

Education 3-13

International Journal of Primary, Elementary and Early Years Education

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/rett20

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To cite this article: Susan Marron, Frances Murphy, Vasiliki Pitsia & Claude Scheuer (2023) Inclusion in Physical Education in primary schools in Europe through the lens of an Erasmus+ partnership, *Education 3-13*, 51:5, 715-730, DOI: [10.1080/03004279.2021.2002382](https://doi.org/10.1080/03004279.2021.2002382)

To link to this article: <https://doi.org/10.1080/03004279.2021.2002382>



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Published online: 15 Nov 2021.



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Inclusion in Physical Education in primary schools in Europe through the lens of an Erasmus+ partnership

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ABSTRACT

Using data from the Disentangling Inclusion in Primary Physical Education (DIPPE) Erasmus+ project, this study aimed at investigating teachers' practices related to inclusion of children with additional needs (AN) in primary physical education (PE) and identifying supports that could enhance these practices. Responses from 1170 primary teachers across nine European countries to an online questionnaire were analysed. Although inclusion was regarded as important, only 30% of children with AN were reported as being always included and engaged in PE. Teachers considered guidance on children's motor needs and video-based resources particularly useful in promoting inclusion. Implications of the findings within the DIPPE project and more broadly are discussed.

ARTICLE HISTORY

Received 7 July 2021

Accepted 27 October 2021

KEYWORDS

Physical education; inclusion; primary school; online supports; teachers

Introduction

Inclusion of children in Physical Education (PE) lessons in primary schools regardless of their abilities is the responsibility of all stakeholders in education and arguably this represents a challenge for policy makers, schools and teachers, in particular, underpinned by their reflection on the human rights of the child. Not least amongst these challenges is the requirement that teachers have subject and content knowledge avoiding merely assigning 'menial tasks' (Block and Obrusnikova 2007) to children with additional needs (AN). The Convention on the Rights of the Child (United Nations [UN] 1989) and the Standard Rules on the Equalisation of Opportunities for Persons with Disabilities (UN 1993), adopted by the UN General Assembly in December 2006, provide a powerful impetus to promote the human rights of all children including those with AN. The inclusive education agenda has been endorsed internationally (UNESCO 1994) with legislation in place in all European countries designed to promote and advocate for inclusion (National Council for Special Education [NCSE] 2010). The International Charter of Physical Education, Physical Activity and Sport demonstrates the aspirations for inclusive PE (UNESCO 2015a) and the fundamental right of the child to PE. Although the underpinning idea is that all children have the right to be educated together regardless of any AN, teachers' views and practices have been identified as potential challenges that may compromise children's right to access and enjoy inclusive PE (Fitzgerald 2012; Haegele and Hodge 2016).

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Inclusion, additional needs and Universal Design for Learning

While there is no universally accepted definition for inclusion, this paper adopts UNESCO's definition whereby 'inclusion is understood as a sense of belonging, which includes feeling respected, valued for who you are, feeling a level of supportive energy and commitment from others', while UNESCO also acknowledges that 'there should be commitment to embrace difference and value the contributions of all participants, whatever their characteristics or backgrounds' (UNESCO 2015b, 8). 'Inclusion involves a particular emphasis on those groups of learners who may be at risk of marginalisation, exclusion or underachievement. This indicates the moral responsibility to ensure that those groups that are statistically most 'at risk' are carefully monitored, and that, where necessary, steps are taken to ensure their presence, participation and achievement in the education system' (UNESCO 2005, 16).

Some children receiving school education, which includes PE, require support which is additional to the provision that is generally provided to their peers in order to help them benefit from school education. In this paper, these children are referred to as *children with AN*. Children with AN can have particular learning needs that arise from a range of differences between children, including cognitive, motor and physical, sensory, communicative and behavioural. Ramberg and Watkins (2020) argue that this categorisation or labelling could be used for data collection and monitoring to identify children at risk of exclusion. It should be acknowledged, however, that there has been considerable debate related to the sensitivities involved with categorisation of AN (Overton, Wrench, and Garrett 2017), which may run contrary to the adoption of the Universal Design for Learning framework (UDL) (Meyer, Rose, and Gordon 2014) underpinning this study.

UDL is a framework used to 'guide the design for learning environments that are accessible and challenging for all ... aiming to change the design of the environment rather than to change the learner' (Center for Applied Special Technology [CAST] 2018). The framework is underpinned by three principles prompting a focus on provision of multiple means of engagement, multiple means of representation and multiple means of action and expression. According to Lieberman and Grenier (2019), multiple means of engagement applied to PE relates to the teacher presenting a range of motor skill practices for children so that they can choose meaningful activities or equipment to improve their motivation to learn. Multiple means of representation relates to the teacher using a variety of ways to present information and putting it in the context of what children already know. Multiple means of action and expression is how children can respond to show their learning using a variety of methods.

UDL has 'become a popular mechanism to try to promote inclusion in classrooms' and it could be argued that it has the potential to bridge the gap between theory and practice in PE, where 'there appears to be a disconnect in how to do this' (Kennedy and Yun 2019, 31). Educationalists including Lieberman, Brian, and Grenier (2019), for example, support the use of the UDL framework in the context of the teaching of PE.

Including the child in PE: professional practices supporting the teacher

The inclusion of children with AN in PE has been the focus of discussion internationally (Crawford 2011; Haegele and Sutherland 2015) within the broader context of human rights discourse. In line with this focus, and in an effort to provide research evidence on inclusion in primary PE for all stakeholders, the purpose of this study was to (a) investigate teachers' practices related to inclusion of children with AN in primary PE and (b) identify supports that could enhance these practices.

Despite legislative policies committing to inclusive education evidenced in Europe, research suggests that children with AN do not receive equal access to quality PE (Fitzgerald 2012; Lirgg et al. 2017; Wilson, Theriot, and Haegele 2020). The World-Wide PE Survey (UNESCO 2014) indicates that in relation to policy there has been increasing consideration of inclusion, disability issues, and advocacy of inclusive practices in PE programmes for children with AN. Differences in educational

opportunities for children can depend not only on their individual circumstances, but also on where they live and how education systems are structured (Ramberg and Watkins 2020), some being taught in mainstream classes, others in special classes or classes within special schools. A concern, however, has been expressed by Wilson, Theriot, and Haegele (2020) that children, while integrated into mainstream classes and ‘present’, may not be exposed to inclusive practices. This highlights the importance of the awareness of the embodied perspective as children strive to engage fully in PE classes (Haegele and Hodge 2016).

