The use of the 'Routes for Learning' assessment for learners with profound and multiple learning difficulties (PMLD) in England and Wales

Hannah Weston and Jean Ware

Background

Who are learners with profound and multiple learning difficulties (PMLD)?

There are a range of definitions of PMLD (see Bellamy, 2010), but Routes for Learning (RfL) itself defines learners with PMLD as those who have:

- a profound cognitive impairment/ learning difficulty, leading to significant delay in reaching developmental milestones. Such learners will be operating overall at a very early developmental level and will also display at least one of the following:
  - significant motor impairments
  - significant sensory impairments
  - complex health care needs/ dependence on technology.
- The inter-relationship of these disabilities increases the complexity of need, in turn affecting all areas of learning. (Welsh Assembly Government (WAG), 2006, p51)

Critically, then, learners with PMLD have a profound level of cognitive impairment and also at least one other severe impairment.

Assessment of learners with PMLD

Assessment of people with PMLD is acknowledged to be particularly difficult, due to the impact of sensory and motor impairments, epilepsy and general health on both learning and performance (Ware and Donnelly, 2004). Assessment of learning/ progress is especially problematic. According to Ware and Donnelly, teachers responding to a 2002 survey conducted by LEA advisers in Wales reported that the assessments then available (eg InStep, Equals and 'p' levels) were insufficiently fine-grained for pupils with PMLD. One alternative is to use a developmental assessment designed for typically developing infants or young children such as the Bayley Scales (Bayley, 2006) or the Uzgiris and Hunt Scales (Uzgiris and Hunt, 1975). Visser et al (2012) recently reviewed the suitability for use with children with SEN of standardised developmental assessment instruments intended for young typically developing children. The review suggests that, although some instruments may be suitable for some children with SEN, there are likely to be serious limitations to using such instruments with learners with PMLD (Visser et al, 2012). In addition to the limitations mentioned by Visser et al, what evidence there is suggests that development may be very uneven for people with PMLD (eg Kahn, 1976) and sensory impairments may make the acquisition of some early key skills much more difficult than for a typically developing infant (Goldbart and Ware, 2015). Performance is also likely to be very variable from day to day, in part due to health conditions, making assessment of new learning problematic (Ware and Donnelly, 2004). This means that, although they may sometimes be the best tools available, developmental checklists can provide at best a rough guide for assessing learners with PMLD, when an accurate assessment is a vital foundation for facilitating progress. Routes for Learning was designed to address this issue.

What is Routes for Learning?

Routes for Learning (RfL) (WAG, 2006) is a Welsh–English bilingual assessment tool for learners with Profound and Multiple Learning Difficulties (PMLD). RfL follows what is basically a developmental model, although particular attention is paid to

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the potentially different developmental trajectories of pupils with sensory and physical impairments in addition to profound intellectual disabilities. It was developed in consultation with schools in Wales by a small group led by the SEN officer for the Qualifications and Curriculum Authority for Wales (ACCAC) in response to a need identified by teachers for a tool which would enable them to assess the progress of learners with multiple disabilities operating at the earliest developmental levels (Ware and Donnelly, 2004). In addition to the ACCAC SEN officer, the group consisted of four experienced head teachers/teachers, and the first author, all of whom had experience of teaching pupils with PMLD.

There were several stages in the development of the RfL materials. The 'typical development' of infants and young children without disabilities was taken as a starting point. Key milestones which provide the basis for further learning were then identified in the areas of communication and cognition. Funding and time constraints meant that the development group decided to limit RfL to these two major developmental areas, rather than including other areas, such as physical development. The group actively tried to consider the complexities of the development of learners with PMLD and whether this would impact on the sequence. In addition the materials were conceptualised as providing flexible 'routes' between the key milestones. Some of the possible pathways between milestones are included on the Routemap. The group then thought about how learners could show that they had achieved the various steps, taking account of visual/auditory and other possible barriers. Schools in Wales were invited to consider the definitions of the different steps and provide exemplar video. The assessment booklet was then compiled. This outlines both everyday situations in which the various behaviours can be observed, and explains how specific assessment situations can be set up; giving where possible several options for each behaviour, which take account of possible sensory and physical impairments.

