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Abstract

This research project will investigate the level of understanding early years practitioners have of physical literacy and its importance in child development. The research outcome will help to influence future training programs and government frameworks. Taking place in the local authority of Carmarthenshire, the research project will focus on funded non-maintained nurseries and their practitioners. A mixed method approach will be taken with an initial questionnaire to be completed as part of quantitative research with a large sample size of practitioners. The answers will be given on a scale rating to gain an understanding of the practitioner's knowledge and understanding. The sample size will then be reduced to four funded non-maintained settings and observations will take place to see how the practitioners motivate and engage with the children and show their knowledge and promotion of physical literacy in practice. Semi-structured interviews will also take place within the four funded non-maintained settings. The research outcomes will then be triangulated to ensure validity of the project. All the data collected will be analysed to find out the depth of understanding practitioners have of physical literacy and its importance to early child development. Ethical implications will be considered throughout every part of the research project, in line with the University's code of practice and British Educational Research Association (BERA). Voluntary informed consent and assent will be sought after the potential participants have had every aspect of the research project explained to them, including the process, the outcome and how their information will be used and protected.

Literature Review

The purpose of this research project is to find out how well practitioners understand the importance of physical literacy in the early years. The research will take place within selected early years settings within the local authority of Carmarthenshire. The aim of the research is to influence future training and frameworks within the curriculum.

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According to Public Health Wales (2021), statistics show that the numbers of obese and 'overweight and obese' children aged between 4 and 6 are considerably higher in Wales than in Scotland and England. Further to this, the data suggests that the number of children with obesity aged 4 to 5 years living in the local authority of Carmarthenshire is significantly higher than the Welsh average. The Welsh Government (2022a) proposes to maximise the physical wellbeing of children through the understanding of healthy choices and behaviours, resulting in the development of a healthier Wales. The goal is to have over 99% of children with two or more healthy behaviours by 2050. One of the lifestyle behaviours mentioned in the report is doing a form of physical activity for at least an hour, every day of the week (Welsh Government 2022a). The curriculum for Wales supports these goals by stating the mandatory area of developing learner's understanding of physical health and the benefits it can carry throughout life. The guidance states that young people in education should be supported in learning healthy behaviours that "develop the confidence, motivation, physical competence, knowledge and understanding" they need to be responsible for leading physically active lifestyles (Welsh Government 2022b). These outcomes are the definition of physical literacy (International Physical Literacy Association 2017). With levels of obesity in children aged 4 to 5 years old in Wales rising to 12%, there is growing concern for the health of future generations. To combat this rise children are encouraged to decrease the amount of time spent at screens and to increase their physical activity (NHS Wales 2022). Foulkes *et al*. (2020) claim that to help children to achieve a positive lifelong attitude towards physical activity, the preschool years are the ideal time to introduce physical literacy. Buckler and Bredin (2018) agree, stating that children acquire core gross motor skills between the ages of 0 and 5 years old and that with these skills they are more likely to develop into fit adults who engage in physical activity. Vinci *et al.* (2023) suggests that practitioners within early years settings play a key role in the development of children's physical literacy. In 2017 it was found that 90% of children aged three and four were in some type of childcare setting, thus suggesting that early year's practitioners can play a vital role in the development of the child (Social Research and Information 2017). Buckler *et al.* (2023) similarly states that a considerable amount of

preschoolers are cared for by early years educators in early childhood education and care settings however these educators have little to none training in physical literacy and suggest that children in these settings show low levels of activity. In contrast, Hesketh, Griffin, and van Sluijs (2015) found that children aged 3-4 years who attend childcare settings were on average more active in care than at home and met the guidelines for daily activity levels. However, it is stated that higher intensity activity should be encouraged to improve health outcomes, especially as weight problems in young children are on the rise. Cairney *et al.* (2018) believe that physical literacy in children of preschool age has been overlooked, even though it is fundamental to the establishment of lifelong behaviours related to physical activity. Simpson *et al.* (2023) agree with this notion when they claim that the understanding practitioners have of physical literacy is minimal due to a lack of training in place, even though it is highlighted how important the role early year's practitioners have in the development of young children. Further to this, Bandura's theory of social learning argues that through modelling, behaviours are taught (Aubrey and Riley 2022). This suggests that young children would develop physical literacy if they observed their educators being physically active or if they were offered opportunities that increased their ability to be physically active (Lugossy, Chow and Humbert 2021). It follows that if early childhood practitioners are educated and supported in developing their own physical literacy and activity, they will feel more confident in their ability to model these behaviours to the children in their care, which in turn develops the child's motivation and confidence to be physically active throughout life, as well as developing the child's knowledge and competency in this area. (Lugossy, Chow and Humbert 2021).

