Moving Towards an Evidence-Based Practice Approach?  
Exploring the Strategies Used as Part of the Support Programmes of Students on the Autism Spectrum in Primary Mainstream, State Funded Schools in Malta 

Claire Sciberras  
University of the West of Scotland  
email: B00260891@studentmail.uws.ac.uk

Abstract: In an era where it has been increasingly recognised that ‘inclusion’ is not simply placing a child in a mainstream setting (Arnot, 2013) but that its aim is to ensure that each learner is an active member in the school life, it is crucial that educators become well-informed about which practices would lead learners to achieve effective outcomes. Such necessity is particularly important in the field of autism as the implementation of methods which are not classified as evidence-based might impede learners to develop their full learning and developmental potential (Simpson, 2005). Due to the limited research in relation to which approaches are being implemented for students on the spectrum within the primary educational context in Malta, this research explored which practices are being included throughout their support programmes. The purpose of gathering such data was to identify the extent of the implementation of evidence-based practices (EBPs) across educational programmes. Through a mixed-methods approach embedded within online questionnaires and semi-structured interviews, and which included the participation of teachers and Learning Support Educators (LSEs), this research revealed that three EBPs tend to dominate the support programmes of learners on the autism spectrum. This research also found that other strategies which are not yet classified as EBPs are also being included across programmes. Hence, a gap in relation to research and practice across the programmes of learners on the spectrum was identified.

Keywords: Autism, Evidence-Based Practice (EBP), Learning Support Educators (LSEs), Malta, Teachers.
Introduction

The principle of ‘Entitlement’ upon which the National Curriculum Framework (NCF) in Malta is constructed, underpins that every child is eligible to a quality educational experience (Ministry of Education and Employment, 2012). The Education Act in Malta states that quality assurance in education can be ensured through the use of adequate measures as a means of refining the quality of teaching and learning (Ministry for Justice, Culture and Local Government, 2012).

Research demonstrates that school settings have the ability to increase the quality of learning and the achievement of learners when all stakeholders promote and apply EBPs (Cook and Odom, 2013). The No Child Left Behind Act (NCLB) reveals that the utilisation of practices which are established from empirical-based research is crucial for learners within school settings (Simpson, 2005). This is because EBPs are defined as approaches which have met the criteria of rigorous peer-reviewed studies and, when implemented with consistency and reliability they manage to yield positive outcomes (Simpson, LaCava, and Graner, 2004). Researchers who evaluate a particular practice tend to methodically assess the applied research linked to the specific strategy that appears in peer-reviewed journal articles before committing to classify its effectiveness (Odom, 2009).

The Literature

Throughout recent research, the inclusion of EBPs has been predominantly encouraged throughout the planning of support programmes of learners on the autism spectrum. Indeed, Odom et al. (2010) suggest that the Individualised Educational Programmes (IEPs) designed for learners on the autism spectrum should be founded upon EBPs. This recommendation emerges as the dependency upon unsupported approaches tends to impede the prospective progress of the learners in question (Simpson, 2005). Hence, like all the other aspects linked to the educational system such as the way of how schools are headed and the manner of how classrooms are managed, intervention science is also contributing to evidence in relation to which strategies are effective for learners on the spectrum (Wong et al. 2015). This establishes that each approach selected to address the challenges associated to the ‘Triad of Impairments’ manifested by learners on the autism spectrum is recommended to be a classified EBP. Such suggestion is deemed necessary as the inclusion of an EBP might possibly be more likely to translate itself into
further refined support as proposed within the Education Act in Malta (Ministry for Justice, Culture and Local Government, 2012).

The Research Question

In light of the recommendations made throughout academic literature vis-à-vis the implementation of EBPs and autism, the purpose of this research was to examine the current practices which are being implemented across the support programmes of learners on the spectrum who attend primary mainstream school settings in Malta. This was done with the intention of addressing the following research question: ‘To what extent are EBPs being included across the programmes of learners on the spectrum who attend primary school setting in Malta?’ In light of this research question, this research aimed to: a) draw up a list of frequently used approaches by teachers and LSEs throughout the support programmes of learners on the autism spectrum so as to identify the extent of use of EBPs; b) investigate the level to which educators have received training in the areas of EBPs and autism and c) explore which sources are used by educators to select the strategies they want to include in the support programmes.