Across Europe PE is part of the curriculum in primary schools. Planned, progressive, inclusive learning experiences have been highlighted as features of quality PE contributing to the development of physical, cognitive, social and emotional skills needed to lead a physically active life (UNESCO 2015b). In some European countries, PE is taught by generalist primary teachers, while in others specialist PE teachers or sport coaches teach PE. Regardless of the different contexts in which children engage in PE lessons, practices adopted by those teaching within time allocated for PE are critical to the success of inclusion policies. Given the UNESCO (2015b) understanding of inclusion, a key principle of all PE lessons should be that the child is valued and supported with a commitment from teachers.

Teachers have reported feeling unprepared to implement inclusion in practice, although many have a positive attitude towards inclusion (McGrath, Crawford, and O’Sullivan 2019). Perhaps not surprisingly, the attitudes of teachers are considered crucial to the process of inclusion (Fitzgerald 2012) and have been linked to teachers’ actions towards teaching children with AN in mainstream settings (Haegele and Hodge 2016). However, teachers, despite trying, struggle (Lirgg et al. 2017). No matter how positive attitudes of teachers are, the knowledge and the competence of the teacher constitute additional critical factors in including children with AN in any successful PE programme (Block and Obrusnikova 2007; Crawford, O’Reilly, and Flanagan 2012). Welch (1996) argued that, historically, teachers were exempt from teaching students with AN, therefore, educating teachers for inclusion was not a priority in teacher education. More recently, however, the European Agency for Development in Special Needs Education (2010) reported on a wide variety of models and practices at initial teacher education for inclusion, which, while encouraging, is not accompanied by reports on their use and effectiveness. In their systematic review, Rekaa, Hanisch, and Ytterhus (2019) reported that ‘many PE teachers feel incompetent in dealing with the needs of students with disabilities’ (46) and they highlight practical issues as the main obstacle to inclusion. They also recommend that ‘rather than *telling* teachers to practice PE in a more inclusive way, or *explaining* why the goal is so hard to achieve, there is a clear need to *enable* teachers to become more inclusive in their practice’ (53). In the same review, teachers’ perceived competence was highlighted as the strongest predictor of teachers’ positive experiences across the studies being reviewed. Hence, the issue of teacher competence is central to teachers’ practice and to our understanding of the supports that they need to enhance their inclusive practice as reflected in the focus of the current study.

Methods

Data and sample

This study employed data from the Disentangling Inclusion in Primary Physical Education (DIPPE) project (DIPPE 2020). DIPPE is an Erasmus+ project that aims to create an online platform for primary school teachers (generalist and specialist) and primary student teachers to access information and supports about inclusion and inclusive practices in PE, with a particular focus on the inclusion of children with AN. Scholars across a number of European institutions have been involved in the various phases of the project working collaboratively to support teachers. Ethics approval by the Dublin City University Research Ethics Committee was granted for the secondary analysis of the DIPPE data.

In order to investigate teachers’ practices related to inclusion of children with AN in primary PE and identify supports that could enhance their practice, a questionnaire was designed informed by

extensive discussion and debate by all of the Erasmus+ project partners. Particular attention was paid to the language used in the questionnaire to ensure that it could be translated consistently across the participating countries. The national translated versions of the questionnaire were checked by the project partners to make sure that all questions were interpreted in the intended way to be able to collect equivalent information across countries.

Teachers who teach PE in primary schools in Europe were invited to provide their responses to the questionnaire. The questionnaire was piloted in February 2019 and the final version of the questionnaire was administered in April 2019, available in English and five other languages (French, German, Slovak, Spanish and Croatian). The questionnaire comprised of 17 questions, divided into three sections, and sought to gather information about teachers' professional experience, their practices, and their responses to proposed elements of an online platform or 'toolkit' to further support their practice. The questionnaire consisted of close-ended questions, it was delivered online via Qualtrics xm, and had an anticipated completion time of 15 minutes. The DIPPE partners distributed the questionnaire hyperlink to their networks of teachers of primary PE, with an accompanying letter describing the purposes of the project and the questionnaire, as well as the confidentiality, anonymity, and data storage protocols. It is important to note that the letter accompanying the questionnaire provided an operational definition of inclusion which adopted a strong educational focus bearing in mind that the target respondents were teachers: inclusive education is 'a process of addressing and responding to the diversity of needs of all learners' (UNESCO 2005, 13).

A total of 1,651 questionnaires were returned. For this study, the completion rate of the questionnaire and the total number of responses per country were used as the criteria for respondents' inclusion in the analysis sample. Only respondents with at least 80% completion rate and countries with at least 20 responses in total were included in the analysis sample. Hence, the final sample involved in the analysis was $n = 1170$. Table 1 presents the nine countries from which data were employed in the analysis and the total number of responses per country. Reflecting the overall population of primary teachers in Europe, most of the respondents were female (66%) and approximately 2% preferred not to identify as either gender or preferred not to say.

Table 2 provides statistics relating to some of the key background characteristics of the sample. On average, across the EU countries, 50.2% of teachers were generalist teachers, 45.1% were specialist teachers, and the remaining 4.7% had another professional qualification (e.g. sport coach). With regards to teachers' years of experience in general or PE teaching, the majority of the respondents had up to 20 years of experience.

Statistical analysis

The European average rather than individual country data is presented in this paper given the primary goal of the DIPPE project to create an online platform intended to be used by primary school teachers and primary student teachers across different countries. The European average was calculated based on the data of the countries shown in Table 1 above on each given variable

Table 1. Number of respondents per country.

	<i>n</i>
Croatia	503
England	65
France	95
Ireland	137
Luxembourg	53
Netherlands	66
Scotland	58
Slovakia	51
Spain	142
Total	1170

Table 2. Respondents' profile.