Methodology

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A methodology is a conceptual framework which aims to find an outcome to the research question (James 2016). Nolan, Macfarlane, and Cartmel (2013) and Hennink, Hutter and Bailey (2020) expand on this by noting that a methodology is a way of justifying and rationalising how the research is carried out, with Hennink, Hutter and Bailey (2020) describing a paradigm as a way of thinking or looking at reality, stating that a paradigm consists of a methodology. Two different types of methodology are qualitative and quantitative.

A quantitative methodology is one where the research question can be answered from statistics gained from a collection of facts and numerical data (Bell and Waters 2018, Mukherji and Albon, 2018). Methods generally used in quantitative methodology can consist of experiments, measurements and scaling, observations that gather numerical data and surveys (Nolan, Macfarlane, and Cartmel 2013). Quantitative data is usually presented in the form of graphs, giving a clear way to compare trends and relationships in the data collected (Howells and Gregoryn 2016). Quantitative data is predominantly collected from large sample sizes to give a generalized outcome that can be applied to larger scale populations (Flick 2015).

Kumar (2014) states that a qualitative methodology includes research techniques that aim to look at the experiences of the chosen sample in a subjective way. Hennink, Hutter and Bailey (2020) agree, explaining that qualitative research can be carried out to gain an understanding of the view's, beliefs and behaviours of the participants and that this methodology is functional in the comprehension of complex issues. Types of methods used in qualitative research can include case studies, observation, interviews, action research and questionnaires that ask open questions (Mukherji and Albon 2018). Qualitative research generally uses small sample groups as the information gathered has more depth and subjectivity and aims to build a deeper understanding (Nolan, Macfarlane and Cartmel 2013).

For this research project, a mixed method approach has been chosen. A mixed method approach combines the use of both qualitative and quantitative research, Austin (2016) claims that there are benefits to carrying out research in this way, suggesting that using

mixed method can eliminate bias and lead to a more solid conclusion. Nolan, Macfarlane and Cartmel (2013) agree, claiming that a mixed method approach can produce more reliable and valid outcomes.

When carrying out research, the decision of what people to invite to participate in the project needs to be made, this is called the sample. (Mukherji and Albon, 2018). Cohen, Manion and Morrison describe a sample as being a subset of people selected from the wider population. Kumar (2014) claims that sampling only gives an estimated prediction of a situation in a population and that different sampling techniques are required for different methodologies.

The chosen sample for this research project is practitioners and children within early years funded non-maintained settings within the local authority of Carmarthenshire. This area has been chosen as it is an area in Wales that has a higher-than-average statistic of obese children (Public Health Wales 2021) and so is of interest when researching physical literacy. Carmarthenshire is also an area that is easily accessible to the researcher when carrying out the observations.

The first phase of this research project entails a scale questionnaire to determine the practitioner's understanding and perception of physical literacy. The participant will rate each statement on a five-point scale, for example strongly agree – agree – neither agree nor disagree – disagree – strongly disagree. This type of questionnaire has been chosen as it is intended to reach a large sample of practitioners and is less time-consuming than carrying out interviews. However, one of the disadvantages of using such a questionnaire is that participants tend to avoid using the extreme ends of the scale and place their answers towards the middle, which could result in a dishonest representation (Male 2016). The questionnaire will be distributed electronically to all funded non-maintained nursery settings within Carmarthenshire with an invitation for all practitioners within these settings to take part. A large number of recipients have been chosen, as one of the disadvantages to questionnaires is that response rates are often low (Kumar 2014). If the response is in low numbers, another problem could be that the results will not be representative of the total population, as those that have completed it

may have bias motivations for completing it (Kumar 2014). The questionnaire will give an understanding of the knowledge and perception that early year's practitioners have of physical literacy, across the local authority.

The next phase in the research project is to carry out semi-structured interviews with practitioners and observations, at four funded non-maintained nurseys within Carmarthenshire.

Observations are a qualitative way of learning more about the happenings within an environment and can give rise to understanding more about everyday behaviours (Mukerji and Albon 2018). Hennink, Hutter and Bailey (2020) expand on this describing observation as a way of also understanding the interactions and actions of people. In this research project, the observation will be taking place within a nursery setting. This has been chosen, as observations are considered a good way of obtaining information from young children, who may lack the communication skills to be able to fulfil other methods of research (Walker and Solvason 2014). Another advantage that is offered by observations is that as behaviour is happening the researcher is observing it (Kumar 2014), however a disadvantage could be that the presence of the observer could affect the participants, resulting in them behaving in ways that are not usually seen (Cobb 2016). This change in behaviour due to the act of observation is known as the Hawthorne effect (Oswald, Sherratt and Smith 2014). Kumar (2014) also states that there is a possibility for the observer to show bias during observations, this bias could be limited by the introduction of a second observer and the use of triangulation.

