

**Research informed teaching reaching beyond
initial teacher education, examples of success
in the North West of England: Empowering
teachers to reach for success**

Teacher Education
Advancement Network Journal
Copyright © 2019
University of Cumbria
Vol 11(3) pages 106-116

Diane Lloyd, Paula Jones, Andrea Pratt and Debbie Duncalf
Liverpool John Moores University

Abstract

This paper considers how empowering teachers to reach for success in partnership with a Higher Education Institution (HEI) in the North West of England can affect learning in the classroom. Evidence based research is the focus of this study which focuses on working with teachers engaging in their own research beyond initial teacher education. The paper presents the views of senior managers and teacher researchers engaged in a one year professional learning programme to consider impact in the classroom. Partnerships with mentors and partnership schools enable us to consider the key implications for the professional development of teachers and call upon the evidence through both reflections and evidence of classroom practice.

The aim of this paper is to demonstrate how collaboration has encouraged professional practice to support classroom based teaching and teacher efficacy and effective practice. Three areas are considered, firstly the nature and views of educational research, secondly the challenges of undertaking research and finally the impact of practitioner research.

Key words

Professional practice; impact; reflection; transformation; professional development.

Introduction

To consider how teachers reach for success and the impact this can have in the classroom, it requires firstly taking into account that professional development is at the heart of improving classroom performance. This can result in strengthening the quality of teaching and learning in the classroom and commends teachers as adult learners (Pedder & Opfer 2011). Nationally, professional development remains a priority within education, as evidenced by the Department for Education Standards for teachers' professional development (DfE 2016b). These standards aim to provide evidence on how to achieve effective, purposeful professional development and raise expectations between teachers and schools (DfE 2016c). A research-engaged school uses that engagement to sharpen its focus on school improvement and improve teaching and learning (GTC 2006). Enhancing teaching and learning so that classroom practice improves is therefore a valid reason for choosing this model of professional development as the focus for our study. The National College for Teaching and Leadership Research Case Study (NCTL 2015) paper suggests that professional learning should have a clear and specific focus and be relevant to the participant's own professional practice (Nelson et al 2015).

Literature review

Professional learning

Professional learning could be defined as:

A school that is research-engaged uses that engagement to sharpen its focus on school improvement and improve teaching and learning

(GTC 2006:2).

Citation

Lloyd, D., Jones, P., Pratt, A. and Duncalf, D. 'Research informed teaching reaching beyond initial teacher education, examples of success in the North West of England: empowering teachers to reach for success', *TEAN journal*, 11(3), pp. 106-116.

Within this piece of research we will consider if participants have improved teaching and learning through engaging with the theory and practice and working in partnership with an HEI (Higher Education Institution). The Standards for Professional Development (DfE 2016b) have established a renewed focus on improving and evaluating pupil outcomes and a determination for strong evidence and 'expertise'. These standards also clearly identify the vital role of collaboration and proficiency, and the need for this to be sustained over time. This paper exemplifies three schools and their approaches to working in partnership with the HEI staff in school settings to support the research being undertaken. The schools were part of the launch of the approach to professional development.

While maintaining a focus on the most recent research (Nelson et al 2015) there still is evidence of the necessity to move beyond continuing professional development and authenticity in research, to create more meaningful connections to wider research and evidence based practice in the classroom. Timperley (2011) considers that professional learning requires serious engagement in teachers' learning at the centre of the process, whereas professional development is experienced more as a participatory activity and therefore is regarded as more superficial. In this piece of research, the teachers are at the centre of practitioner research yet the evidence of impact is an area of research yet to be explored in depth and is identified through the literature as an emerging research focus. In accordance with Timperley (2011), learning in a professional context should be determined by both teacher and student needs. Donaldson (2010) further ensures we keep in mind the robust values and responsibility to become expert practitioners. Through the evidence, it is clear that most development programmes share the common goal to change practices as well as beliefs so that there are advances in the quality of students' learning opportunities (Pedder & Opfer 2011; Guskey 2002).