	%
<i>Teacher professional qualification</i>	
generalist	50.2
specialist	45.1
other (e.g. sport coach)	4.7
<i>General teaching experience</i>	
<6 years	22.3
6–10 years	18.1
11–20 years	30.3
21–25 years	12.1
>25 years	17.3
<i>PE teaching experience</i>	
<6 years	25.7
6–10 years	17.4
11–20 years	29.6
21–25 years	11.0
>25 years	16.3

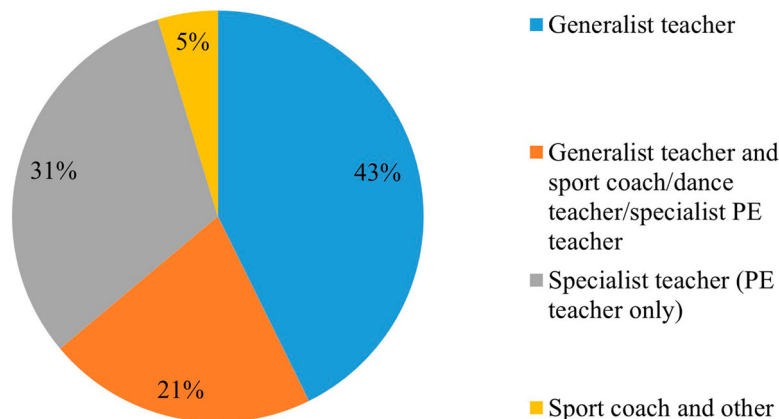
following a weighted approach, whereby the sample size of each country was not taken into account, i.e. each country contributed equally to the average. The statistical analysis of data included descriptive statistics and a series of bivariate tests (Mann-Whitney U tests, Kruskal-Wallis tests, and Spearman correlations) to examine the relationships between teachers' background characteristics and the reported levels of inclusion and engagement of children with AN in PE lessons and teacher competence in including children with AN in PE lessons. SPSS was used to perform the analysis and Microsoft Excel was used to generate the graphs.

Results

The study provided information on the practices of teachers related to inclusion of children with AN in PE in Europe and on the supports that teachers would like to receive to help them include children with AN in their PE lessons.

Who teaches PE in primary schools?

As can be seen in [Figure 1](#), 43% of respondents indicated that generalist teachers teach PE lessons in their schools, while 21% of respondents reported that generalist teachers along with sport coaches,

**Figure 1.** Professionals teaching PE in respondent schools.

dance teachers or specialist PE teachers teach PE lessons in their schools. Almost one-third (31%) of respondents indicated that PE lessons are taught by specialist PE teachers in their schools. Finally, only a small percentage indicated that PE lessons in their schools are taught by a sport coach or other staff.

Children with AN in PE lessons

More than 80% of teachers reported that they had up to five children with AN in their PE lessons (Table 3), while the most frequently experienced AN in PE lessons were motor and social (Table 4).

Importance of inclusion in primary PE

Teachers were asked to rate the importance of inclusion in PE in primary schools in their country, their school, and their own teaching. In all three cases, more than half of the respondents indicated that inclusion in PE is considered fairly or very important (Figure 2). More than half of the respondents (52.4%) rated inclusion in their own teaching as very important, while the respective percentages for the respondents' country and school were around 40%.

Inclusion in PE lessons: engagement and withdrawal

Respondents also provided information about the inclusion and engagement levels of children with AN in their PE lessons (Table 5). Most respondents (79.5%) reported that children with AN are either frequently or always included and engaged in their PE lessons. Further light was also shone on the frequency of children with AN being withdrawn from PE lessons (Table 5). Approximately 15% of respondents reported that children with AN are withdrawn from PE lessons to receive additional support in other subjects (e.g. mathematics), while approximately 10% of respondents reported that children with AN are withdrawn from PE lessons to receive specific support in PE.

Specific supports for children with AN in PE

As can be seen in Table 5, the percentage of teachers who indicated that specific support is provided to children with AN in PE lessons was 25.3%, while approximately one out of four respondents indicated that children with AN receive additional PE lessons or motor skills lessons. The most popular type of support among teacher responses was the additional support assistant or support personnel. While the majority (73.7%) were satisfied with this support (Figure 3), it is not clear if this involved withdrawing the child. A particularly compelling finding of the survey was that 91.3% of respondents ranked their satisfaction levels with teacher colleague support highly, while respondents were also mostly satisfied with the support of their PE subject associations. On the other hand, low proportions of teachers reported being either very or extremely satisfied with specific support provided by professionals such as occupational therapists or physiotherapists (Figure 3).

Table 3. Number of children with AN in PE class.

	%
1 child	28.7
2 children	24.6
3 children	15.6
4 children	9.5
5 children	5.9
more than 5 children	15.7

Table 4. Type of identified AN experienced within the current class.

	%
Motor	34.6
Social	34.0
Emotional	33.1
Physical	28.5
General learning	26.7
Multiple	23.8
Chronic diseases (e.g. diabetes, asthma)	22.6
Language	18.3
Obesity	17.7
Gender/mixed (boys and girls are taught together in PE lessons)	14.3
Other	4.3

Note: Types of AN are presented in descending order of percentages of respondents selecting each type.

Teacher competence to include children with AN

Over half of teachers (57.8%) rated their competence in including children with AN in PE lessons as either good or very good (Table 5).

Relationships of teacher characteristics with teacher competence and children's engagement in PE lessons

A series of bivariate analyses were conducted to investigate the extent to which teacher competence in including children with AN in their PE lessons and engagement levels of children with AN in PE lessons as reported by teachers were associated with teachers' gender, their professional qualification, and their general as well as PE teaching experience. Female teachers reported statistically significantly lower levels of competence in including children with AN in their PE lessons (mean rank = 514.28) compared to male teachers (mean rank = 574.70, $U = 125462.0$, $p = .001$, $\eta^2 = .010$), while females and males did not differ in their reported levels of inclusion and engagement of children with AN in their PE lessons (females' mean rank = 386.00, males' mean rank = 397.69, $U = 72415.5$, $p = .440$).

Teachers' reported levels of inclusion and engagement of children with AN in their PE lessons were not statistically significantly different across generalists, specialists, and those with other types of professional qualifications (e.g. sport coaches), $\chi^2(2) = 1.92$, $p = .380$, but teacher professional qualification was statistically significantly associated with reported levels of teacher competence in including children with AN in PE lessons yielding a moderate to large effect size; specialists reported the highest