The budget for the development of RfL was extremely limited, and, as a consequence, it was not possible to conduct systematic trialling of items, for example to test the assumption that developmental trajectories might be different for people with sensory or physical impairments in addition to profound

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intellectual disabilities. However, prior to being published the materials were trialled in 15 schools across Wales (Donnelly, 2005). The response to the materials was very positive overall. Schools felt that, unlike other materials available, they took account of sensory and physical impairments. Many schools found the materials useful in pinpointing learners' current developmental levels. This 'enabled them to move on learners who had become "stuck" and target more appropriate/relevant learning outcomes across the curriculum' (Donnelly, 2005). Schools also reported that the Routemap enabled them to see when learners were able to demonstrate a behaviour but where further accuracy, refinement and generalisation needed to be given specific attention. Despite the limitations outlined above, Imray and Hinchcliffe (2014) believe that RfL represents a significant step forward in the assessment of learners with PMLD. They describe it as: 'The first UK systematised attempt to break away from a linear development model for those with profound learning difficulties post-National Curriculum', noting that it 'should be looked upon as a significant and perhaps seminal piece of work' (Imray and Hinchcliffe, 2014, p29). They describe it as concise, readable and academically rigorous.

As originally distributed to schools in Wales, RfL consisted of a pack containing:

- Routemap poster
- additional guidance booklet
- assessment booklet, examples sheet
- Routemap planner
- DVD of example behaviours
- CD with editable files of the assessment booklet

Additionally, when RfL was first introduced, training days were run throughout Wales to introduce it to staff in the relevant schools.

During the ten years since it was first published, RfL has been widely adopted for use with learners with PMLD, not only in Wales, but in England, Ireland and further afield. In particular, an assessment called 'Quest for Learning' (Council for the Curriculum, Examinations and Assessment (CCEA), 2007) was developed by the Department for Education in Northern Ireland, much of which consists of a rebadging of the RfL materials (possible because they are

Crown Copyright). In 2012 RfL was included as part of a module on assessment in online training materials (Department for Education, 2016). RfL has been translated into a number of European Languages; however, the extent to which it is in use in other European contexts is not known.

At the beginning of 2016 the current authors decided to undertake a survey of practitioners who were using RfL in Wales and elsewhere, in order to identify the ways in which it was being used, and any difficulties practitioners might have experienced in using it. Coincidentally, just as the survey was being completed, the Welsh government decided to conduct an evaluation of RfL as part of its work in implementing the review of the curriculum in Wales by Professor Graham Donaldson. Subsequently, work has been undertaken to revise some aspects of RfL, and the revised materials are likely to be published on the Welsh Government's website.

Previous research on Routes for Learning

There has been very little published research on RfL. In a small scale study in one school, Van Walwyk identifies the following advantages:

- Milestones seem highly relevant to learners with PMLD

- RfL promotes detailed observation of pupils, giving ideas as to what to look for both as part of everyday routines and as specifically set up 'assessment activities'

- As the materials are developmentally based they provide a shared framework which can unite teachers and therapists who may be coming from different theoretical backgrounds

- Use of a structured framework can ensure that professionals using the package have a shared frame of reference over time

- Detailed guidance provided would offer good support to staff inexperienced in working with children who have PMLD

    (Van Walwyk, 2011)

Hogg reports that she introduced an adapted version of RfL in the school where she works. The adaptation was made in order to provide quantitative data for Ofsted and consists of four 'steps' for each RfL box 'working on, evident, achieved and generalised'. According to Hogg, this adaptation was accepted by Ofsted, who graded the school outstanding in the inspection following the introduction of RfL (Hogg, 2014).

