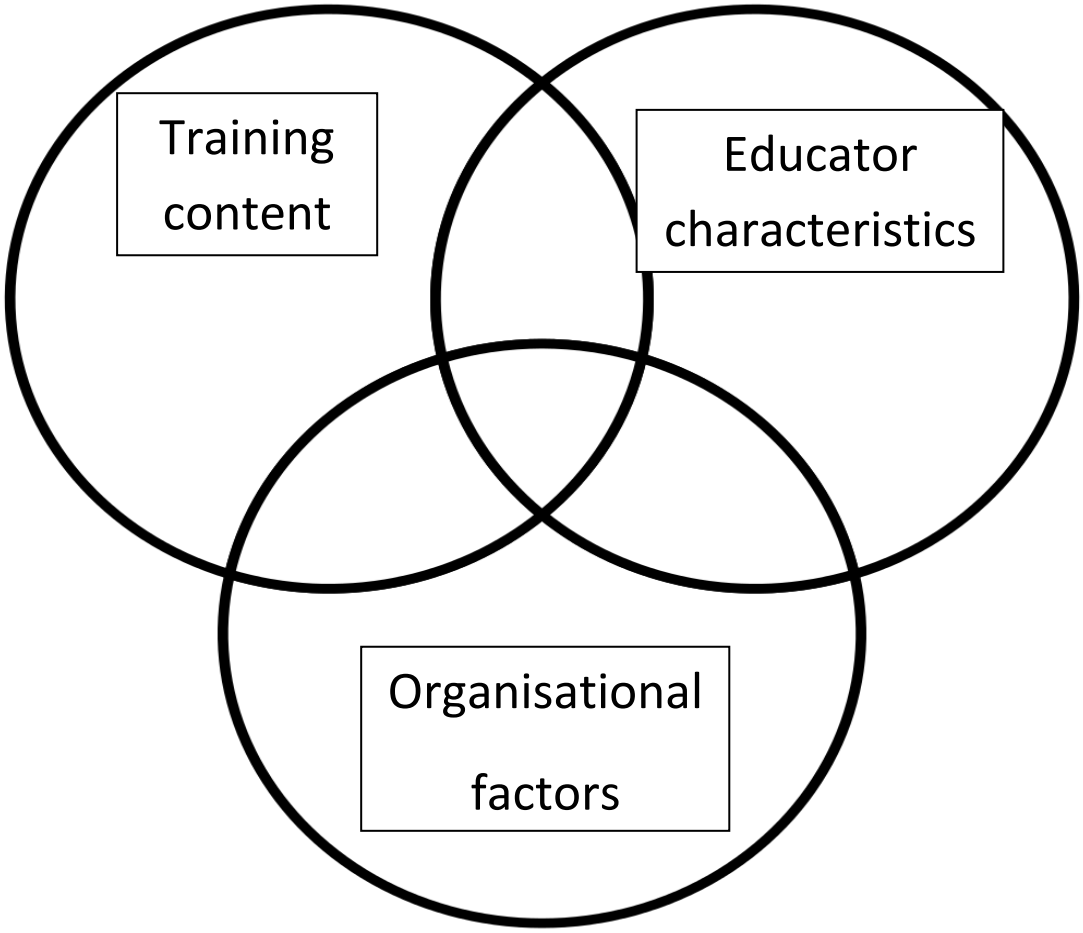
[3] RP=Resource Provision

children with ASD			
Additional ASD/SLI	Yes	8	40%
Qualifications	No	12	60%

Table 2: Means and standard deviations for the Self-Efficacy scale from the Enhanced Level Training Questionnaire split by sample characteristics.

		Time 1		**Time 2**	
	n	M	SD	M	SD
Whole Sample	30	2.49	.69	3.08	.43
Primary Staff	17	2.51	.70	3.17	.31
Secondary Staff	10	2.34	.78	2.91	.56
Teachers	15	2.69	.64	3.22	.36
Teaching assistants	15	2.28	.70	2.94	.46

Figure 1: Professional learning model


Training content
Educator characteristics
Organisational factors

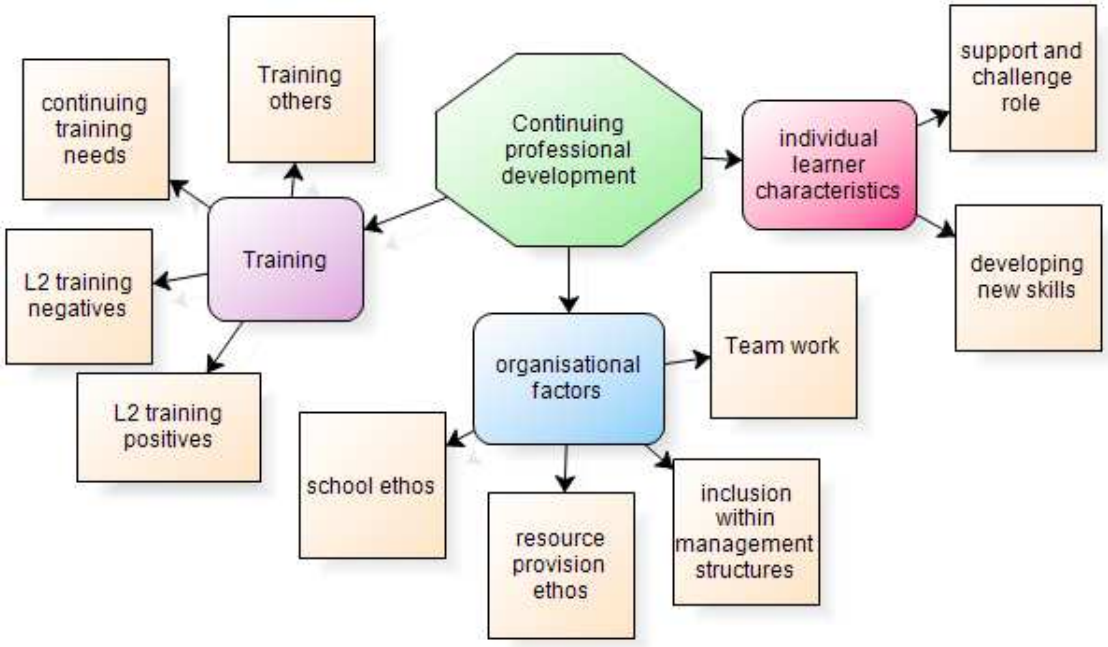


Figure 2: Continuing professional development themes