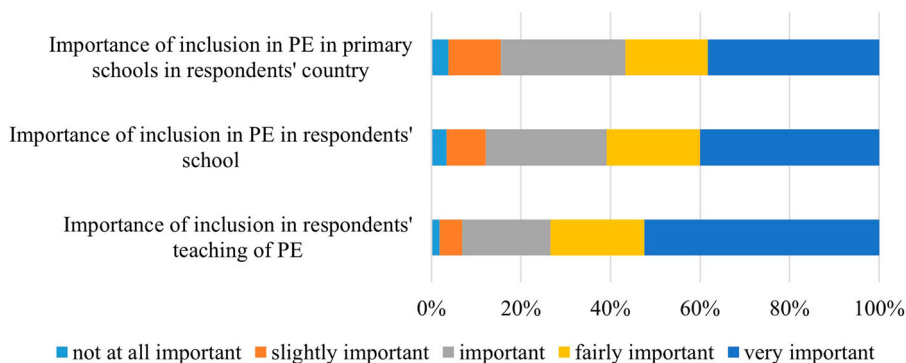
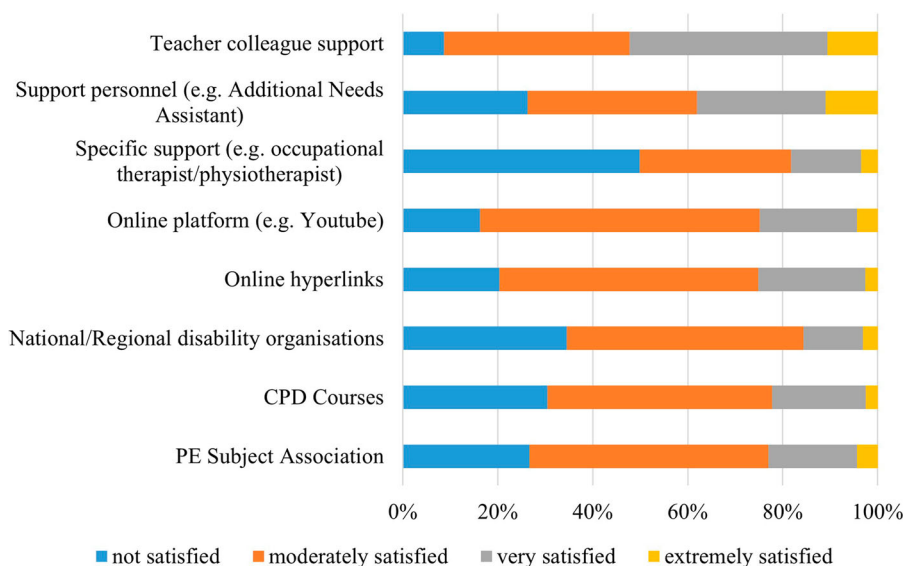
**Figure 2.** Perceived importance of inclusion in PE.

Table 5. Children with AN and PE lessons.

	%
Engagement levels of children with AN in PE lessons	
never included and engaged	0.1
rarely included and engaged	1.9
sometimes included and engaged	18.6
frequently included and engaged	49.5
always included and engaged	30.0
Withdrawal of children with AN from PE lessons for additional support in other subjects (e.g. mathematics)	14.6
Withdrawal of children with AN from PE lessons for specific support in PE	9.8
Specific support in PE lessons for children with AN	25.3
Type of specific support in PE lessons for children with AN	
additional support assistant	13.7
adapted physical activity assistant	1.9
additional class teacher	1.3
occupational therapist	0.9
physiotherapist	1.5
psychomotor assistant	0.6
inclusion disability officer/designated person from the local community/authority	0.3
other	0.6
Additional PE lessons/'motor skills lessons' for children with AN	26.5
Teacher competence to include children with AN in PE lessons	
very poor	2.1
poor	6.3
fair	33.8
good	44.7
very good	13.1

**Figure 3.** Satisfaction levels with supports to promote inclusion in PE teaching.

levels of competence among the three groups of teachers as defined by their professional qualifications, while generalists reported statistically significantly lower levels of competence compared to specialists as well as teachers with other qualifications, $\chi^2(2) = 68.55$, $p < .001$, generalists' mean rank = 381.99, specialists' mean rank = 528.73, others' mean rank = 471.80, $\eta^2 = .073$.

Finally, the levels of inclusion and engagement of children with AN in PE lessons that teachers reported were associated, though relatively weakly, with their experience in teaching in general and in teaching PE, with more experienced teachers reporting higher levels of children's inclusion

and engagement ($r_s = .073$, $p = .040$ and $r_s = .093$, $p = .009$). Teachers' competence levels were independent of their teaching experience in general or experience teaching PE ($r_s = .035$, $p = .240$ and $r_s = .040$, $p = .180$).

Teaching strategies to promote inclusion

As can be seen from the data in [Table 6](#), the two most popular teaching strategies to promote inclusion in PE lessons among teachers involved the modification of the rules of the game or activity and the modification of teaching styles. The use of the 'buddy system' strategy ranked third, on average, with 48.9% of teachers indicating that they use this strategy to promote inclusion in their PE lessons.

Guidance and supports: the online 'toolkit'

The questionnaire asked teachers to identify the aspects of AN that they would welcome guidance on and supports that might be beneficial for their planning for inclusion in PE lessons. In both cases, teachers could select up to five aspects of AN and supports, respectively. The most popular aspect of AN on which teachers would welcome guidance was children's motor needs ([Table 7](#)). More than half of teachers reported that they would welcome guidance on this aspect of AN. Emotional AN was the second most popular aspect of AN on which teachers would welcome guidance, while students' general learning, their language needs, and gender were among the least popular aspects of AN on which teachers would welcome guidance.

The most popular supports teachers considered beneficial for inclusion in their PE lessons were (i) video-based supports including practical case scenarios of teachers describing their work in supporting children with AN to reach their PE goals and (ii) video clips of children with AN working within PE classes ([Table 8](#)). More than half of teachers, in each case, considered such video-based supports important. Additionally, a considerable proportion of teachers sought templates of visual resources that they could use in PE lessons. On the other hand, supports such as guidelines on sharing information related to PE with parents of children with AN, hyperlinks to national PE Associations, and a DIPPE Twitter (online news and social networking) service hosting video clips of children with AN working within PE classes uploaded by teachers were each selected by less than 10% of teachers as preferred supports to be included in an online 'toolkit'.

Table 6. Teaching strategies to promote inclusion in PE lessons.

	%
Modifying the rules of the game/activity	66.0
Modifying teaching styles	50.3
Buddy system i.e. peer help for the child with AN	48.9
Modifications to equipment	46.4
Modifications to space	37.1
Station teaching i.e. children rotate in groups from one activity to the next	34.8
Small groups of children working together according to ability (parallel activity)	33.9
Whole-class teaching	27.7
Task cards e.g. images and task description, image only	21.9
Separate activities planned for an individual or group with AN (separate activity)	13.3
Reverse integration where participants with and without AN participate in a disability activity/sport (disability sport activity)	12.7
Zone areas exclusive to children with AN and their peer buddy	6.4
Other	5.8
Parental advocacy	4.1
None	3.2

Note: Teaching strategies are presented in descending order of percentages of respondents selecting each strategy.