Background

There are differing views in the literature on what makes professional development effective. However there is some agreement in that teachers' professional development and learning this can play a vital role in enhancing the quality of classroom teaching in schools. An interesting perspective can be first explored in the Carter Review (2015) suggesting that the Teachers' standards (DfE 2012) should be amended to be more explicit about the importance of teachers taking a more evidence based approach to practice. BERA (British Educational Research Association) (2014) highlight the importance of a research-rich culture that is connected and collaborative. A precursor to the Carter review from the perspective of Goldacre (2013) presents a clear rationale for the education community to consider:

I think there is a huge prize waiting to be claimed by teachers. By collecting better evidence about what works best, and establishing a culture where this evidence is used as a matter of routine, we can improve outcomes for children and increase professional independence
(Goldacre (2013:7).

BERA (2014:18) offer a further and important perspective that presents again a rallying approach to collaboration and allegiance to the process of professional learning and how it can be a more intrinsic part of practice and a choice moving away from extrinsic research that sits outside of practitioners' teaching. This in turn would lead, as BERA suggest, to active engagement and undertaking personal enquiry. Education Excellence Everywhere (DfEa 2016) represents a further voice and confirmation for need for an evidence based profession:

We will support the development of a high status, world-leading teaching profession by increasing teachers' access to and use of high quality evidence.
(DFE (2016a:24).

The current context of professional development

Literature now suggests that there has been an observable change in the nature of professional development that has seen the move away from workshops and short courses to workplace professional development (Campbell *et al* 2004). This change has been accompanied by the realisation that research and evidence used to inform practice can promote school improvement (GTC 2006). One of the criticisms of off-site workshops or courses is that teachers' starting points are not considered and often the information or skills not integrated into practice can result in a focus on short-term improvement (Hargreaves 2000). However, Timperley *et al* (2007) proposed that one-off development opportunities may be sufficient if the learning involves an increased awareness of new ideas therefore does not disregard the principle entirely. This move in the research highlights the importance of professional development as a process and not an event, and that teacher change is complex (Guskey 2002). Empirical research shows that teacher learning happens when strong learning environments are established, allowing for experimental learning that involve teachers reflecting on their experiences and meaning (Geijsel, Meijers and Wardekker 2007). Norton (2009) provides a clear justification for the professional development of teachers and indicates this can be signposted through Mezirow's transformative learning theory. This theory is defined as the process of 'effecting change in a frame of reference based on our experiences' and self-evaluation (Mezirow 1997:5). Assertions are made on the criticality and challenge of one's own practice however concerns are also raised that this may be insufficient due to the responsibility resting with the teacher through 'evaluation' (Norton 2009:28). Kempton (2013) further highlights the challenges of achieving real impact.

Sharing best practice and research between researchers and schools is a challenge. Continual, rather than occasional or one-off exposure to research has the most impact
(Kempton 2013:26).

Hattie (2015) drawing conclusions on his seminal work, explores and analyses impact in the classroom and 'visible learning' to consider what makes the difference for teachers, students and classrooms:

... it really comes down to not who teachers are, not what they do, but how they think. And if they think primarily that their job is to evaluate their impact, all the good things follow

(Hattie 2015:1).

Aims of the Research paper

The three schools who undertook a research informed approach to their professional development did so independently of each other. Their outcomes were also presented in different ways. When reviewing their documentation it was important to agree on clear aims for the research:

- To consider the impact of professional learning and practitioner research on practice, capturing the ambition of teachers as researchers beyond their initial training.
- To discuss the key implications for the professional development of teacher ownership and the impact in the classroom.

Research Design

The data collection in this research has been through documentary evidence from the three partner schools and their findings in relation to the impact of the practitioner research they have introduced in their schools. Before extracting the content from these secondary sources it was important to assess and analyse the documents for reliability and potential ethical issues. The original data for the documents was gathered through quantitative research in the three schools. Qualitative data allows

the researcher to gather in depth insights into the participants' thoughts on undertaking research informed teaching. Documentary research enables the researchers to use historical research, demonstrating the evolution of an idea (Cohen et al 2007). Alternatively, there is a high risk of bias and the researchers being selective. In addition, a document can be open to interpretation by the person reading or the person writing (Cohen et al, 2007). There are a number of advantages to this method of research such as the documents giving factual information and the cultural aspects surrounding the issues, conversely there are disadvantages such as the information being second hand or the motive the writer had for writing the document (Lambert 2013).

This piece of research analysed three documents produced by collaborative partners, working in partnership with the institution. The three documents were published to school Governor's during the academic year 2017/18. To analyse these the researchers used a process of coding, which is the breaking and rebuilding of information to discover trends throughout a text (Cohen et al, 2007). The original data used for coding included responses to questionnaires and focus group interviews. The themes agreed for coding were:

One: Nature and Views of Educational Research

Two: The challenges of undertaking practitioner research

Three: The impact of a practitioner research model of professional development.

