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The impact of CPD on data use

Examining the association between training/professional development frequency and teachers' confidence in using school effectiveness data

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Introduction and context

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Introduction and context

- "*England arguably has more data and more sophisticated data about education than any other jurisdiction in the world.*"

(Earl & Fullan, 2003: 385)

- Schools should be 'data rich' (Miliband, 2003) to foster 'intelligent accountability' (Miliband, 2004);
- 20 years of development by various Departments for Education of sophisticated school effectiveness data metrics being made available to schools by Govt, charitable organisations such as the Fischer Family Trust (FFT), spin-off companies such as CEM from the Uni of Durham and others charging for services to provide various measures of academic attainment, progress and potential.
- All of which is built on the implicit assumption that the use of such data can lead to improved outcomes for pupils (Schildkamp, Vischer & Luyten, 2009) .

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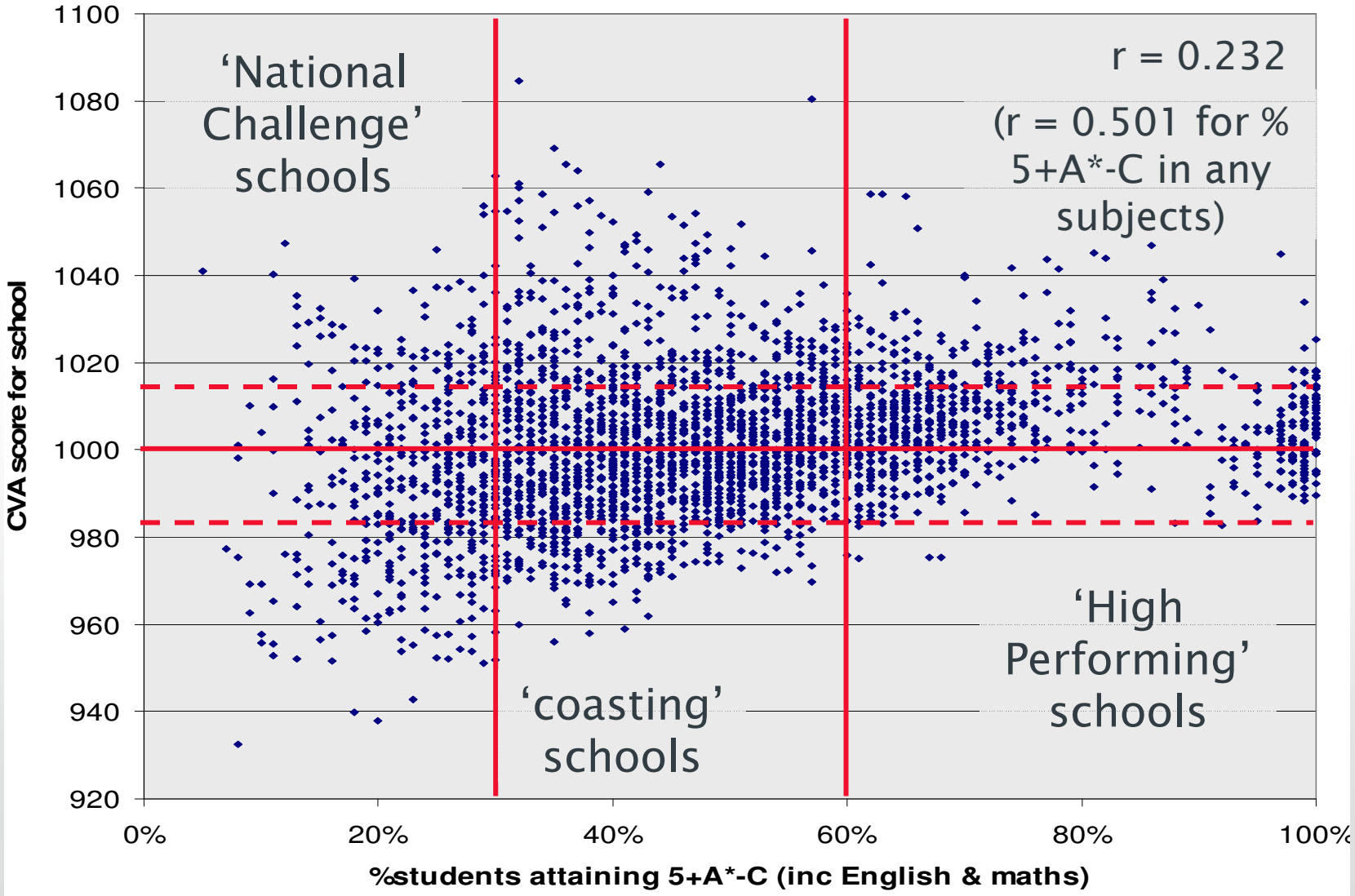
The participants