Table 7. Aspects of AN teachers would welcome guidance on as part of an online PE inclusive practice toolkit.

	%
Motor	55.2
Emotional	44.8
Physical	43.3
Adapting activities	38.7
Social	37.7
Focus on planning for inclusion	28.1
Obesity	27.4
Adapting equipment	23.7
Chronic diseases (e.g. diabetes, asthma)	20.7
General learning	16.9
Language	10.2
Gender (where boys and girls are taught together in PE lessons)	7.3

Note: Aspects of AN are presented in descending order of percentages of respondents selecting each aspect of AN.

Discussion

Analysis of the data regarding teachers' practices related to inclusion of children with AN in primary PE, and the supports that teachers identified as useful in enhancing these practices allow us to draw some implications for practice.

Inclusion in primary PE: the professional practices of teachers and related issues

While the teachers' reporting of the inclusion and engagement levels of children with AN in their PE lessons (Table 5) could be regarded as an encouraging aspect of the landscape of PE for children with AN, the stark reality remains that only one-third of children are *always* included and engaged in PE lessons.

There is much debate in the literature about who teaches PE in primary schools (UNESCO 2014; Ní Chróinín and O'Brien 2019). As discussed earlier in the paper, generalist teachers, specialist teachers, and sport coaches each have a role in teaching PE in primary schools across Europe. Wilkinson and Penney (2016) suggest that the generalist teacher knows the children, especially those with AN, and will have unique understandings of children's strengths, weaknesses and, indeed, their medical history, unlike the external provider who may be an unqualified provider, a sport coach or a specialist

Table 8. Beneficial supports for planning for inclusion within PE lessons as part of an online PE inclusive practice toolkit.

	%
Video practical case scenarios of teachers who are supporting children with AN to reach their PE goals describing their work	60.3
Video clips of children with AN working within PE classes	55.5
Templates of visual resources e.g. visual cue cards related to activities in PE	38.3
Links to relevant organisations that offer online resources	30.8
Guidance on adapting activities	29.0
Guidance on planning for inclusion	26.3
Video/audio recordings of physiotherapist/psychomotor assistant/ occupational therapist advice	25.9
Images of children with AN working within PE classes led by teachers	17.9
Guidance on helpful books/journals/articles that support inclusion in PE lessons	17.9
Text-based case scenarios of teachers describing their work of supporting children with AN to reach their PE goals	17.6
Guidance on adapting equipment	16.3
Virtual community of practice for teachers to share their inclusive practices	13.8
Guidelines on sharing information related to PE with parents of children with AN	9.1
Hyperlinks to national PE Associations to direct you to relevant supports	8.8
A DIPPE Twitter (online news and social networking) service hosting video clips of children with AN working within PE classes uploaded by teachers	7.3

Note: Supports are presented in descending order of percentages of respondents selecting each support.

teacher. Others have argued that the specialist teacher is more likely to offer well-planned programmes that use recommended assessment strategies and provide opportunities for skill development for example (Fletcher and Mandigo 2012), which, arguably, can help them include children with AN more effectively. Sport coaches have also been recognised as having particular sport-specific expertise (Blair and Capel 2011), which can benefit programmes of PE. In this study, specialist teachers reported the highest levels and generalist teachers the lowest levels of competence in including children with AN in PE lessons, respectively, indicating that the content expertise that specialist teachers and those with qualifications specific to PE (e.g. sport coaches) have may be beneficial to their teaching of PE. Regardless of who teaches the lesson, though, building relationships with children with AN is emphasised in the literature (Overton, Wrench, and Garrett 2017; Dyson et al. 2018). An additional consideration has been raised: the level of collaboration between the class teacher and others teaching PE (Ní Chróinín and O'Brien 2019; Mangione et al. 2020). This collaboration is seen as key to ensuring that all children have quality PE experiences.

Some contextual factors are associated with teachers' practice including the number of children with AN in a class as well as the category of AN. Not surprisingly, in this study, the most frequently experienced AN in PE lessons that teachers identified were motor ones. Much attention has been given to children's lack of fundamental movement skills in recent years (Barnett et al. 2016; Bolger et al. 2018) and measurement of motor abilities and skills has also received attention due to its use for diagnostic purposes or educational monitoring (Behan et al. 2019; Scheuer, Herrmann, and Bund 2019). Significantly, such data can drive policy and practice to ensure that the DIPPE project and other relevant efforts go beyond merely embracing the principles of UDL but rather, guide and direct the provision of support tailored more specifically to meet particular needs throughout the development of the online 'toolkit'.

The social AN and emotional AN were also frequently experienced in PE lessons. Interestingly, Lirgg et al. (2017) in their study across primary and post-primary schools concluded that behavioural AN was the most difficult AN to incorporate. While other categories of AN (e.g. language) were less frequently reported, it is important to remember that each child matters regardless of the prevalence of the AN and it is the child's feelings of inclusion that are paramount (Haegele and Hodge 2016; Wilson, Theriot, and Haegele 2020). The unpredictability of the school context suggests that while teachers will benefit from general guidance, specific readily accessible guidance and support are crucial.

This study provides evidence of some practices that may run counter to the principle of inclusion. One example of this is the frequency of children with AN being withdrawn from PE lessons, raising the question of equitable opportunities in PE for all children (UNESCO 2015b; Lieberman, Brian, and Grenier 2019). Significant also is the proportion of children with AN withdrawn from PE lessons to receive specific support in PE. Fitzgerald (2012) called on teachers to probe the isolation of children with AN for PE support, however useful this support may be, and to highlight the potential for enhanced social development of the child within the PE lesson. The importance of social learning (NCSE 2010) through PE lessons (Haegele and Hodge 2016) was also highlighted prompting reflection on how the child is missing out on the social dimension when withdrawn from PE lessons. However, Healy, Msetfi, and Gallagher (2013) reported on the practice of students seeking exclusion constituting a reason why the teacher removes the student from the PE lesson. Nevertheless, they argue that some children find PE to 'be an ideal place for making and interacting with friends' (Healy, Msetfi, and Gallagher 2013, 41).