Methodology

Participants and Procedure

To recruit participants to contribute towards this research, an email was sent to the Principal of one of the ten Colleges in Malta. The call for participation was issued through the Office of the Principal to all the primary schools within the sample College. This decision was pursued so as to eliminate any ethical concerns in relation to soliciting or forcing individuals to contribute towards this research. Thus, the participants voluntarily made contact with me when they decided to participate in this research. This procedure enabled the participants enough time and freedom to make their decision vis-à-vis to participating in this study.

Ethical Considerations

During all the phases of this research, the four core ethical principles being non-maleficence, beneficence, autonomy and justice, significant to studies which are undertaken on human subjects, were cautiously followed (UWS, 2009). This was done as ethical lapses in research studies can harm the subjects participating in the study, students and the general public (Resnik, 2011). Moreover, ethical approval was granted from the ethics committee at
the University of the West of Scotland, the Research and Developmental Department in Malta and the Principal of the participating College.

The Demographic Data of the Sample

Data from educators who participated in semi-structured interviews and online questionnaires was collected. The data in relation to the demographic information of the participants is illustrated in Figures 1 and 2.

Figure 1: The demographic information of the participants.

Figure 2: The information related to the teaching experience of the participants.
Gathering Qualitative Data

In this research, 11 individuals expressed their interest to participate as interviewees. Information sheets and consent forms were sent to them via email. The 11 participants consented for the semi-structured interviews to be audio recorded.

Analysis of the Qualitative Data

At the initial stage of the qualitative data analysis, the 11 audio recorded interviews which were carried out in Maltese were transcribed verbatim (Magnusson and Marecek, 2015). After this process, all the transcriptions were translated into English. This enabled analysis and interpretation to be conducted according to the language in which this research had to be presented (Roulston, 2010).

To analyse the qualitative data which was collected throughout the interviews, the process of framework analysis was implemented. This type of analysis was chosen as it enabled data to be selected, charted and categorised according to the key subjects and themes related to the research aims (Breakwell, Smith and Wright, 2012; Srivastava and Thomson, 2009). Thus, throughout the transcript analysis, any observations which reflected thoughts related to key themes were assigned labels. This procedure was followed by the indexing of the similarities and differences related to each assigned label as this allowed sub-categories linked to each key theme to be developed.

Gathering Quantitative Data

Although throughout the questionnaire phase 33 individuals accessed the online questionnaire, four of the respondents only answered the questions related to demographics. Hence, their responses were not considered during the data analysis phase and thus only the responses of the remaining 29 respondents were included in the findings.

The first section of the questionnaire aimed to acquire data about the demographic characteristics of the participants whilst the second section enquired about the use of seven approaches listed in the review compiled by Wong et al. (2015). Section 3 enabled the participants to indicate any other practices which they implement but which were not part of the presented list.
All of the approaches presented to the participants in the questionnaire were focused intervention strategies. The decision to focus on such strategies rather than on CTMs throughout this research was taken as CTMs require high levels of staff involvement and need to be implemented for 40 hours or more each week (Reber, 2012). Hence, since teachers and LSEs who carry out duties in schools in Malta have roughly 30 hours of contact with learners each week, CTMs were not considered as strategies which should be included in the questionnaire. The four EBPs included in the questionnaire were amongst the ones which had the highest single-case studies of the 27 strategies in the list of Wong et al. (2015), and which according to the researchers were the most beneficial to address goals in the following domains: academics, cognition, behaviour, communication, play and socialisation (Wong et al. 2015). The other three approaches listed in the questionnaire were strategies which, despite having insufficient evidence for their effectiveness, research documents that these are still utilised within the support programmes of learners on the spectrum (Wong et al. 2015). Each approach listed in the questionnaire included a brief definition of what it entails.