- The full range of teachers (age, experience, gender, level of responsibility and subject background) in English secondary schools.
- 813 complete responses from teachers working in 178 different schools across England.
- Response was via invitation(s) sent to the Headteacher. Schools, and participating teachers within these schools, were self-selecting – therefore unlikely to be representative of all teachers in all English secondary schools.
- We were able to determine the public performance data profile of participating schools in terms of:
  - ***pupil attainment*** – percentage of students attaining 5+A*-C in GCSE (including English and Maths) at age 16,
  - ***pupil progress*** – the school-level CVA score (sig above, in line with or sig below the national mean CVA).

Public domain school-performance indicators (2008)



Research scope and questions

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- Exploratory research via an online survey designed to scope for issues which could be followed up through more detailed follow-up research. *All responses are teacher self-report of own experience/perceptions*.
- Associations were examined using classification tree analysis of survey responses (chi-square tests of difference using CHAID techniques)
- data = pupil academic attainment and progress data (primarily), both externally and internally sourced.
- Surveyed teachers' extent of data use and their perceived level of skill and understanding in working with data (possibly = teacher confidence in their capacity to use data)

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The impact of training frequency on perceived skill level and understanding of data

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Extent of data use by teachers

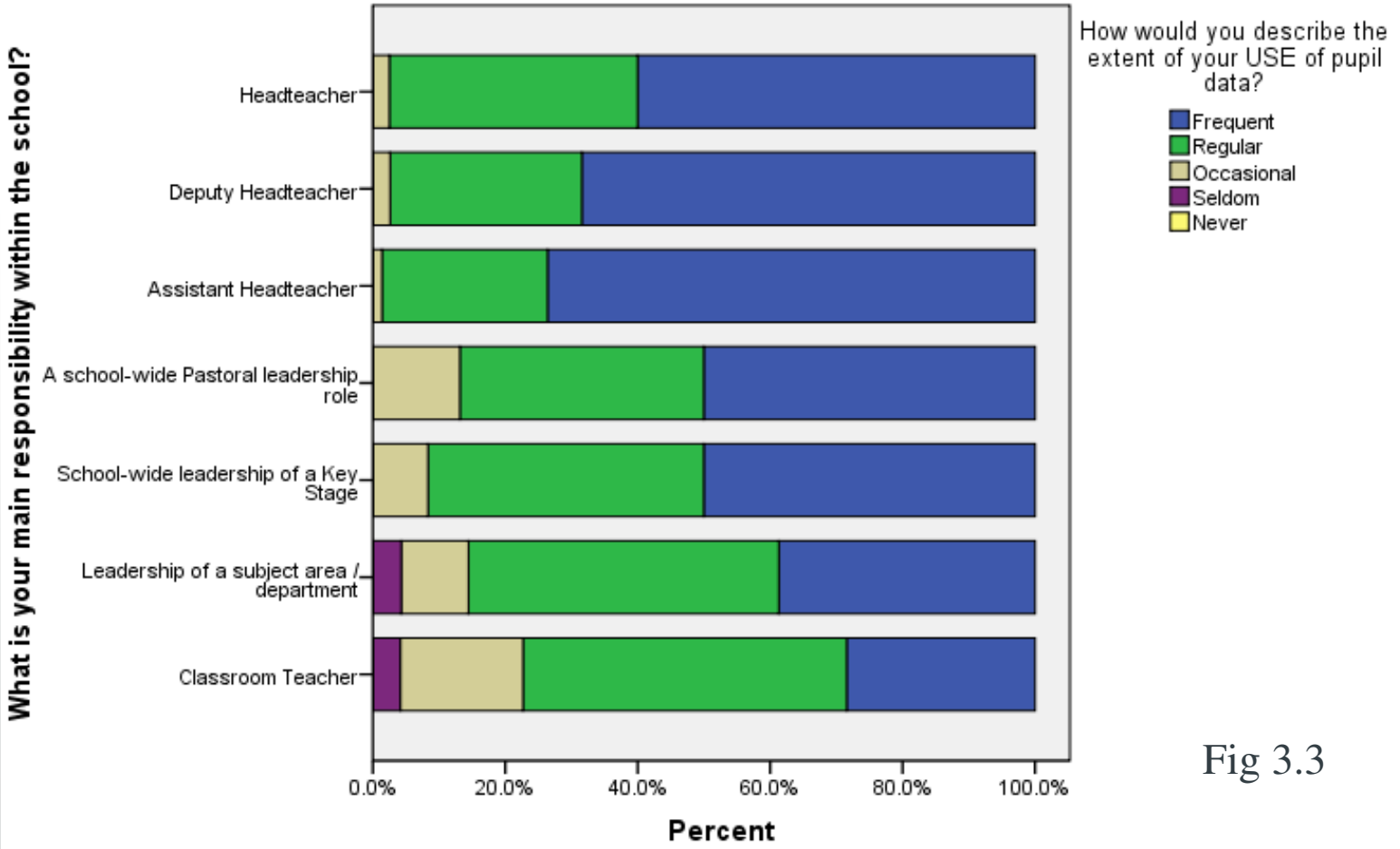

Fig 3.3

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Extent of data use by teachers

- Overall 4 distinct groups ($p<0.001$, chi-sq = 90.84, df=12):
  - Deputy Heads and Assistant Headteachers
  - Headteachers, school-wide key stage and pastoral leaders
  - Heads of Department
  - Classroom teachers
- In line with the notion of the role of 'Data mangers' in many secondary schools – a role delegated by the Headteacher to a junior member of the senior leadership group.
- Moderated by school data profile highest useage schools don't have the senior leadership split

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Training and professional development in relation to data use and interpretation