One of the main ethical considerations was responsibilities to participants. In the original research undertaken by the schools, ethical clearance was given by the HEI and the Head teacher was identified as the gatekeeper. In line with BERA (2014) it is important to have a responsibility to the community of educational researchers we were working with and protect the reputation of educational research by ensuring it was managed to the highest standards.

Findings

The following key findings represent the range of schools in the study: School 1 (secondary focus) School 2 (SEND focus) School 3 (primary (SEND) focus).

Table 1. Theme one: Nature or Views of Educational.

School 1	School 2	School 3
Published research is not always applicable to a school context. There is a presumption that educational research based in one school, works in all schools. School based research needs to be built into the working day.	Staff new to the profession were much more receptive to action research whereas established staff displayed some negativity. Some staff felt academic journals were difficult to read and understand. There was a feeling from some staff that research belonged traditionally, within a university remit rather than a school.	The school felt a moral responsibility to share the findings of their research as 'experts' in their field. The overall school goals were refined because of engagement in research. Being engaged in research was seen as a vehicle to investigate the 'what, if and why'? of classroom practice.

In considering the research findings above (*and the context of three schools*) the view of research being academic is presented, what is also of note is that some staff feel that academic research does not always apply to their situation.

Table 2. Theme Two: The challenges of undertaking practitioner research.

School 1	School 2	School 3
<p>A common theme for all participants was a lack of time to undertake all aspects of research.</p> <p>Balancing the demands of a full time job with research during the working day was a challenge in terms of workload.</p> <p>Some staff highlighted access to research materials had a cost implication.</p>	<p>A common theme for all participants was a lack of time to undertake all aspects of research</p>	<p>A common theme for all participants was a lack of time to undertake all aspects of research refining questions so that it was manageable (including refining questions and capturing data).</p>

A common issue in all three schools was a lack of time and access to research. This was stated as the main reason for not engaging with books, newspapers and academic journals outside of normal classroom practice.

‘Journals can be quite difficult to read and it’s hard sometimes to find one that explains things in a way that I can understand. I prefer to use Twitter or Pinterest’. ‘You can’t always get access to journals; they want you to pay to download them. This puts me off using them’

(Participant A).

Staff identified a number of challenges in relation to the time taken to do practitioner research. These included pragmatic approaches such as the refining of questions to account for constraints within a project, difficulties in recording observations and collecting data due to the ‘busyness’ of the classroom context. In response to the challenges, schools involved in this study made specific plans to give staff time to undertake research and support the practicalities of undertaking such research. As a consequence and evidence of demonstrable impact, staff were far more positive when they were put into teams. This meant they could take on different roles and a particularly successful approach identified was a focus group, where summations of reading were shared in the classroom and discussed.

Table 3: Theme Three: The impact of a practitioner research model of professional development.

School 1	School 2	School 3
There was a feeling that this model of CPD was refreshing, gave choice, independence and responsibility to staff, which impacted in the classroom.	There were changes in staff perceptions on practice. There was more discussion and sharing of ideas at a school level. Dissemination of research acted as a vehicle to change in all classrooms.	Teachers owned their research Reflection, and a shared workload developed Empowered decision makers evolved. Carrying out research informed practice, which in turn led to change in the classroom. Changed policy and practice (based on an increased level of understanding) led to improved teaching and learning. A professional learning community emerged.

Giving teachers a greater degree of independence and choice in their own professional development is summed up below:

‘It is good to have a choice of what to focus on, rather than everyone doing the same. Choosing to develop flipped learning is making me rethink my teaching methods which is stretching/challenging me’

(Participant A S1).

‘Can I thank you for actually allowing us to feel like professional adults and taking the responsibility for our own CPD. So much better than the feeling of being; watched/monitored/evaluated with a feel of negativity’

(Participant A S3).

‘Doing something that genuinely impacts learning’

(Participant A S2).

‘I think it’s far more beneficial for my practice than last year’s sessions. I like the independence and the chance to talk ideas through with other staff and pupils’

(Participant B S1).

‘Results are instantly observed and therefore momentum is positive and effortless’

(Participant B S2).