In a more in depth study, McDermott conducted case studies of the implementation and use of RfL in two special schools (McDermott, 2014; McDermott and Atkinson, 2016). McDermott concludes that her research has 'illustrated the value of the RfL materials in supporting and understanding of the ways in which children and young people with PMLD develop' (McDermott, 2014, p178) McDermott's research highlights the contribution of RfL to encouraging a focused and evidence-based approach to tracking progress and supporting learning, and also to the assessment and sharing of progress. According to McDermott, the RfL assessment approach also recognises the lateral progress of students with PMLD. 'The research indicates that RfL is a strategy which enables pupils with PMLD to have their needs identified and met, to be included and to have their communication "heard". …This study indicates that because staff members can see progress more effectively through using the RfL materials they have a more confident and enthusiastic approach with children and this may well impact on the motivation of both staff and pupils. The research indicates that having their progress recognised using RfL and celebrated may result in an increase in pupil engagement' (McDermott, 2014, pp179).

In addition, according to McDermott, the study draws attention to the importance of schools having at least some staff who are trained in working with students with PMLD as her findings suggest that this can facilitate implementation of RfL. She recommends that schools should have a RfL champion who 'can offer advice and opportunities to observe and share practice' (p179).

Both Van Walwyk and McDermott point out that one problem with RfL is the lack of a data recording system which would enable schools to use data from RfL for summative assessment and school level reporting and self-evaluation. However, as Van Walwyk also points out a number of schools have devised such systems for themselves.

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The survey

Method

Questions for the survey were compiled with the help of four members of the original RfL development group, who responded to a draft with suggestions for improvements. Areas covered included: the assessment instruments being used by the school; numbers of children with whom RfL was being used; ways in which it was being used; training issues; the advantages and disadvantages of RfL; and any specific areas of difficulty. Schools not using RfL were invited to respond to questions on whether they had considered using it and the reasons why an alternative assessment had been selected.

The initial aim was to survey all schools catering for learners with PMLD in England and Wales. As with previous attempts to survey schools catering for learners with severe and profound learning difficulties in England and Wales (Male and Rayner, 2007) we encountered difficulties in identifying all relevant schools. In Wales, an up to date list of special schools is available on the government website (http://gov.wales/statistics-and-research/address-list-of-schools/?lang=en). This enabled us to identify 39 special schools in Wales, of which about 30 appeared likely to be catering for pupils with PMLD. However, there is no such central database of Special Schools in England (Male and Rayner, 2007). Male and Rayner identified 321 special schools catering for pupils with SLD/ PMLD. In both England and Wales there are units within mainstream schools for pupils with SLD/ PMLD in some local authorities, in addition to the provision in special schools, but in neither country is there a comprehensive list of such provision. This makes surveying unit provision for pupils with PMLD a particular challenge.

Initially, all 39 special schools in Wales were contacted by telephone, and attempts were also made to contact special schools in England listed in Rayner's database (which he shared with us) by telephone. There was little response to the survey as a result of these calls. Head teachers of the 39 special schools in Wales were then approached through an email including SurveyMonkey links to Welsh and English versions of the questionnaire. The survey was also posted on the SLD Forum (an email forum for teachers of pupils with SLD/ PMLD) and

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advertised via PMLD Link (a specialist website and journal, for those concerned with people with PMLD). Seventy-three responses were received as a result of this combined strategy (twelve from Wales, 57 from England, and four from further afield). Three further responses were received from attendees at the Wales special school headteachers' conference, making an overall total of 76 (15 from Wales and 57 from England, plus three from Ireland and one from Australia. One further response was received from England by email after the online survey had closed, making an overall total of 77 responses. The study conformed to the British Educational Research Association ethical guidelines (BERA, 2018) and was approved by the Ethics Committee of the College of Business, Law, Education and Social Studies, Bangor University.

Results

Posting the survey via the SLD forum and PMLD Link considerably increased the response rate. However, as subscribers to both are individuals rather than schools, it raised the possibility that there would be more than one response from some schools. Respondents were therefore asked to give the name of their school so that cases where more than one teacher from a school had responded could be identified. All but one respondent gave this information, enabling five pairs of duplicate responses to be identified. Duplicate responses were combined as follows.