In order to establish what specific supports teachers of children with AN draw on to enhance inclusion, this study shed light on the frequency of the support of the additional support assistant amongst others. It is not clear from the findings of this study, however, if this support also involved withdrawing the child, as discussed earlier, or if the teacher provided the direction for the assistant within the PE lesson. While Logan (2006) welcomed the role of the additional support assistant in inclusion as an integral part of the education system, she argued that the class teacher needed to provide specific direction highlighting the collaboration between the teacher and support personnel

discussed earlier in this paper. Additionally, the timing of this support could be crucial. Marron, Murphy, and O’Keeffe (2013) noted that the additional support assistant was assigned other duties at certain times of the day, sometimes during the PE lesson. While this study provides some evidence related to the role of the additional support assistants, further research to probe the specifics of their role in the PE lesson is necessary.

The high satisfaction levels with teacher colleague support found in this study might point to the importance of upskilling teachers so that sharing of information and experiences is promoted. The employment of primary teachers with a particular expertise in PE could enhance the knowledge base. Clohessy, Bowles, and Ní Chróinín (2020) argue that this specialist knowledge may be present in a school but needs to be shared perhaps by means of class swapping, resulting in a teacher with deeper knowledge teaching PE to a number of classes. Given the reported satisfaction with the support of PE subject associations, it could be argued that it is equally important that this support is offered by those with particular expertise. It is not clear from the study if poor satisfaction levels with support from physiotherapists and occupational therapists can be attributed to anything other than that this support not being available to teachers in many countries.

Other insights provided by the study include teachers’ rating of their competence level and use of a range of practices to include all children in PE lessons. A positive element of this finding is teachers’ openness in expressing their lack of competence and, at the same time, identifying the support they require very clearly. Although the rating of competence is somewhat encouraging, there is still a considerable proportion of teachers who rated their competence as fair or poor. Acknowledging the statistical significance between qualification and competence reported earlier in the paper, it is important to highlight the need for ‘providing serving teachers with opportunity to continually develop and extend their competencies’ (McGrath, Crawford, and O’Sullivan 2019, 3) regardless of their initial qualifications. However, this is even more crucial given the result that generalist teachers reported feeling less competent to include children with AN in their PE lessons. The assertion of Lirgg et al. (2017) that teachers, although trying to include, are struggling and welcome guidance is noteworthy and is corroborated by the findings of this study. An and Meaney (2015), Klein and Hollingshead (2015) and McGrath, Crawford, and O’Sullivan (2019) applauded the value of professional development for teachers with a focus on inclusion. Such professional development can build competence levels further and expose more teachers to strategies to include children with AN regardless of their initial qualification. With regard to reported levels of competency in this study, although males reported a higher level of competence than females, it is interesting that there was no significant difference between their perception of inclusion and engagement of children with AN in their PE classes.

Supports that teachers would welcome

The study asked teachers to identify aspects of AN on which they would welcome guidance as part of an online ‘toolkit’ and supports that might be beneficial for planning for inclusion. As the most popular aspect of AN on which teachers would welcome guidance was children’s motor needs, it is probably reasonable to conclude that support for children with these needs will be a crucial element when considering support for teachers. However, as Fitzgerald (2012) and Haegele and Hodge (2016) argued, the motivation of the teacher needs to be probed to ensure that the emphasis is on including the child more fully, whereby the child’s motor needs may be the focus, but the social domain is not forgotten. Indeed, given that teachers also sought support for children with emotional needs, this guidance related to children’s affective development will be crucial.

Teachers identified video support and visual resources to support children with AN to reach their PE goals as particularly important for their inclusive practices, concurring with the recommendations of Sweeney and Coulter (2008). Hence, it could be argued that teachers need to see quality PE experiences for all children. Despite the cost implications and ethical considerations of recording children

to produce video materials, which can be sensitive, such demands must be listened to by policy makers and stakeholders.

A number of limitations of the present study should be acknowledged and taken into account in the interpretation of the results. Given the broad reach of the questionnaire across several countries, it was considered best to limit the type of questions to close-ended. Despite the effort of all project partners to agree on language consistent across countries, there may be nuances lost in translation. Also, information collected by the respondents was based on self-reports and, thus, is prone to self-report response bias. Additionally, while the study is European not all European countries are represented in the sample involved in the analysis; hence, caution is advised in interpreting the data as representative of any one or a combination of European countries.

Conclusion

The results from this collaborative Erasmus+ project provide the first account of the professional practices of teachers related to inclusion of children with AN in primary PE, and highlight further supports that teachers identified to enhance their practice. The results have a number of implications for the PE lesson as experienced by children with AN, which offer a gateway to long-term physical activity practices.

Firstly, teachers should be informed of the results of this study in particular where it reveals that just 30% of children are always included and engaged in PE lessons. This can serve to prompt them to reflect on children's inclusion and engagement in PE lessons mindful of the multiple means of engagement, multiple means of representation and multiple means of action and expression as those are described within the UDL framework.

Secondly, the results have informed the development of one particular support: the online 'toolkit' providing a central point of access to a range of supports (see <https://www.dippe.lu/>). This work has been completed as part of the DIPPE project. The availability of such support needs to be disseminated widely. At the time of writing, dissemination of the work is ongoing with piloting of the professional development workshop linked to the 'toolkit'. Use of existing video material, one of the supports identified in the study by teachers, has been included in the 'toolkit' where possible. This work can inform the development of further support to include children with AN in PE lessons reflecting the finding of McGrath, Crawford, and O'Sullivan (2019) that teachers require 'PE specific information and resources for inclusion' (11). Acknowledging the challenges of creating and providing bespoke video support, if teachers' voices are to be heard, investment in the development of these materials is crucial.

Thirdly, a further insight gained from the study was related to the importance of working collaboratively (Grenier et al. 2020) with teacher colleagues (Clohessy, Bowles, and Ní Chróinín 2020), additional support assistants and even professionals such as physiotherapists and occupational therapists to enhance inclusion and avoid withdrawal. Such collaborative approaches need to be underpinned by an exploration of the potential of the UDL framework.

While the study has informed the development of an online 'toolkit' (see <https://www.dippe.lu/>) offering support to teachers, a comparison of teacher practices related to inclusion in different school settings would be interesting and valuable. Collecting information from children with AN themselves regarding their feelings of belonging, inclusion and engagement would also be an avenue that future research could pursue. Further research is merited on the practices of sports coaches and their contribution to a balanced (rather than sports specific) PE programme. Dissemination of the online 'toolkit' across schools, countries and even continents should be a priority, underpinned by a belief in the strength of a collaborative process and partnerships to design, construct and disseminate support. The ultimate goal is to ensure that a child is fully included in PE lessons always, a human right.