**Analysing the Quantitative Data of this Research**

Throughout this research, the quantitative data were analysed through univariate descriptive statistics as this enabled the researcher to analyse the value which each variable addressed (Hartas, 2010). Hence, in the case of this research, each section of the survey and the close-ended questions presented in the interviews were analysed independently. This enabled data in relation to the demographic data of the participants and the commonly used approaches by the educators to be gathered accordingly. When the responses of the 40 individuals in relation to the strategies which they commonly use throughout the support programmes of learners on the autism spectrum were analysed, a classification of the most and the least implemented approaches was developed.

**Results and Discussion**

**The Frequently Used Approaches Reported by the Educators**

The results gathered from the questionnaires in this research and from the responses of question six of the interviews aimed to reveal which practices are frequently applied throughout the intervention programmes of learners
on the spectrum. The information related to which strategies are commonly implemented by educators was analysed and evaluated accordingly. The data collected from the questionnaire were compared to the data which indicated the commonly used approaches by the interviewees. This led to the drawing up a list of the reported practices which are implemented throughout the intervention programmes of learners on the spectrum.

The practices indicated to be used by the participants were compared to the list of the 27 practices classified as EBPs compiled by Wong et al. (2015). This was done so as to determine the classification of each intervention in relation to whether it is evidence-based or not (Figure 3). It should be noted that two of the EBPs listed in Figure 3 (Social Narratives and Visual Support) were not part of the list included in the presented questionnaire as they did not have one of the highest number single-case studies as the other four EBPs included in the questionnaire. However, the respondents of the questionnaire reported their use in Section 3 of the questionnaire when they were given the opportunity to indicate any other practices which they implement but which were not part of the presented list.

![Figure 3: The Reported Approaches](image)

When analysing the findings related to the approaches reported to be implemented by the participants in this research, it was established that three out of the nine indicated approaches which dominate the support
programmes of learners on the autism spectrum within mainstream state primary settings in Malta are classified as EBPs in the review of Wong et al. (2015). Indeed, similar to other studies which examined the implementation of EBPs in the area of autism (Hall, 2015; Odom, Cox and Brock, 2013), the most frequently reported approaches in this research were Prompting, Reinforcement and Visual Support.

The frequently-reported implementation of the three aforementioned approaches stems from the fact that the participants in this research perceive these strategies as being fundamental across the programmes of learners on the spectrum. Indeed, participants described how Prompting, Reinforcement and Visual Support can be used to help learners on the autism spectrum to perform specific instructions such as the toileting routine, and to further reinforce appropriate behaviour through reward strategies. Participants in this research also outlined how Prompting, Reinforcement and Visual Support tend to motivate further the children throughout the school experience.

Similar to what was argued in the literature (Hall, 2015), the participants in this research consider Prompting, Reinforcement and Visual Support as strategies which can easily be employed throughout their daily practice. Indeed, stickers and visual prompt cards have been described as strategies which are ‘simple’ but ‘which make a difference to students on the spectrum’ by a number of participants in this study. In light of these findings it can be concluded that when approaches incorporate a less complex procedure in relation to the resources required and the methods which should be followed, educators might be further encouraged to include them throughout the support programmes of learners on the autism spectrum (Hall, 2015). Indeed, even if a procedure is seen as less complex to implement, the data presented in this research have indicated that such strategy still might have a positive impact upon the developmental outcomes of learners on the spectrum.

However, although participants reported a high implementation rate vis-à-vis Visual Support, Prompting and Reinforcement, a diverse scenario was portrayed in relation to the use of the other two EBP’s. Contrastingly to what was noted in the recent study by Hall (2015), this research revealed a low implementation rate by the participants in relation to Social Narratives and Video-Modelling (Figure 3). In light of the reported deficiency vis-à-vis the implementation rate of the latter, this study has established that a gap in
relation to research and practice tends to be present within the intervention programmes of learners on the autism spectrum within state primary school settings in Malta. Such scenario is similar to other studies carried out in other countries vis-à-vis to EBPs and autism (Burns and Yselldyke, 2008; Carter, Strnadová and Stephenson, 2012; Hess et al. 2008; Morrier, Hess and Heflin, 2011). Indeed, the gap identified to be present within the support programmes of learners on the spectrum in Malta was further validated throughout this research as practices which do not hold the classification of EBP in the review compiled by Wong et al. (2015) being Aided-Language Modelling, Music and Removal of Restraints were reported to be used by a number of participants.