For the questions which related to the school as a whole (eg number of pupils with whom RfL was being used in the school) each pair were then combined into one overall school response; while for those questions where the individual opinion of the respondent was requested (eg the respondent's view of the advantages and disadvantages of RfL) both responses were retained. After duplicates had been combined, there were responses from a total of 72 schools (15 from Wales, 53 from England, three from Ireland, one from Australia) (See *Table 1*). All 15 Welsh schools and 36 of the English schools were local authority special schools, 13 were specialist schools or academies, and four were independent special schools.

Table 1: Summary of responses received by country, school type, and use of RfL

	No. of schools	Local Authority Schools	Specialist schools/ academies	Independent schools	Using RfL	Not Using RfL
England	53	36	13	4	40	13
Wales	15	15	0	0	13	2
Other	4	n/a	n/a	n/a	4	0
Total	**72**	**51**	**13**	**4**	**57**	**15**

Both the lack of information about the total number of schools and units making provision for pupils with SLD/PMLD in England and Wales, and the way in which the survey was circulated mean that calculating an accurate overall response rate was not possible. It was, however, clear that there was a relatively high response rate from Wales, with 13/39 special schools (ie 33%) and two units responding.

Figure 1 shows the range of assessments used. From this it can be seen that slightly more of the schools responding to the survey (57/72; 79%) are using RfL than the P Scales (52/72) to assess pupils with PMLD. RfL is being used by 13/15 (87%) of schools and units in Wales and 40/53; 77%) in England, while 43/53 (83%) in England and 9/13(69%) in Wales are using the P Scales. Given that there are approximately eight times as many schools in England which cater for learners with PMLD and that reporting using the 'P Scales' was statutory at that time in England, this suggests that the survey may have been preferentially responded to by schools using RfL. All 53 schools which used RfL also used other assessments; similarly, no school reported using only the P Scales. Forty-six schools are using both RfL and the P Scales. Given that no school stated that they catered exclusively for pupils with SLD and PMLD, and that the literature indicates that no one assessment tool is entirely satisfactory with regard to assessing learners with PMLD, it is not surprising that schools are using more than one assessment tool. It is also possible that schools may feel the need to use particular assessment tools for accountability purposes, although they find other tools more useful for assessing pupils' learning. This interpretation is given

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Figure 1: Assessments used
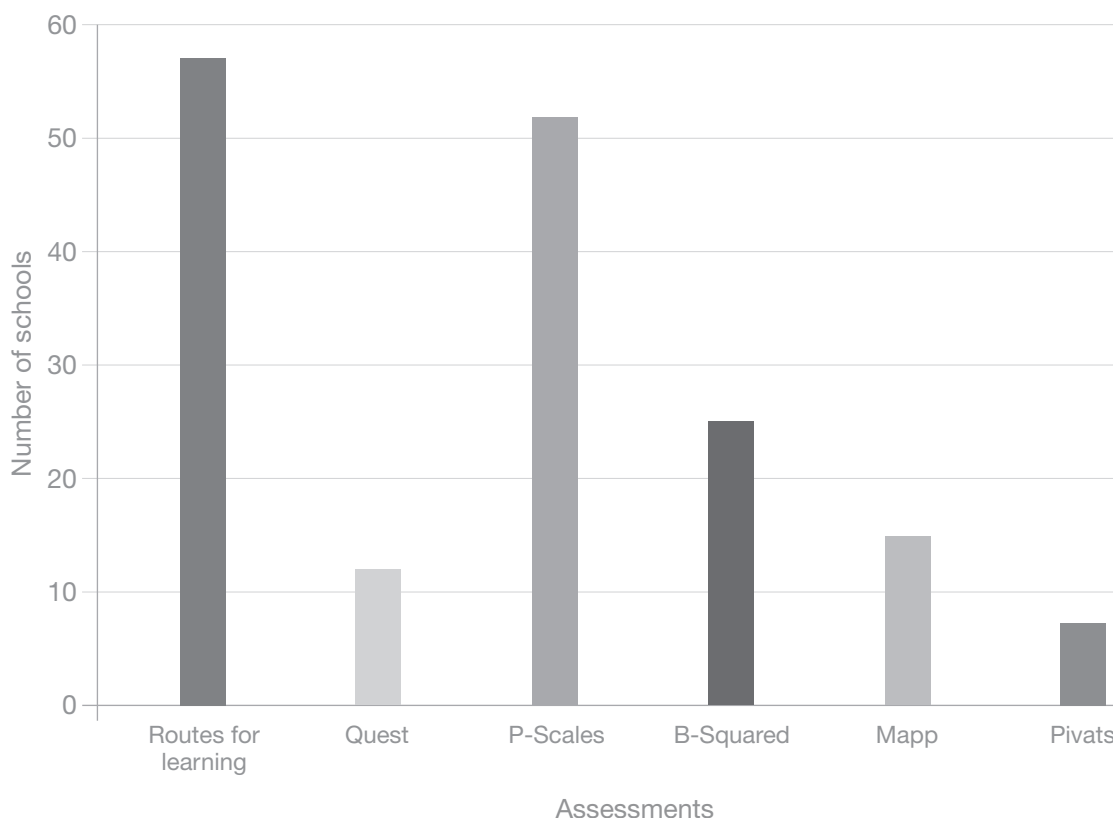
support from the fact that of the 25 schools which reported using RfL to provide school level data for Estyn/ Ofsted inspections, 10 were in Wales and 15 in England. Schools in England which were legally obliged to report data using P Levels at the time the survey was conducted, were statistically less likely to use data from Routes for Learning in the context of an inspection (Chi-Square = 6.1, p = .013). Also of particular interest is the number of schools using Quest for Learning, which is very largely a rebadging of Routes for Learning by the Council for the Curriculum Assessment and Examinations for Northern Ireland (see above). Five of the 15 schools not using Routes for Learning were using Quest.