However, common issues identified with the practitioner research model are that it is a complex and time-consuming process to teach and do research simultaneously. One teacher commented:

‘Requires more thought process, more time and effort’

(Participant B S3).

Implicit impact on learners in the classroom immediately was noted/observable and there was a clear change in the perception of undertaking focused research. In all three schools senior leaders reported that there was more discussion and sharing of ideas in school, and staff were engaging in professional

conversations. Views of senior leaders acknowledged the value of staff appreciation of reporting to each other at the end of the year, learning from each other's research, and the implementation of findings into the classroom leading to positive changes in practice (School 2). School 3 particularly noted that teachers' own design of practitioner research led further to ownership and responsibility. In addition, working with partners both internal and external enabled a shared vision and structured the dialogue necessary to compare and contrast views on the research findings. Teaching staff further acknowledged the importance and value of opportunities to share and reflect with colleagues through professional dialogue and acknowledged the importance of a structured approach and external support.

It appears that through this research that some teachers became empowered decision makers as they were exploring their teaching practice and making refinements and adaptations. Collecting research informed evidence provided data and validation that informed classroom practice and challenged thinking on preconceived ideas that led to further change or refinement of practice. What is notable from this research is that all three schools had become more of a professional learning community where practice was shared.

The response from a teacher below further acknowledges the impact that undertaking personal research can have in the classroom as opposed to obligatory approaches whole school initiatives:

'At the collaborative inset day we had a session on how students can learn and remember information by having low stake tests on a regular basis. So in the department we now all plan lessons that have quick questions on previous lessons and topics, last lesson, last week and last month. This seems to be going well and I can see what topics the students still need to go over. In addition, they seem to enjoy getting questions right that they might have got wrong previously. So I suppose in that way I am using research in my teaching'

(Participant C).

The action research projects at School 1 were based on developing and strengthening students' level of independence. One positive comment states:

'I've already seen impact in the students in terms of their ability to self-organise and think through a process'

(Participant B school 1).

Other feedback from evaluation documents include:

'The students have been engaged in more meaningful work at home and preparing themselves for future lessons. You can see those who have done the work at home before the lesson and those that have not. Even if it is just learning the meaning of new key words'

(Participant C school 1).

However, at School 2 the outcomes of practitioner research were not totally positive:

'Mine is not such a success story, but I've learnt a lot how to reinforce the importance of homework because they really hated it'

(Participant C school 2).

Participants who reported a less positive conclusion from their project cite a lack of consistency across the whole school and time as being factors as to why they believe that the outcomes were not more favourable.

Discussion

The findings in this study are small scale in that they are based in three schools in the North West of England working in partnership with a local HEI. However the number of teacher responses were significant and the results through meaningful evaluation are noteworthy in recognising the impact of a practitioner research model of professional development within the classroom context. The models have been in place for one year and it is not yet possible to assess if they will be sustained over time however embedding a culture of research takes time. It is hoped that through collaborative partnerships and evidenced professional learning communities can become established. The DFE (2016a) recognises this need for a significant shift in focus from external CPD to programmes that are sustained over time and underpinned by research:

Effective professional development for teachers is a core part of securing effective teaching. It cannot exist in isolation, rather it requires a pervasive culture of scholarship with a shared commitment for teachers to support one another to develop so that pupils benefit from the highest quality teaching

(DFE 2016a:3).

The overarching vision for each of the schools in engaging in a practitioner research model were the same, in that they were looking for a different form of CPD than they had used before and one that would impact in the classroom on teaching and learning. The individual focus of the practitioner research did vary, including supporting learners with Special Educational Needs and Disabilities (SEND), narrowing the gap for disadvantaged learners and developing independence, however they were all part of the individual school development plans. All staff were encouraged to put their reading into action, discuss and share their findings, and identify next steps. Each school had created an opportunity for teachers to present their findings formally so that they could be easily shared. This is in line with the recommendations made by Levin (2003) that there is a need to

Increase ownership and accountability of experienced teachers by setting up informal group presentations and/or formal school presentations of action research projects. In other words, provide a wider audience for sharing and disseminating the results of action research projects
(Levin 2003:148).

Common outcomes were that teachers became authentic researchers who identified themselves as role models in studying alongside their learners, recognising the challenges of learning themselves. Not only was a change in practice identified but also a change in culture with sharing of reading and teaching approaches undertaken. This supports the view of Timperley (2011) that teacher learning must be at the centre of the process of professional development. However 'time' emerged as a key constraint to research in this study and although is acknowledged as an inherent part of the process (Ellis 2016) the required time is essential for success (Aubusson et al 2009).