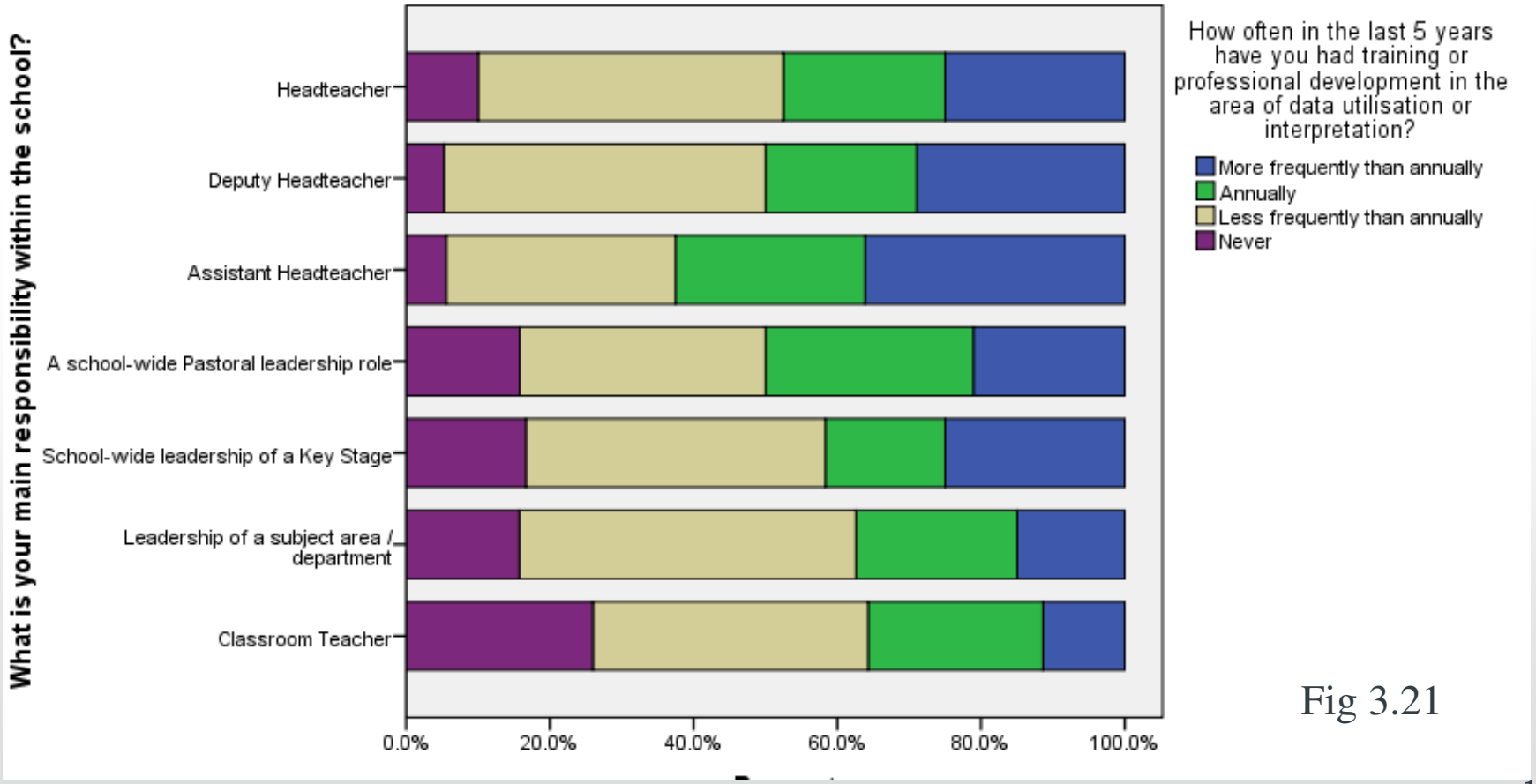

Fig 3.21

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Training frequency & perceived skill-level

- Do you feel confident that you have the skills to access/utilise/interpret data?
  - Classroom teachers 85%
  - Heads of Department 85%,
  - Senior leaders 94%

- Only for those reporting *never* having received training (in last 5 yrs) was self-reported skill level significantly reduced:
  - Classroom teachers 75% ($p=0.087$)
  - Heads of Department 55% ($p<0.001$)
  - Senior leaders 60% ($p<0.001$)

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Self-reported development needs

Those who reported that they didn't have the skills to access/utilise/interpret data there were critical of:

- the lack of consideration of pupil aptitude/attitude in target setting,
- concerns that the available data lacked application to individual pupils and that there were problems regarding the aggregation of data,
- the tension between measures and metrics being considered too crude on the one hand and too complex on the other,
- concerns about school size and subject-specific factors,
- the jargon and acronyms associated with the field.

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Self-reported development needs

For those who reported that they didn't have the skills to access/utilise/interpret data there were requests for:

- training in technical aspects of data processing, particularly for support in using systems such as RAISEonline and data management systems,
- training in interpreting data (particularly VA/CVA),
- more time to develop better data skills,
- more emphasis on how to link data with intervention and classroom practice,
- more information on what sources of data are available so that informed choices can be made as to their utility,

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Improving skill level

There were a number of requests for 'someone to show me' and calls for more and better refresher in-service training in the form of:

- after-school / twilight sessions,
- one-to-one help,
- fully school-specific, in-school and subject-specific training,
- regular in-school forums to establish priorities and update staff once skills are acquired,
- regular opportunities to dry-run / practice data techniques,
- greater use of worked examples.

There were also appeals to policy makers to 'stop moving the goalposts'.