How and with whom is RfL being used?

RfL was being used with approximately 850 learners in 52 of the 53 schools (one school did not give an approximate number), an average of 16 learners per school (Range 0–50).

More than 1/3 (38%) of the schools use RfL additionally with children who do not have PMLD, including those with ASD, those operating below P3, and those in the EYFS.

Respondents were asked for which of the following four purposes they used Routes for Learning:

1. To identify the appropriate starting point for pupils

2. To assess pupils' progress

3. Reporting to parents

4. Using summative data to inform school improvement

They were also asked to rank the importance of these four purposes.

Figure 2 shows that almost all respondents use it for the first two purposes (91% and 92% respectively), which relate to the learning of individual pupils. Similarly more than ¾ of the respondents (83%) ranked one of these two purposes as the most important use of RfL. This suggests that RfL is meeting its primary aim, ie to enable teachers to make accurate assessments of learners with PMLD, and so have a positive impact on their learning.

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Figure 2: Percentage of schools using RfL for different purposes
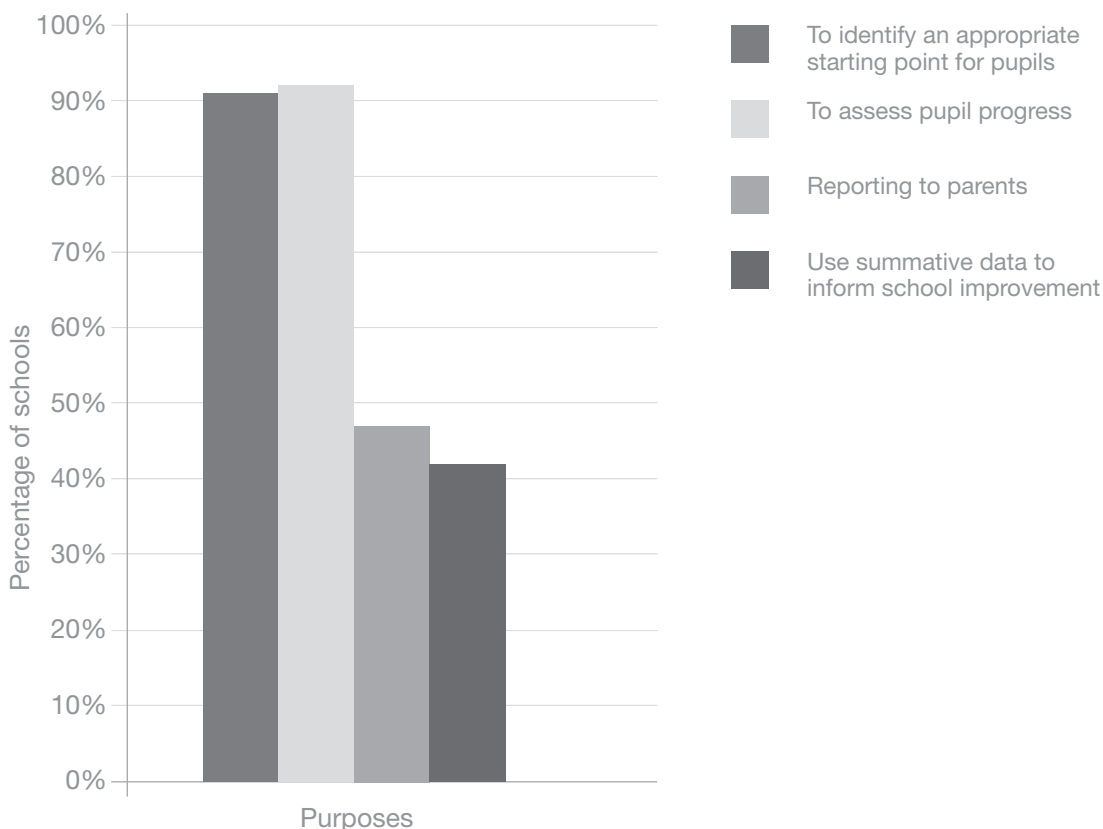
Fewer than half the schools use RfL for reporting to parents, or use the summative data to inform school improvement. In relation to using summative data from RfL to inform school improvement there is a significant difference between schools in Wales and England, with 11/13 schools in Wales using RfL data for this purpose and 11/40 in England (Chi Square = 13.2, p= 0.0003). This may reflect the statutory obligation in England to report data using the P Levels, but it may also indicate the greater level of support available in Wales for using RfL, for example through the special school headteachers' networks.

In addition, as noted above, 25 schools (10/13 in Wales and 15/40 in England) said that they used school level routes data as evidence for Estyn/Ofsted. These responses, about the purposes for which RfL was being used, probably also reflect the fact that, due to the way the questionnaire was circulated, respondents are a mix of head teachers, teachers with specific relevant responsibilities and classroom teachers.