Impact in the classroom was noted throughout this research as a personal approach and recognition of professional development and ownership that was highly valued. This impact however reached further as one of the schools included in this research went onto gain a Youth Sport Trust (YST) Gold Quality Mark and the feedback received highlighted the impact of the research projects:

‘It was great to see some of the innovations and new ways of working in which you are bringing out in ALL staff across the school, I particularly like the idea of each member of staff undertaking a personal and professional Action Based Research project based on school issues’
(School feedback YST Quality Mark 2018).

Another of the schools in this study gained an award from The National Autistic Society (NAS) - Autism Accreditation which stated that:

‘The (sic) school is committed to encouraging and developing reflective practice in order to provide best outcomes for the pupils...The action research programme is linked to teachers professional performance management and the proposals and findings from the research are shared across college via staff meetings. This demonstrates a real commitment to valuing and encouraging staff self-development and is seen as a positive by the staff themselves’
(NAS Accreditation School feedback 2018).

Conclusion

The aim of this paper was to consider the impact of professional learning and practitioner research to encourage practitioners to take control of their own professional development and personal areas for development. The key implications for the professional development of teachers through the evidence from both teachers and leadership clearly demonstrate that this can have an impact in the classroom as teachers’ value ownership for improving classroom climates and outcomes for children (Goldacre 2013).

The schools in this study exemplified the research from literature and changing paradigm shifting from the traditional model of CPD and created teachers as authentic researchers, resulting in a change in practice and culture and classroom impact. Whilst acknowledging that this may not work for all teachers and situations in these school contexts, it is notable that genuine engagement resulted in positive change and this is exemplified through choice and the aspects of teaching and learning that are chosen as a personal focus leading to authenticity and perhaps to a more robust and sustainable change given the time. This paper acknowledges that this is a small scale study of three schools during one academic year and generalisations cannot be made, however do acknowledge that foundations for change have been laid.

So what next for the schools involved? Garet et al (2001) claim that connections between classroom teaching and professional development are more likely to be sustained over time if opportunities to learn and develop are built in to teachers’ regular workday. This leads to the importance of leadership in building capacity for teachers to engage with research and make connections between this research and their own knowledge of teaching. A research-rich culture that is connected and collaborative:

When research is seen as a body of knowledge, teachers may or may not choose to make use of it in their practice. When research becomes a **professional learning process**, it can have a deep influence on how they understand research and may lead them directly towards more active engagement in undertaking enquiry themselves

(BERA 2014:18).

What is of value from this study is further validation for practitioner action research and the necessary focus on engaging teachers in the learning process. Encouraging teachers to take risks informed by research and critically evaluate if what they are doing in the classroom has an impact on students (Hattie 2015). Informal teaching networks that now exist as a result of partnership can be effective and should not be ignored as an ongoing professional development model: “It is by really placing ‘what

works' at the heart of classroom practice, and embedding this within our approach to professional development and school improvement" (Greening 2017 ACSL).

Recommendations

The following recommendations are common to the schools in this study but also could be considered for those schools aiming to introduce a research informed approach to the professional development of their staff:

- Provide sufficient time for staff to engage in wider research by dedicating directed time to this sole purpose.
- The use of social media and other online applications could be used to share information and resources and facilitate professional dialogue.

Next steps

The next steps will be to continue to engage with the schools within this partnership and support them in sustaining the research engaged approach to continued professional development that they have begun. One of the key findings from this initial research is that staff do use online learning to support their research which includes social media. We do not know enough currently about how much research informed social media support for teaching is available to staff. We aim to undertake further research to find out how we as a university can support staff in using social media as a source of inspiration for research informed professional development.

Acknowledgements

We would like to thank partnership schools and research engaged participants whom this research is based on and who engaged in the programme of professional learning.