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Teachers' understanding of data

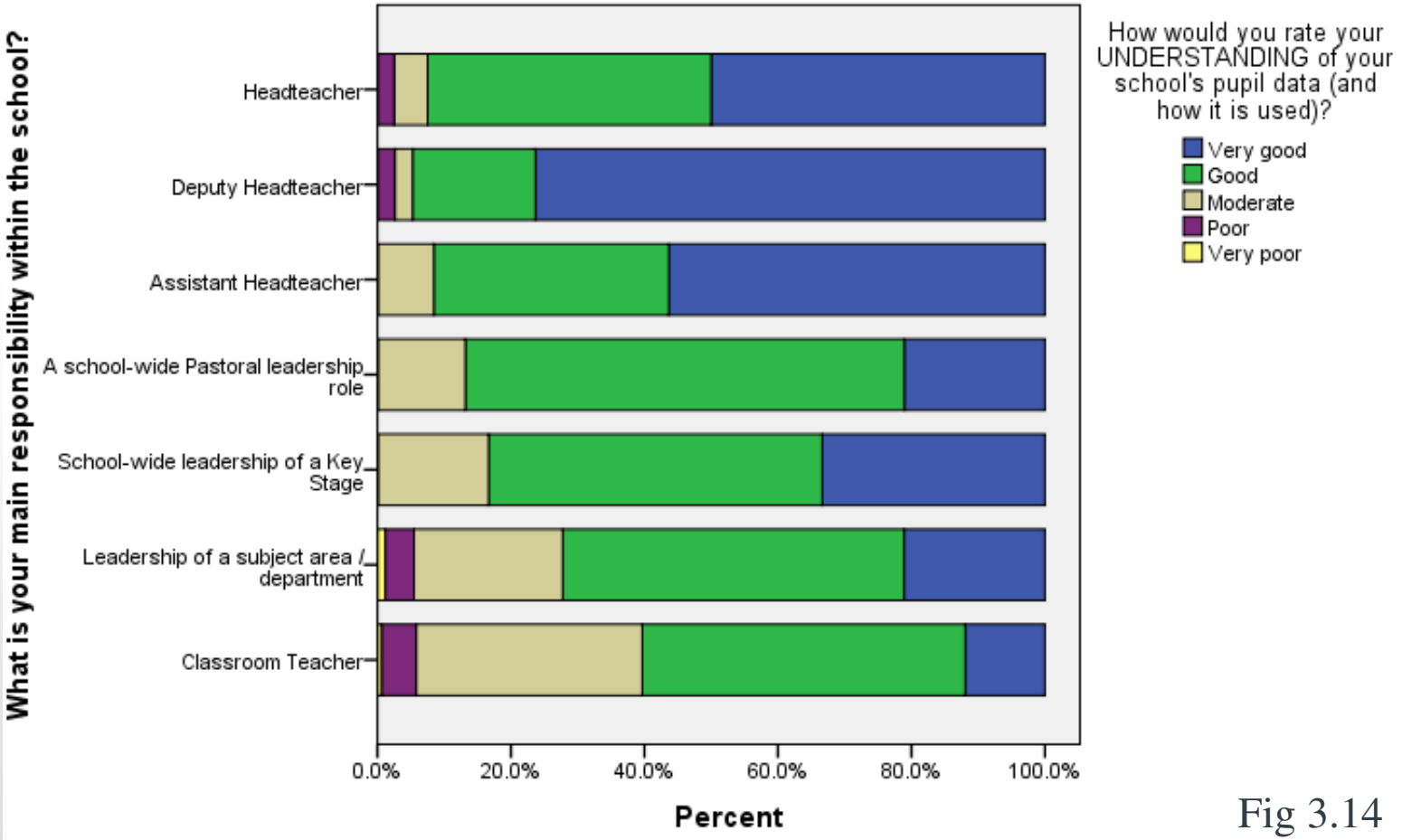

Fig 3.14

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Teachers' understanding of data

- Overall 3 distinct groups ($p<0.001$, chi-sq = 142.5, df=8):
  - Senior Leaders (92.7% good or very good)
  - All middle leaders (74.2% good or very good)
  - Classroom teachers (60.3% good or very good)

- No significant variation in understanding between male and female teachers, between full-time and part-time staff.
- No significant differences by subject taught after adjusting for level of responsibility.