Respondents were also asked three open questions about the advantages and disadvantages of using RfL to assess pupils with PMLD and any difficulties they had encountered using it. Thematic analysis was used to analyse the responses to these open questions (Willig, 2013). Answers to the open questions were read and re-read by both the first and second authors in order to identify common themes related to the research questions. These themes were then used to categorise the data. Themes and categories were validated by another member of the RfL development group.

Overall, RfL received a very positive evaluation from the respondents with almost all those who use it mentioning one or more advantages. Slightly fewer respondents mentioned any disadvantages and 19 additionally nominated particular items on the assessment as problematic.

Advantages of using RfL

Five main themes were identified in relation to the advantages of using RfL:

- Enables progress to be shown/ tracked
- Small achievable steps
- Flexible – learners can follow own pathways
- Can demonstrate lateral progress as well as vertical
- Specific to learners with PMLD/fit for purpose

Small achievable steps:

> 'Demonstrates very small steps of achievement.' (Respondent 2)

> 'Small steps identified.' (Respondent 8)

Flexible – learners can follow own pathways:

> 'The flexibility that is built into the hierarchical structure of the milestones gives us the necessary freedom to plan for the very individual needs of our learners but still within a clear framework.' (Respondent 28)

Lateral progress can be shown as well as vertical:

> 'Being able to show lateral progress through subtle changes of behaviour and opportunities to encourage generalisation of skills.' (School 68)

Enables progress to be shown/tracked:

> 'Routes allows our most profound pupils to make and show they are making progress.' (Respondent 4)

> 'A very good tool to show progression for individual PMLD pupils.' (Respondent 60)