While there are indications that educators are attempting to move towards an evidence-based approach in the area of autism, this study noted a gap between research and practice. In light of the findings of this research, the sections that follow will discuss how the research-to-practice gap across the support programmes of learners on the autism spectrum in Malta seems to emerge from the lack of training in relation to EBPs and autism and from the sources which educators tend to consult when selecting the strategies for learners on the spectrum.

Training Indicated by the Participants in the Area of Evidence-Based Practice for Learners on the Autism Spectrum

The findings which addressed the training received by educators indicated that eight of the interviewees received training or were given information in relation to the area of autism. Most participants reported to have received such training throughout their educational studies at a tertiary level, during in-service courses and professional development sessions. Typical responses included:

“I received training on autism during my undergraduate diploma course. I later also attended an in-service professional development course in this area.”

“I have recently completed a 30-week higher certificate course related to the area of Inclusive Education which included study units on the design and implementation of IEPs for learners on the spectrum and also on how to support students.”
However, contrastingly to the aforementioned findings in relation to training received by the participants on autism, this research was able to reveal that only two participants reported to have received training in the area of EBPs in the field of autism.

“I was given some suggestions on which practices might be effective for students during my undergraduate diploma course in Facilitating Inclusive Education.”

Moreover, other participants who indicated not to have received training in the area of EBPs in the field of autism, described how although during courses at a tertiary level and professional development sessions approaches and strategies were suggested, lecturers rarely ever indicated or specified that the particular strategy being presented was an EBP.

“Even though during training they would explain practices for learners with disabilities, they [the lecturers] never specified that these were evidence-based or proven by research. I have also experienced trainers who did not even elaborate on how this particular approach should be implemented in the classroom.”

“In the courses I attended, it was never mentioned that a strategy was an EBP or not when ideas were given to us. So an idea was never said to be supported by research. Ok, .. you will find it when you look for it so you would know that it is evidence-based when you look up that particular approach and if it is specifically identified as evidence-based and how it should be included throughout the support provided. But only because you have carried out your own supplementary research and not because you were taught by lecturers that it actually is evidence-based.”

Although the findings in relation to training in the field of autism in this research revealed that eight out of the eleven participants were given training in the area, only two of them indicated to have been provided training in the area of EBPs for learners on the spectrum throughout their teaching courses. Such finding emerged despite that ten out the eleven interviewees held a tertiary qualification level of education. The revealed situation in light of the findings of this research is similar to other literature in this area which suggests that training at a tertiary level might perhaps be unsatisfactory in relation to preparing educational professionals to use EBPs for learners on the spectrum (Brock et al. 2014). Therefore, it can be concluded that when considering the findings portrayed by the sample in this research, the phenomenon vis-à-vis the research-to-practice gap seems to originate itself even before educators formally become part of the teaching community.
Yet, the issue related to the lack of preparation in the teaching area of EBPs in the field of autism tends not to resolve itself once teachers and LSEs have completed their tertiary educational studies. This is because, this study revealed that this situation also tends to extend itself throughout the professional development training provided to educators who are already carrying out teaching duties in schools. Indeed, some of the participants in this research claimed that when suggestions in light of strategies which could be included throughout the support programmes of learners on the spectrum are presented by training personnel, most often a comprehensive description in relation to whether the recommended strategies are founded upon research for their efficacy is not provided.

Moreover, even when educators in this research reported to have been presented with information on specific interventions, this research revealed that little information was given on how these could be implemented. Consequently, these findings question the effectiveness and the value of the training provided to educators (Houchins, Shippen and Murphy, 2012; Odom, 2009) and raise concern vis-à-vis the misuse of time and money being invested throughout professional development sessions (Morrier, Hess and Heflin, 2011).