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Teachers' understanding of data

- NQTs and teachers with 1-5 years of experience reported the lowest levels of understanding of pupil performance data

- *"One of the situations that we get regularly is new teachers struggling to understand (a) what the data is for and (b) what the data is telling them. It's a lack of training not just in the school but also from a PGCE point of view. Obviously the main thing in the PGCE is getting you into the classroom and getting you teaching, but they need to teach you all aspects [of school life] and data is one of the bigger ones now. This should be approached at a much earlier point of the training."*

Classroom teacher

How teachers rate their satisfaction with their level of understanding

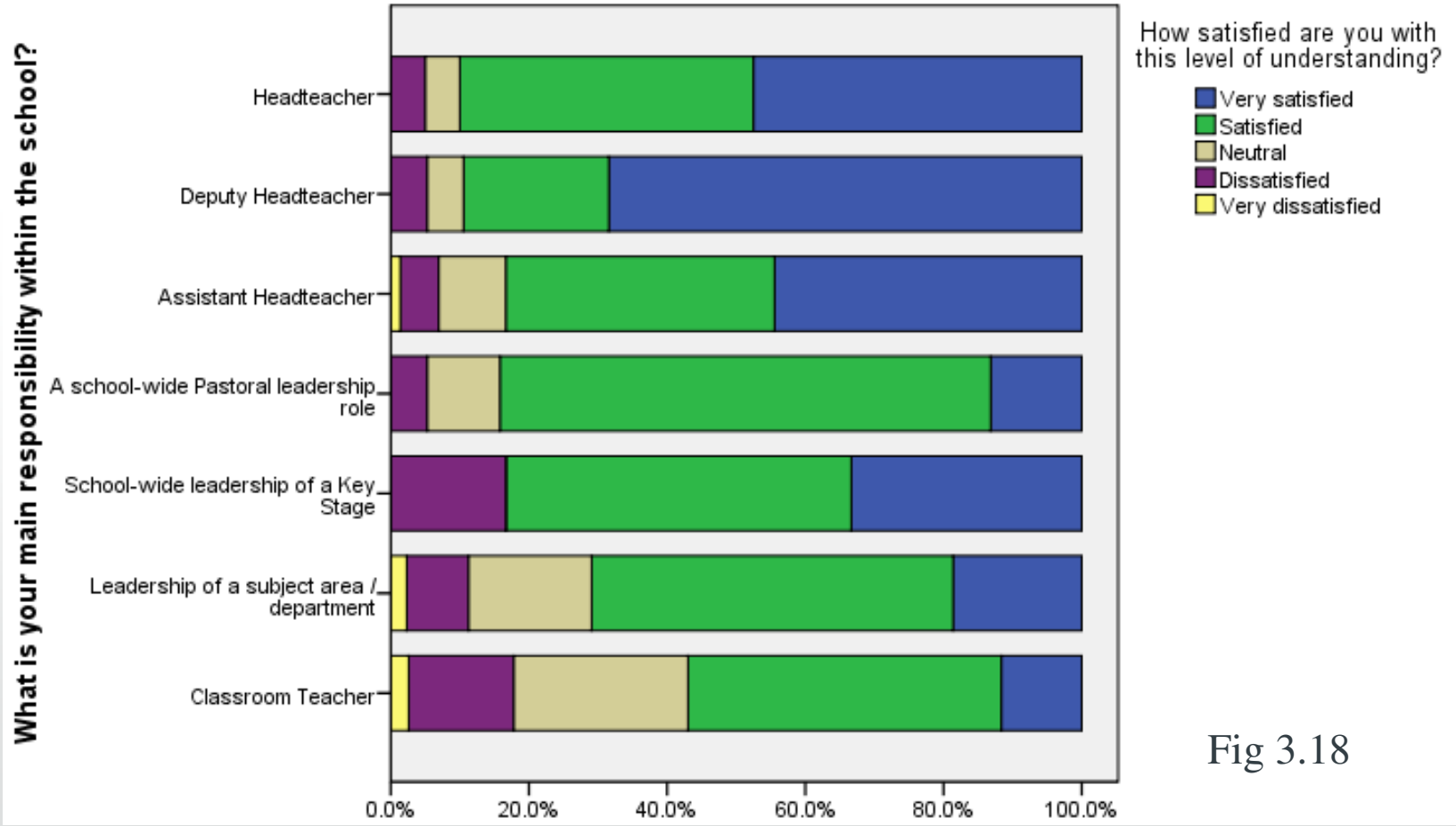

Fig 3.18

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Impact of training on understanding of data

- Understanding data – recall there were 3 distinct groups:
  - senior leaders > middle leaders > classroom teachers