Is designed for/specific to learners with PMLD:

> 'The assessment criteria are relevant to this group of learners.' (Respondent 21)

> 'It's useful in really focusing on how pupils with PMLD learn.' (Respondent 62)

Provides clear guidance for staff:

> 'If information is collected properly it can help the staff know student better, quicker.' (Respondent 12)

> 'Great examples of how to assess.' (Respondent 25)

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A number of responses included several of these themes. For example:

'It shows progress, it is personalised. Small steps can be celebrated. Can see at a glance where a pupil is on the map. Addresses the way pupils with PMLD learn ideas for what to look for what to teach.' (Respondent 58)

'It has very small steps and is open enough to allow for individuality of pupils. It builds on known skills and focuses on the most important strands of development and learning for students with PMLD.' (Respondent 48)

Disadvantages mentioned by respondents proved harder to categorise. The need for staff to be trained in the use of RfL emerged as a particular issue, with problems in ensuring all staff understand what is meant by particular items and lack of consistency across staff/schools (need for moderation) featuring strongly as disadvantages. Other disadvantages mentioned by a number of respondents were the unfamiliarity of the language used for some of the items, the lack of an electronic recording system and difficulties in using summative data for whole school accountability purposes.

Only a few items from the Routemap were mentioned by more than one respondent as causing difficulties. These were: Box 4 (Brief memory for a previously presented stimulus), Box 8 (Responds to own name) and differentiating between Box 21 (Action on reactive environment) and Box 24 (Purposeful action on everyday environment) and between Box 23 (Contingency responding) and Box 26 (Contingency awareness). These difficulties with particular items probably reflect the fact that the materials were not trialled systematically prior to publication due to lack of funding; and the lack of availability of training. In answer to the specific question on training, just over two thirds of the respondents said that some staff had received training in using RfL, but only just over half felt that all relevant staff felt confident in using it.

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Discussion

The responses to this survey largely agreed with the results of previous, smaller scale, largely qualitative, research. Teachers who responded to our survey, from Wales, England, and further afield agreed with those in the three schools studied by Van Walwyk (2011) and McDermott (2014) that RfL is a valuable assessment tool because it is specifically designed for learners with PMLD, and consequently enables teachers to see and assess the progress that these learners are making.

The respondents to our survey also agreed with those consulted by McDermott and Walwyck that the lack of an electronic recording system limits the usefulness of RfL for school level reporting, and using the data for school improvement. In addition, our survey identified the lack of access to RfL-specific training as an important issue, with about half the respondents reporting that not all relevant staff were confident in using RfL. McDermott also identified training as an important issue, although she suggests that staff who have received some prior training relevant to working with learners with PMLD are likely to be in a better position to implement RfL. Moderation procedures and the achievement of consistency between staff were also identified as an issue both by McDermott and in our survey. Potentially this is an issue which could be addressed through training.

In addition our survey identified some interesting differences between England and Wales, with schools in Wales being significantly more likely to use data from RfL for school level reporting to Estyn than schools in England were for reporting to Ofsted, and to use the data to inform school improvement. These differences suggest that government policy with regard to assessment, reporting and accountability is having an impact on what schools do. The greater support for RfL in Wales may be leading to a greater confidence amongst schools in using aggregated learner assessments for school evaluation and reporting for inspection. This has implications beyond the boundaries of England and Wales, since it suggests that schools may be discouraged from using potentially useful data for self-evaluation by reporting regimes which do not necessarily recognise the value of that data.

Conclusion

The research has shown that RfL is being used widely across England and Wales. It also suggests that the tool is relevant to assessing learners operating at the earliest developmental levels. The respondents commented on the practicality of Routes for Learning and that it made assessing learners with PMLD easier. Only around half of the respondents who were using RfL mentioned any disadvantages. RfL can thus be seen as having largely achieved its stated aims of providing teachers with a flexible assessment tool which supports a focus on the learning process and important cross-curricular skills such as learning to learn, and consideration of lateral as well as hierarchical progress. In addition, particularly in Wales, RfL, which was originally envisaged primarily as a tool for assessing the progress of individual learners, has proved flexible enough to be useful as a reporting tool for accountability purposes and for school self-evaluation and improvement. Differences between England and Wales suggest that policy may impact the extent to which schools use data in these ways. The main suggestions for further development were in relation to staff training, with further suggestions made in relation to particular steps towards an electronic record-keeping system which could facilitate moderation and the use of summative data for school improvement and accountability.