References

- Aubusson, P., Ewing, R., & Hoban, G. (2009). *Action learning in schools*. New York: Routledge.
- BERA (2014) *Research and the teaching profession* accessed through:
<https://www.thersa.org/discover/publications-and-articles/reports/research-and-the-teaching-profession-building-the-capacity-for-a-self-improving-education-system>
- Campbell, A., McNamara, O. & Gilroy, P. (2004) *Practitioner Research and Professional Development in Education*. London: Sage Publications
- Cohen, L., Manion, L. & Morrison, K. (2011) *Research Methods in Education* 7th Edition. London: Routledge
- DfE (Department for Education) (2015) The Carter Review, Available at:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/399957/Carter_Review.pdf
- DfE (Department for Education) (2016a) Education Excellence Everywhere, Available at:
<https://www.gov.uk/government/publications/educational-excellence-everywhere>
- DfE (Department for Education) (2016b) Standard for teachers' professional development, Available at:
<https://www.gov.uk/government/publications/standard-for-teachers-professional-development>
- DfE (Department for Education) (2016bc) Standard for teachers' professional development: Implementation Guidance.
Available at:
<https://www.gov.uk/government/publications/standard-for-teachers-professional-development>
- Donaldson, G. (2010) Teaching Scotland's Future dera.ioe.ac.uk/.../the-report-of-the-review-of-teacher-employment-in-scotland-0911_

- Ellis, N., & Loughland, T. (2016). The Challenges of Practitioner Research: A Comparative Study of Singapore and NSW. *Australian Journal of Teacher Education*, 41(2).
- Garet, M. Porter, C. Desimone, L. Birman, B. & Suk Yoon, K. (2001) What Makes Professional Development Effective? Results from a National Sample of Teachers. *American Educational Research Journal*, Vol. 38, No. 4 (Winter, 2001), American Educational Research Association
- Geijsel, F. Meijers, F. & Wardekker, W. (2007) *Leading the process of reculturing: Roles and actions of school leaders*. The Australian Educational Researcher.
- General Teaching Council (2006) *Using research in your school and your teaching. Research engaged professional practice*. TPLF06. London: General Teaching Council for England
- Goldacre, B. (2013) Building Evidence in Education. Department of Education. Available at: <https://www.gov.uk/government/news/building-evidence-into-education>
- Greening, J. (2017) ASCL Conference 10th March 2017, Birmingham
- Guskey, T.R. (2002) *Professional Development and Teacher Change*. Teachers and Teaching, theory and practice. Routledge, Taylor & Francis Group.
- Hargreaves, A. (2000) *Four Ages of Professionalism and Professional Learning*. Teachers and Teaching. Routledge, Taylor & Francis Group.
- Hattie, J. (2015) *Research Files Episode 10: Professor John Hattie* available at <https://www.teachermagazine.com.au/articles/research-files-episode-10-professor-john-hattie> [Accessed 12/04/18]
- Kempton, S. (2013) *To teach: to learn*. Centre Forum: <https://www.centreforum.org/assets/pubs/teacher-cpd-web.pdf> (Accessed 08/05/18)
- Lambert, M. (2013) *A beginner's guide to doing your education research project*, Sage, London
- Levin, B.B. & Rock, T.C. (2003) *The Effects of Collaborative Action Research on Preservice and Experienced Teacher Partners in Professional Development Schools*. Journal of Teacher Education. American Association of Colleges for Teacher Education.
- Mezirow, J. (1997) *New Directions for adult and continuing education No 74*. San Francisco: Jossey-Bass Publishers
- National Autistic Society. [online] Available at <https://www.autism.org.uk/> [Accessed 12/07/19]
- NCTL (National College for Teaching and Leadership) (2015) Evidence-based teaching: advancing capability and capacity for enquiry in schools. Available at: http://dera.ioe.ac.uk/24429/1/EBT_Interim_report_FINAL.pdf
- Nelson, R. Spence-Thomas, K. & Taylor, C. (2015) *What makes great professional development: research case studies*. National College for Teaching and Leadership.
- Norton L. S. (2009) *Action Research in Teaching & Learning: a practical guide to conducting pedagogical research in universities*. London. Routledge
- Pedder, D. & Opfer, D. (2011) *Are we realising the full potential of teachers' professional learning in schools in England? Policy issues and recommendations from a national study*. Professional Development in Education. Routledge, Taylor & Francis Group.
- Timperley, H. Wilson, A. Barrar, H. & Fung, I. (2007) *Teacher Professional Learning and Development. New Zealand: The Iterative Best Evidence Synthesis Programme*, The Ministry of Education.
- Timperley, H. (2011) *Realising the power of professional learning* Open University Press: London.
- Youth Sport Trust [online] Available at <https://www.youthsporttrust.org/> [Accessed 12/07/19]