- Senior leaders and middle leaders divide into three subgroups ($p<0.001$, chi-sq = 33.4, df=6/$p=0.011$, chi-sq = 28.1, df=8):
  - At least annually > less frequently than annually > never
- Classroom teachers divide into two subgroups ($p=0.003$, chi-sq = 22.4, df=4):
  - At least annually > less frequently than annually & never

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Impact of training on understanding of data

- Impact of training may be moderated by the school performance data profile (school-level performance indicators)
- In schools with the most positive profile (>60% 5+A*-C grades at GCSE and sig positive CVA) the frequency of training appeared to have no significant impact on the self-reported level of understanding (approx 30% of sample).
- In schools with most other profile types:
  - Senior leaders now require at least annual training to make a significant impact in understanding (p=0.012)
  - Middle leaders and classroom teachers less frequent than annual training may have a significant impact (p=0.005)

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Conclusions

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Conclusions

- Good quality training and professional development have a key role to play in fostering teachers' confidence in their capacity to access, utilise and interpret data (Earl & Fullan, 2003; Earl & Katz, 2006)

- More specifically, and in line with other research (Vanhoof et al., 2010), there is a significant association between participating teachers' reported *frequency* of training and their *confidence* in accessing, utilising and interpreting data. There is a very clear drop in confidence among those who reported not having received any data-focused professional development during the last five years.

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Conclusions

- The impact of training frequency on teachers' confidence to use data is moderated by the level of responsibility. According to the participants, classroom teachers require training on at least an annual basis to have a significant increase in their understanding of data whereas any frequency of training makes a significant difference in understanding for middle and senior leaders. The required frequency of training may be moderated by school type in terms of its public performance data profile.

- Teachers favour small scale, highly-focused professional development on data use that engages teachers collectively across the range of responsibilities. A regular approach to professional development could be used to augment the common practice of staff informally seeking the advice of fellow staff who act as unofficial 'data facilitators' in their school (Wayman, 2005; Wayman, Midgley and Stringfield, 2006; Schildkamp and Kuiper, 2010).

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References

- Earl, L. and Fullan, M. (2003) Using data in leadership for learning, *Cambridge Journal of Education*, 33(3), 383-394.
- Earl, L., and Katz, S. (2006) *Leading schools in a data rich world* (Thousand Oaks: Corwin Press).
- Kelly, A., Downey, C. and Rietdijk, W. (2010) *Data Dictatorship and Data Democracy: understanding professional attitudes to the use of pupil performance data in English secondary schools* (Reading: CfBT Education Trust). Available online at http://www.cfbt.com/evidenceforeducation/our_research/evidence_for_schools/school_improvement/data_dictatorship.aspx
- Miliband, D. (2003) *The Annual Leadership Lecture 2003* (Nottingham: National College of School Leadership).
- Miliband D. (2004) *Personalised Learning: Building a new relationship with schools*, paper delivered at the North of England Education Conference (Belfast, January).

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References

- Schildkamp, K., Visscher, A. and Luyten, H. (2009) The effects of the use of a school self-evaluation instrument, *School Effectiveness and School Improvement*, 20(1), 69-88
- Schildkamp, K. and Kuiper, W. (2010) Data-informed curriculum reform: Which data, what purposes, and promoting and hindering factors, *Teaching and Teacher Education*, 26, 482-496
- Vanhoof, J., Verhaeghe, G., Verheaghe, J.P., Valcke, M. and Van Petegem, P. (2010) The influence of competences and support on school performance feedback use, *Educational Studies*, iFirst Article, available online at http://pdfserve.informaworld.com/157825_731198554_922502808.pdf
- Wayman, J.C. (2005) Involving teachers in data-based decision-making: Using computer data systems to support teacher inquiry and reflection, *Journal of Education for Students Placed At Risk*, 10(3), 295-308.
- Wayman, J. C., Midgley, S., & Stringfield, S. (2006) Leadership for data-based decision making: collaborative educator teams. In A. Danzig, K. Borman, B. Jones & B. Wright (Eds.), *New models of professional development for learner centered leadership* (Mahwah, NJ: Lawrence Erlbaum Associates).