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References

Bayley, N (2006) **Bayley scales of infant and toddler development** (Third edition). San Antonio, TX: Harcourt

Bellamy, G, Croot, L, Bush, A, Berry, H and Smith, A (2010) A study to define profound and multiple learning disabilities. **Journal of Intellectual Disabilities**, 14(3) 221–235

British Educational Research Association (BERA) (2018) **Ethical guidelines for educational research**. Available at: https://www.bera.ac.uk/researchers-resources/publications/ethical-guidelines-for-educational-research-2018 (accessed 14 January 2019)

Council for the Curriculum, Examinations and Assessment, Northern Ireland (CCEA) (2007) **Quest for Learning**. Available at: http://ccea.org.uk/curriculum/sen_inclusion/assessment/quest_learning#downloads

Department for Education (2016) **Training materials for teachers of learners with severe, profound and complex learning difficulties Module 2.4 Assessment, monitoring and evaluation**. Available at: www.complexneeds.org.uk/modules/Module-2.4-Assessment-monitoring-and-evaluation/All/m08p010c.html# (accessed 14 January 2019)

Donnelly, V (2005) Developing an effective assessment for learners with PMLD, Paper presented at the Inclusive and Supportive Education Congress International Special Education Conference – Inclusion: Celebrating Diversity? Glasgow, Scotland, 1–4 August 2005

Goldbart, J and Ware, J (2015) Communication. In P Lacey, H Lawson, and P Jones (eds) **Educating learners with severe, profound and multiple learning difficulties.** London: Routledge

Hogg, R (2017) Assessing progress for learners with PMLD (Part 1). **The SLD Experience,** 77, (1), 5–18

Imray, P and Hinchcliffe, V (2014) **Curricula for teaching children and young people with severe or profound and multiple learning difficulties**. London: Routledge/NASEN

Kahn, J V (1976) Utility of the Uzgiris and Hunt scales of sensorimotor development with severely and profoundly retarded children. **American Journal of Mental Deficiency**, 80(6), 663–665

Male, D and Rayner, M (2007) Who goes to SLD Schools? Aspects of policy and provision for pupils with profound and multiple learning difficulties who attend special schools in England. **Support for Learning**, 22, 145–152

McDermott, H (2015) An exploratory multiple case study investigating how the Routes for Learning assessment approach has been implemented by professionals working with children and young people with profound and multiple learning difficulties. Doctoral Thesis, University of Manchester

McDermott, H and Atkinson, C (2016) Routes for Learning: Professionals' implementation of the approach in supporting children with profound and multiple learning difficulties. **SLD Experience**, 75, 10–17

Uzgiris, I and Hunt, J McV (1975) **Assessment in infancy: Ordinal scales of psychological development**. Urbana, IL: University of Illinois Press

Van Walwyk, L (2011) Measuring progress in children with profound and multiple learning difficulties. **SLD Experience**, 60, 9–16

Visser, L, Ruiter, S, van der Meulen, B, Ruijssenaars, W and Timmerman, M (2012) A review of standardized developmental assessment instruments for young children and their applicability for children with special needs. **Journal of Cognitive Education and Psychology**, 11(2), 102–127

Ware, J and Donnelly, V (2004) Assessment for learning for pupils with PMLD: The ACCAC Insight Project. **PMLD Link**, 16(3), 12–17

Welsh Assembly Government (2006) **Routes for Learning: Assessment materials for pupils with complex needs**. Available at: http://learning.gov.wales/resources/collections/routes-to-literacy-and-numeracy?lang=en (accessed 14 January 2019)

Willig, C (2013) **Introducing qualitative research in psychology**. Maidenhead: McGraw-Hill Education

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