Acknowledgements

The authors gratefully acknowledge the contribution of the project partners for the data collection and the project outputs: Sandra Heck (University of Luxembourg, Luxembourg); Nicola Carse, Paul McMillan (University of Edinburgh, Scotland); Jana Labudová, Dana Masaryková (Trnava University, Slovakia); Sanne de Vries, Frank Jacobs, Hans van Ekdom, Esther Van Rijn-Handels (The Hague University for Applied Sciences, Netherlands), José Ignacio Barbero-González, Nicolás Bores-Calle, Alfonso García-Monge, Gustavo González-Calves, Lucio Martínez-Alvarez (University Valladolid, Spain); Jackie Gallagher, Catherine Carty (Munster Technological University, Ireland); Elinor Steele, Hannah Vecchione (European Physical Education Association, Luxembourg).

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

The study data was part of the Disentangling Inclusion in Primary Physical Education (DIPPE) Erasmus+ project, funded by the European Union's Erasmus+ scheme [No. 2018-1-LU01-KA201-037316]. <https://ec.europa.eu/programmes/erasmus-plus/projects/eplu-project-details/#project/2018-1-LU01-KA201-037316>

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References

- An, J., and Karen S. Meaney. 2015. "Inclusion Practices in Elementary Physical Education: A Social-Cognitive Perspective." *International Journal of Disability, Development and Education* 62 (2): 143–157. doi:10.1080/1034912X.2014.998176.
- Barnett, L. M., D. Stodden, K. E. Cohen, J. J. Smith, D. R. Lubans, M. Lenoir, S. Iivonen, et al. 2016. "Fundamental Movement Skills: An Important Focus." *Journal of Teaching in Physical Education* 35 (3): 219–225. doi:10.1123/jtpe.2014-0209.
- Behan, S., S. Belton, C. Peers, N. E. O'Connor, and J. Issartel. 2019. "Moving Well-Being Well: Investigating the Maturation of Fundamental Movement Skill Proficiency Across Sex in Irish Children Aged Five to Twelve." *Journal of Sports Sciences* 37 (22): 2604–2612. doi:10.1080/02640414.2019.1651144.
- Blair, R., and S. Capel. 2011. "Primary Physical Education, Coaches and Continuing Professional Development." *Sport, Education and Society* 16 (4): 485–505. doi:10.1080/13573322.2011.589645.
- Block, M. E., and I. Obrusnikova. 2007. "Inclusion in Physical Education: A Review of the Literature from 1995-2005." *Adapted Physical Activity Quarterly* 24: 103–124. doi:10.1123/apaq.24.2.103.
- Bolger, L. E., L. A. Bolger, C. O' Neill, E. Coughlan, W. O'Brien, S. Lacey, and C. Burns. 2018. "Age and Sex Differences in Fundamental Movement Skills Among a Cohort of Irish School Children." *Journal of Motor Learning and Development* 6 (1): 81–100. doi:10.1123/jmld.2017-0003.
- CAST (Center for Applied Special Technology). 2018. "Universal Design for Learning Guidelines Version 2.2." <https://udlguidelines.cast.org/>.
- Clohessey, L., R. Bowles, and D. Ní Chróinín. 2020. "Playing to Our Strengths: Generalist Teachers' Experiences of Class Swapping for Primary Physical Education." *European Physical Education Review* 26 (2): 571–586. doi:10.1177/1356336X19877195.
- Crawford, S. 2011. "An Examination of Current Adapted Physical Activity Provision in Primary and Special Schools in Ireland." *European Physical Education Review* 17 (1): 91–109. doi:10.1177/1356336X11402260.
- Crawford, S., R. O'Reilly, and N. Flanagan. 2012. "Examining Current Provision, Practice and Experience of Initial Teacher Training Providers in Ireland Preparing Pre Service Teachers for the Inclusion of Students with Special Education Needs in Physical Education Classes." *European Journal of Adapted Physical Activity* 5 (2): 23–44. doi:10.5507/euj.2012.007.
- "Disentangling Inclusion in Primary Physical Education". Accessed 28 October 2021. <https://www.dippe.lu/>.
- Dyson, B., J. Cowan, B. Gordon, D. Powell, and B. Shulruf. 2018. "Physical Education in Aotearoa New Zealand Primary Schools: Teachers' Perceptions and Policy Implications." *European Physical Education Review* 24 (4): 467–486. doi:10.1177/1356336X17698083.