When evaluating the aforementioned findings, it can be concluded that similarly to other research in this area (Lang et al. 2010), the accessibility of quality professional training in relation to EBPs in the field of autism in Malta seems limited. Such training is scarce both at a tertiary level of education as well as in continuous professional development training. In light to this conclusion, it can be established that the insufficiency of appropriate training in relation of EBPs in the field of autism is one of the issues which leads educators to engage in practices which do not hold the classification of EBP such as Removal of Restraints throughout the support programmes of learners on the spectrum. Indeed, research demonstrates that when specific training in relation to approaches which can be implemented across the programmes of learners on the autism spectrum is provided to educators, this tends to increase their self-efficacy in relation to these methods (Siu & Ho, 2014).
The Sources Used by Educators to Select Approaches

When participants were enquired about the sources they tend to use to select their approaches, the interviewees mainly indicated internet websites and discussions with colleagues. Two of these participants indicated that they prefer the internet as a source of data over other information sources such as books and ideas gained from the courses they have attended.

“I prefer the internet rather than books. I generally look up the term I want and I select according to the search results.”

“Although the courses I attended have provided tips on approaches, I personally prefer to use the web as the approaches are explained in more detail.”

Moreover, in light of the findings in this research, it was also noted that no participants reported the use of peer-reviewed journals as a source which might lead them to select the strategies they might implement across the support programmes of learners on the spectrum.

“I do not use online journals. To be honest I do not know how to access them.”

“They [journals] are too expensive to purchase so I refer to websites instead.”

The aforementioned findings portray that educators do not resort to online published academic journals to select the strategies which they implement. According to the participants, this results from the fact that they are unfamiliar with or do not have access to academic journals. This situation leads educators to consult informal sources of information to learn about the strategies they want to implement (Burns and Yselldyke, 2008; Cook and Cook, 2011). Given that a number of participants indicated that they do not have access to online journals or do not have the knowledge of how to actually access them might justify why a substantial number of the reported approaches are not classified as EBPs (Figure 3). Indeed, Foster (2014) argues that the lack of reference to journal articles tends to increase the probability of the inclusion of strategies which lack evidence for their effectiveness throughout educational practice. Hence, it can be concluded that the lack of reference which educators make to online published academic journals broadens the research-to-practice gap which has been identified throughout the support programmes of learners on the spectrum. Thus, reference to reliable published research would help educators to identify and select
strategies which are based upon sufficient evidence for their effectiveness especially when developing and implementing the IEP of the student on the autism spectrum. This is crucial as the strategies being employed by the educators need to be sufficiently effective so as to allow learners to achieve relevant goals (Kasari and Smith, 2013).

Recommendations for Action

When summarising the findings of this research, it was found that although there is an indication that educators who support learners on the spectrum in primary state schools are moving towards an evidence-based approach, the participants in this research indicated that they make use of strategies which are not yet classified as EBPs. This research was able to reveal that this situation exists due to the lack of EBP exposure in the training provision and due to the lack of reference made to reliable sources such as peer-reviewed journals.

The Need for Training on Evidence-Based Practices

In light of the findings of this research, it is recommended that adequate training is provided to all the educators who are providing support to learners on the spectrum. Indeed, it would be practical that the concerned authorities responsible for training ensure that teaching preparation includes: i) familiarity with the current existing literature about EBPs such as the list of EBPs for learners on the autism spectrum compiled by Wong et al. (2015); ii) information on how stakeholders can access evidence-based literature; and iii) recommendations on how the strategies should be implemented throughout the support programmes of learners.

Indeed, the provision of knowledge about the appropriate implementation to educators is crucial as EBPs cannot have an effect on learners if they are not adequately applied across intervention programmes (Cook and Odom, 2013). Moreover, it is suggested that training in the area of EBPs and autism is continuous and includes follow-up training sessions and in-class support by mentors so as to provide the necessary guidance to the educators who are implementing the EBPs. This is crucial as one-off training sessions might lead to restricted sustainable transformation throughout practice (Odom et al., 2010) and hence this would lead to educators to completely abandon the implementation of the EBPs in question. Moreover, appropriate training to
educators would positively affect the confidence that educators have in implementing specific approaches (Brock et al., 2014).