The observations within this research proposal will take place under natural conditions, with the researcher observing children and practitioners in the environment that they are used to and assumably comfortable in (Lin 2016). The researcher aims to determine whether children are afforded the opportunity to partake in physical activity and whether practitioners play a part in motivating children to be active. The researcher will observe passively, not getting involved in the activities, drawing conclusions from what they can see and hear. This is known as non-participant observation (Kumar 2014).

Flick (2015) explains that semi-structured interviews can be a qualitative way of finding out a person's perspective on a certain topic, the preparation of questions is made by the researcher for the interviewer to ask and the questions can be asked in any order and in any format, unlike questionnaires. This interview technique contains both open and closed questions and allows the interviewer to delve deeper into responses (Mukerji and Albon 2018). A disadvantage to interviews, is that it can prompt the person being interviewed to want to be shown in a good light, and so only giving answers to what they think the interviewer wants to hear (Cohen, Manion and Morrison 2018). Another limitation to interviewing is that the interaction between interviewer and the practitioner could influence the quality of the data obtained. Another disadvantage is that interviews, along with observations can be expensive and time- consuming, for instance if the interviewer is having to travel far between settings (Kumar 2014).

As these research methods are a qualitative way of collecting data, the sample size is small, consisting of four settings. An invitation to express interest in the research project will be sent electronically to the managers of all funded non-maintained nursery settings within Carmarthenshire, along with the questionnaire. Following on from the interest received, the respondents will be reduced to four settings by random sampling. According to Mukherji and Albon (2018), random sampling affords every person in the sample frame equal opportunity of being selected to partake. Every nursery that responds will be given a number, these will be entered into a computer-generated randomizer, to give the numbers of four selected participants. From this, the four selected nurseries will be contacted via email to ensure they wish to partake in the research project.

By using three separate methods of data collection, this research project will be able to triangulate the findings to validate the outcomes and produce an accurate conclusion (Lin 2016). Nolan, Macfarlane and Cartmel (2013) support this by describing triangulation as the application of various methods of data collection with the aim of achieving consistently trustworthy, plausible results.

A case study was not considered for this research project as a generalized view of the way practitioners perceive physical literacy in the local authority of Carmarthenshire was investigated. Case studies tend to focus on individuals or specific groups regarding a specific context (Nolan, Macfarlane and Cartmel 2013). According to Ashley (2021), case studies are reliant on the gathering of data from multiple sources by multiple methods, to produce in depth conclusions. This research project could not afford the expense and time to complete such a study.

Ethical Considerations

According to Roberts-Holmes (2018) ethics are central to every research proposal involving children. Research ethics are concerned with the way the participants in the research project are treated (Oliver,2010), with a guide of moral principles that ensure researchers cause no harm or deceit to participants, themselves or the organisations they represent (Palaiologou, 2012). BERA (2019) and UWTSD (2022) recommend that all members and those carrying out research adhere to the ethical guidelines, conducting themselves with transparency, openness, integrity and accountability and always showing respect to research participants.

Hammersley (2021) and UWTSD (2022) state that individuals have a right to make choices regarding their own life including whether they wish to partake in research projects. This is also inclusive of children. Article 12 of the United Nation Convention for the Rights of the Child states that every child has a right to be heard and have their views and expressions respected (UNICEF, No date). Nolan, Macfarlane and Cartmel (2013) insist that gaining informed consent from participants is paramount and can be done by the researcher being open and providing an information sheet to potential participants explaining in plain language what the research project entails, ensuring that individuals can make an informed decision about joining the study. ERIC (2023) agrees, stating that it is the child’s right to make decisions that affect them and that gaining informed consent from a child shows respect for their dignity. Roberts-Holmes (2018) states that informed consent gained from young children is known as assent in legal

terms and that before a child chooses to take part, they are issued with a child friendly information leaflet to gain an understanding of what will be taking place (UWTSD, 2022). For consent to be classed as ‘informed’, the participant, whether adult or child must be understanding of their role within the research as well as the research project itself, the participant must not be coerced into joining the research and that when involving children, consent should be clear and detailed, with agreement to partake involving researchers and guardians (ERIC, 2023). This is supported by Palaiologou (2016) who states that within the information offered to individuals, details regarding the reason for the research being undertaken, the methods that will be used to collect information, the predicted timescale for the research, the way data will be distributed and kept secure as well as how the participants will be kept safe during the research project should be included. Along with the information sheet, a consent form should also be provided.