- European Agency for Development in Special Needs Education. 2010. "Teacher Education for Inclusion-International Literature Review. Odense, Denmark: European Agency for Development in Special Needs Education." <https://www.european-agency.org/sites/default/files/TE4I-Literature-Review.pdf>.
- Fitzgerald, H. 2012. "'Drawing' on Disabled Students' Experiences of Physical Education and Stakeholder Responses." *Sport, Education and Society* 17 (4): 443–462. doi:10.1080/13573322.2011.609290.
- Fletcher, T., and J. Mandigo. 2012. "The Primary Schoolteacher and Physical Education: A Review of Research and Implications for Irish Physical Education." *Irish Educational Studies* 31 (3): 363–376. doi:10.1080/03323315.2012.710063.
- Grenier, M., M. Patey, L. Lieberman, and A. Brian. 2020. "A Collaborative Approach for Engaging Students with Severe Disabilities in Physical Education." *European Journal of Adapted Physical Activity* 13 (2): 1–15. doi:10.5507/euj.2020.007.
- Haegele, J. A., and S. Hodge. 2016. "Disability Discourse: Overview and Critiques of the Medical and Social Models." *Quest* 68 (2): 193–206. doi:10.1080/00336297.2016.1143849.
- Haegele, J. A., and S. Sutherland. 2015. "Perspectives of Students with Disabilities Toward Physical Education: A Qualitative Inquiry Review." *Quest* 67 (3): 255–273. doi:10.1080/00336297.2015.1050118.
- Healy, S., R. Msetfi, and S. Gallagher. 2013. "'Happy and a Bit Nervous': The Experiences of Children with Autism in Physical Education." *British Journal of Learning Disabilities* 41 (3): 222–228. doi:10.1111/bld.12053.
- Kennedy, W., and J. Yun. 2019. "Universal Design for Learning as a Curriculum Development Tool in Physical Education." *Journal of Physical Education, Recreation & Dance* 90 (6): 25–31. doi:10.1080/07303084.2019.1614119.
- Klein, E., and A. Hollingshead. 2015. "Collaboration Between Special and Physical Education: The Benefits of a Healthy Lifestyle for All Students." *TEACHING Exceptional Children* 47 (3): 163–171. doi:10.1177/0040059914558945.
- Lieberman, L. J., A. Brian, and M. Grenier. 2019. "The Lieberman–Brian Inclusion Rating Scale for Physical Education." *European Physical Education Review*, 25 (2): 341–354. doi:10.1177/1356336X17733595.
- Lieberman, L. J., and M. Grenier. 2019. "Infusing Universal Design for Learning Into Physical Education Professional Preparation Programs." *Journal of Physical Education, Recreation & Dance* 90 (6): 3–5. doi:10.1080/07303084.2019.1615790.
- Lirgg, C. D., D. R. Gorman, M. D. Merrie, and C. Shewmake. 2017. "Exploring Challenges in Teaching Physical Education to Students with Disabilities." *PALAESTRA* 31 (2): 13–18.
- Logan, A. 2006. "The Role of the Special Needs Assistant Supporting Pupils with Special Educational Needs in Irish Mainstream Primary Schools." *Support for Learning* 21 (2): 92–99. doi:10.1111/j.1467-9604.2006.00410.x.
- Mangione, J., M. Parker, M. O'Sullivan, and M. Quayle. 2020. "Mapping the Landscape of Physical Education External Provision in Irish Primary Schools." *Irish Educational Studies* 39 (4): 475–494. doi:10.1080/03323315.2020.1730218.
- Marron, S., F. Murphy, and M. O'Keeffe. 2013. "Providing 'Good Day' Physical Education Experiences for Children with SEN in Mainstream Irish Primary Schools." *REACH Journal of Special Needs Education in Ireland* 26 (2): 92–103. <https://reachjournal.ie/index.php/reach/article/view/71>.
- McGrath, O., S. Crawford, and D. O'Sullivan. 2019. "It's a Challenge': Post Primary Physical Education Teachers' Experiences of and Perspectives on Inclusive Practice with Students with Disabilities." *European Journal of Adapted Physical Activity* 12 (1): 1–14. doi:10.5507/euj.2018.011.
- Meyer, A., D. H. Rose, and D. Gordon. 2014. *Universal Design for Learning: Theory and Practice*. Wakefield: CAST Professional Publishing.
- NCSE (National Council for Special Education). 2010. *Literature Review of the Principles and Practices Relating to Inclusive Education for Children with Special Educational Needs*. Trim: NCSE. Accessed 29 September 2021. https://ncse.ie/wp-content/uploads/2014/10/NCSE_Inclusion.pdf.
- Ní Chróinín, D., and N. O'Brien. 2019. "Primary School Teachers' Experiences of External Providers in Ireland: Learning Lessons from Physical Education." *Irish Educational Studies* 38 (3): 327–341. doi:10.1080/03323315.2019.1606725.
- Overton, H., A. Wrench, and R. Garrett. 2017. "Pedagogies for Inclusion of Junior Primary Students with Disabilities in PE." *Physical Education and Sport Pedagogy* 22 (4): 414–426. doi:10.1080/17408989.2016.1176134.
- Ramberg, J., and A. Watkins. 2020. "Exploring Inclusive Education Across Europe: Some Insights from the European Agency Statistics on Inclusive Education." *Forum for International Research in Education* 6 (1): 85–101.
- Rekaa, H., H. Hanisch, and B. Ytterhus. 2019. "Inclusion in Physical Education: Teacher Attitudes and Student Experiences. A Systematic Review." *International Journal of Disability, Development and Education* 66 (1): 36–55. doi:10.1080/1034912X.2018.1435852.
- Scheuer, C., C. Herrmann, and A. Bund. 2019. "Motor Tests for Primary School Aged Children: A Systematic Review." *Journal of Sports Sciences* 37 (10): 1097–1112. doi:10.1080/02640414.2018.1544535.
- Sweeney, T., and M. Coulter. 2008. "Teachers' Perspectives on the Inclusion of Pupils with Special Education Needs in the Mainstream Physical Education Class." *Proceedings of the Fourth Physical Education, Physical Activity and Youth Sport Forum (PE PAYS)*, 36–45.
- UNESCO (United Nations Educational, Scientific and Cultural Organization). 1994. *The Salamanca Statement and Framework for Action on Special Needs Education*. Paris: UNESCO. Accessed 29 September 2021. <https://www.european-agency.org/sites/default/files/salamanca-statement-and-framework.pdf>.

- UNESCO (United Nations Educational, Scientific and Cultural Organization). 2005. *Guidelines for Inclusion: Ensuring Access to Education for All*. Paris: UNESCO. Accessed 29 September 2021 http://www.ibe.unesco.org/sites/default/files/Guidelines_for_Inclusion_UNESCO_2006.pdf.
- UNESCO (United Nations Educational, Scientific and Cultural Organization). 2014. *World-Wide Survey of School Physical Education*. Paris: UNESCO. Accessed 29 September 2021. <http://unesdoc.unesco.org/images/0022/002293/229335e.pdf>.
- UNESCO (United Nations Educational, Scientific and Cultural Organization). 2015a. *International Charter of Physical Education, Physical Activity and Sport*. Paris: UNESCO. Accessed 29 September 2021. <https://unesdoc.unesco.org/ark:/48223/pf0000235409>.
- UNESCO (United Nations Educational, Scientific and Cultural Organization). 2015b. *Quality Physical Education (QPE): Guidelines for Policy-Makers*. Paris: UNESCO. Accessed 29 September 2021. <https://en.unesco.org/inclusivepolicylab/sites/default/files/learning/document/2017/1/231101E.pdf>.
- UN (United Nations). 1989. *Convention on the Rights of the Child*. New York: Office of the United Nations.
- UN (United Nations). 1993. *Standard Rules on the Equalisation of Opportunities for Persons with Disabilities*. New York: Office of the United Nations.
- Welch, M. 1996. "Teacher Education and the Neglected Diversity: Preparing Educators to Teach Student with Disabilities." *Journal of Teacher Education* 47: 355–366.
- Wilkinson, S. D., and D. Penney. 2016. "The Involvement of External Agencies in Extra-Curricular Physical Education: Reinforcing or Challenging Gender and Ability Inequities?" *Sport, Education and Society* 21 (5): 741–758. doi:10.1080/13573322.2014.956714.
- Wilson, W. J., E. A. Theriot, and J. A. Haegle. 2020. "Attempting Inclusive Practice: Perspectives of Physical Educators and Adapted Physical Educators." *Curriculum Studies in Health and Physical Education* 11 (3): 187–203. doi:10.1080/25742981.2020.1806721.