Further to the aforementioned suggestions, it is recommended that educators attend seminars and workshops in the field of EBPs and autism. Indeed, this would potentially lead the participants of these sessions to share the knowledge and practice they attained in light of these areas. This would potentially create a college or school based knowledge-sharing culture which is a fundamental characteristic of quality improvement within educational settings (Sallis, 2014).

**Access to Academic Journals**

Provided that this research revealed that educators tend not to refer to peer-reviewed journals to inform themselves about current research and practice due to lack of access, it is recommended that planned budgeting for the purchase of journal subscriptions by the educational authorities for educators providing services in schools in Malta is put in place. Given the substantial expense of such subscriptions, their purchase could be done at a college level rather than at an individual school level. This would give broader access to the educators who are carrying out duties within that particular college to select articles which would allow them to gain knowledge in relation to effective intervention, practices and resources for learners on the spectrum. Although it is recognised that accessing research articles might be interpreted as an increase in the extensive workload which educators are already experiencing (Ballet and Kelchtermans, 2009), such step is highly recommended as would potentially increase the quality support programmes of learners. This is because considering journal articles as a reliable source so as to design classroom practice would potentially generate a teaching community which implements research-based practice not only in the field of autism but also throughout all the domains related to any educational requirements.

**Policy Development and Implementation**

In light of the gap which has been revealed to be present throughout the support programmes of learners on the autism spectrum in Malta between research and practice, it is recommended that policy makers prioritise the use of EBPs within the formulated policies especially throughout the intervention programmes of learners on the autism spectrum. However, it is crucial that
these policies do not only outline the need of the implementation of EBPs. Nevertheless, such documents should also provide comprehensive information about the elements which affect the sustained implementation of EBPs (McIntosh, Horner and Sugai, 2009). Such information within educational policies would potentially lead school management teams to develop school-level action plans which are based upon the implementation of EBPs. This is crucial as when EBPs are implemented and most of all sustained throughout educational practice, the whole school community including educators and students will benefit (Morris and Mather, 2008).

**Recommendations for Future Research**

Given that this study was a small scale research, its findings and conclusions were based on the responses collected by educators who carry out teaching duties in six primary state schools of one College in Malta. Future research could broaden the sample so as to include the primary state schools of the remaining nine colleges. This would enable the presentation of a broader picture in relation to the use of EBPs in the area of autism across primary state schools in Malta.

Moreover, upcoming research could gather data about the contents of the coursework provided to individuals who are aspiring to pursue a teaching career in Malta. Such research could analyse which practices are being suggested to participants and to what extent are EBPs in the area of autism being prioritised throughout training. This would help educational authorities who are responsible for the coordination of professional development teacher programmes to amend the contents of training modules so as to ensure that information about EBPs for learners on the spectrum is given sufficient significance within the training provided.

**The Limitations of this Study**

Due to time limits and resource constraints, this study has focused on collecting data from teachers and LSEs in one college which hosts six primary schools in the Northern part of Malta. Hence, generalisations and assumptions to other educational settings which form part of the remaining nine colleges in Malta cannot be made and thus further research throughout the primary schools of these nine colleges needs to be carried out. However, the findings from this research could still be used as guidance for improved practice or future restructuring by other educational settings in particular.
since past research has not explored the extent of use of EBPs for learners on the autism spectrum in Malta.

While this research has compared the classification of the approaches reported by the participants to the latest revised list of EBPs in the field of autism compiled by Wong et al. (2015), any published list is of EBPs is always provisional as the decisions regarding the list are always taken in relation to evidence that is valued, and upon evidence which is available at the time of the evaluation (Morris and Mather, 2008). Thus, educators should distinguish between interventions which might be harmful to learners such as holding therapy (Simpson, 2005) and those which although do not have the classification of EBP are still viewed as being beneficial to learners on the spectrum. Indeed, several studies have highlighted the benefits of approaches such as Music therapy throughout the intervention programmes of learners on the autism spectrum (Gold, 2011) even though this strategy has not yet been classified as an EBP. Hence, it would be prudent if educators evaluated how the approaches they are implementing are influencing the learner. Such evaluation would enable them to decide if the approach being applied should be further reinforced or contrastingly eliminated completely from the support programme of the learner in question.

References