Within this research project, the focus is on practitioners, however children will be present in the classrooms whilst observations are being carried out. An invitation to partake will be issued via email to the managers of funded non-maintained nursery settings. Following this, a link to an online questionnaire will be issued to those willing to participate which will include an online consent form. After the selection of the nurseries to participate has taken place, meetings will be arranged with the managers to discuss what the observation process entails and the reason for carrying out the research. Providing the managers are willing for their settings to be involved, information and consent forms will be sent to all members of support staff and parents of children, following the BERA (2019) and UWTSD (2022) guidelines. Face to face meeting will then be arranged to clarify any issues. Consent will not only be sought from practitioners but also from the guardians of the children present during observations and from the children themselves. UWTSD (2022) state that even though parental permission may have been gained, if the child wishes not to partake or is in a state of distress, then the child's decision should take priority. Nolan, Macfarlane and Cartmel (2013) express the importance of rewarding children and making sure they enjoy the experience of partaking in the research project. However, this may be misconstrued as

bribery or coerciveness. BERA (2019) warns about the use of incentives, and the potential for them to affect an individual's decision to participate.

Participants will be made aware in the information sheet that they have the right to withdraw consent from the research project at any point that they wish (ERIC 2023). Palaiologou (2016) and UWTSD (2022) assert that a critical part of ethical research is informing and allowing the participants to withdraw their consent at any time, despite how damaging it could be to the research.

Nolan, Macfarlane and Cartmel (2013) explain that participants need to be fully informed of what the research comprises of, and that the researcher needs to be appreciative of the differing views of participants surrounding the topic being researched. Any additional needs that participants may have will be acknowledged and respected along with cultural differences and values.

Another component that researchers need to be mindful of and prioritise is the anonymity of the participants (Palaiologou 2016). However, Roberts-Holmes (2018) stresses that before giving informed consent, participants should acknowledge that there is a limit to confidentiality in the face of child protection issues and that researchers have a duty to report any safeguarding issues to the relevant person.

Data protection is another part of ethical research. In this research project, online questionnaires will be completed anonymously. Although this has some benefits regarding confidentiality, Brooks, te Riele and Maguire (2014) state that it may be problematic if participants decide to withdraw from the research further down the line as it would be almost impossible to locate their answers.

During the observation and interview phase of the research it is important that the notes taken are accurate and focused on the topic of research and that the anonymity of the participant and the setting kept (Beauchamp and Haughton, 2012, UK Gov 2018 and UWTSD, 2022). Whilst taking notes, the researcher will not make any recordings about the participants identity, such as name, age, or other identifiable features. All information recorded will be relevant to the research, including when, and why the

research is taking place, Palaiologou (2012) states that to respect confidentiality, names of people and settings should not be taken. However, Nolan, Macfarlane and Cartmel (2018) state that as part of taking field notes, the place in which the observation is taking place should be noted. For this research project, the setting and individual's names will not be recorded during note taking or in the publication of the results (ERIC, 2023)

All electronic questionnaires and consent forms will be kept encrypted and all notes will be kept safe, in accordance with GDPR (UK Gov, 2018). This ensures that information cannot be accessed or lost and is kept secure. Participants have the right to request to view any information held about them at any point (UK gov, 2018) as thus researchers should have all data accessible and stored appropriately.

When carrying out research, with the involvement of children. The researchers need to ensure they have a current Disclosure and Barring Service check, to comply with safeguarding (UWTSD, 2023). If any safeguarding concerns were to arise during the research project, the researcher must report these to the relevant persons. Any Data protection matters are to be reported to the University's Data Protection Officer. (UWTSD, 2023). The nursery settings should have their own safeguarding policies in place, so it is crucial for the researcher to familiarise themselves with this before commencing (Welsh Government, 2023). Other ways to minimise risk or harm coming to participants is to adhere to the nursery settings health and safety procedure. This will reduce the risk of physical harm occurring. Participants are also at risk of emotional harm. Children and adults alike could find it unnerving being interviewed and/or observed by the researcher and could experience some distress (Bell and Waters 2018). The researcher can tune into the environment and act on signs of withdrawal, stopping the interview or observation if necessary (Nolan, Macfarlane and Cartmel 2013). As well as risks to the participant, there are also risks for the researcher. Flemming, J. and Zegweard, K. (2018) state that a conflict of interest can affect the transparency of the report, which could have a negative impact on both the researcher

and the university. The concealment of results can be seen as bad practice, having a tarnishing effect on both researcher and university and can be prevented by being open and honest with the collected data (Flick 2015). Finally, it would be detrimental to the University should the researcher act in an unprofessional manner with a lack of regard for the ethical guidelines outlined in the University's code of practice. (UWTSD 2023).