RESEARCH

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Contents

Chapter 4: Methodology

This chapter presents the research design, methods, sample and general research strategy for the qualitative and quantitative studies.

A principal requirement of longitudinal research is to maintain an adequate sample of respondents at each stage of the study. This is particularly challenging for a study of Armed Forces personnel. The deployment of UK troops to support UN/US-led operations in Afghanistan started in February 2006 with numbers increasing to 9,500 by April 2011. As a result many more than the anticipated number of Service personnel were on operational service during the last stage of fieldwork[1]. Whilst the sample size and attrition rate are highly respectable for a study of this kind, and allow for reliable and extensive in-depth analysis, readers should bear the military context in mind when assessing the methodological details set out below.

Ethical approval for this project, including the research design and methods, was sought and received from the Ministry of Defence Research Ethics Committee (MODREC) in 2008.

4.1 Qualitative Study

Introduction

The qualitative study set out to follow the progress, in their first two and a half years of service, of a core sample of 20 Service personnel from each of the three Services. Each of these individuals is treated as part of a 'case study' – that is, as the subject of extensive enquiry, undertaken with a view to collecting detailed evidence over a significant period of time. This method also served as a basis for raising broader issues for the Service to which the individual belongs. Where (and only where) it is appropriate, we also look to identify issues that apply to all three Services. The focus throughout is on literacy and numeracy provision and its impact on operational performance and related dimensions of Service life.

The research design

There are relatively few longitudinal studies in research where the same group of individuals are tracked over an extended period of time. The original research design comprised three stages of fieldwork:

- Stage 1: interview 20 recruits or trainees from each Service during their Phase 1 training.

- Stage 2: interview these same Service personnel in their Phase 2 training units.

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[1] Resource considerations prohibited the follow up of all personnel on operational service.

- Stage 3: interview the same personnel during their first appointments, whether RN ratings at sea, RM in their troop, soldiers in the Field Army, or RAF airmen in productive service.

However, as the study progressed it became necessary to make some revisions to this design. The time frame for Phase 2 training across the three Services was short; capturing the experiences of Service personnel at this point would have required Stage 2 fieldwork to begin almost immediately after Stage 1 fieldwork was completed[2]. It was therefore decided that the three stages of fieldwork should be spread evenly over the duration of the study: Stage 1: December 2008 to September 2009; Stage 2: January 2010 to June 2010; Stage 3 December 2010 to April 2011. Although this meant that relatively few Service personnel were interviewed in Phase 2, it was thought that they would be able to reflect on their educational experiences and apprenticeship training in this phase during Stage 3.

Stage 3 saw almost all participants[3] take up their first specialist appointments at sea or in the Field Army or in productive service.

Methods

The primary methods used to gather data were individual interviews and the analysis of policy and curriculum documents. In addition to formal interviews, the team engaged in informal conversations with Service personnel as opportunities presented themselves and, where their comments contributed to specific areas of the Study, these were recorded in field notes. In addition to the trainees in each Service, the study formally interviewed Officers and NCOs (many of whom were the trainees' line managers); Basic Skills and Key Skills tutors; educational managers; military instructors; and policy staff. Researchers also interviewed officers from senior headquarters (particularly those from policy headquarters) and, although these data have often been used to confirm or challenge the viewpoints and/or perceptions of the various constituents involved, one of the main objectives of the research has been to give voice to the experiences of the Service personnel working at the ground level.

Most formal interviews took place face-to-face, although a number were conducted over the telephone. The interviews were semi-structured, based on an agreed schedule of questions; both trainees and line managers[4] were asked the same series of core questions, although the form of some questions was dependent on the context in each Service. Furthermore, all interviewees were given an opportunity to elaborate on the issues most closely related to their experience. All participants were interviewed on a voluntary basis. All names have been changed, except in the case where it has been

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[2] The RN and RAF samples completed their Phase 2 training before Stage 2 of the study commenced, requiring that this stage concentrate on individuals who were already in their specialist branches and starting life at sea, or who were in their first RAF appointments. Almost half of the Army sample was located at the Infantry Training Centre, Catterick (where Phase 1 and 2 Infantry training are combined) and these recruits were already in the Field Army before the Stage 2 fieldwork began in January 2010.
[3] One RM was still in training.
[4] Interview schedules with educational staff and officers from the higher chain of command were more tailored to individual contexts.

impossible to give anonymity (e.g. the Points of Contact [POCs] or individuals in charge of apprenticeship programmes in particular Services).

A majority of the original sample of trainees who remained at Stage 3 were interviewed, as planned, three times; however, some participants in the RN joined the study after Stage 1 and were interviewed either twice or on one occasion only. The average length of an interview was 45 minutes, although several lasted for more than an hour. Interviews with Officers and NCOs followed a slightly different schedule, for example, additional questions were included on the Services' record keeping arrangements to support data collection on literacy and numeracy and report progress against targets.

The concept of 'operational effectiveness' (OE) is central to this study. In order to define OE, all original trainees and line managers were asked to consider a list of skills, abilities and personal qualities, and to identify which of these contributed most towards OE in their own branch or trade. Participants were also asked to judge how important it was to be 'competent' in literacy and/or numeracy, or a constituent skill such as writing, in order to be operationally effective in their job role. Further questions explored definitions of 'competence'.

The sample

A longitudinal study that aims to follow the same individuals over any extended period has to take account of the numbers who are likely to become unavailable as time goes on (the attrition rate). Owing to the expected high rates of attrition[5] in a three-year longitudinal study, and also taking in to account MOD data showing the high proportion of personnel leaving the Services in the early years, it was necessary to recruit in excess of 20 individuals in the sample for each Service at Stage 1 (see Table 4.1)[6]. However, a further reason for the significant rates of attrition resulted from the intensification of the conflict in Afghanistan, meaning that many more than the anticipated number of participants were on operational service during the fieldwork in Stages 2 and 3.

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[5] 543 of the Stage 1 quantitative sample had left the Army by Stage 3. Excluding this number, the attrition rate between Stages 1 and 3 was 40%. The combined total of the qualitative sample across the three Services in Stage 1 was 77 recruits, and this number fell to 41 in Stage 3.
[6] During Stage 1 a small number of recruits exercised their right not to be part of the research. Under the ethical guidelines that were agreed before fieldwork commenced, participants had the right to withdraw from the research at any time.

Table 4.1: Number of Service personnel interviewed in each stage of the research[7]			
Service	Number of trainees interviewed		
	Stage 1	Stage 2	Stage 3
RN	22	19[8]	14[9]
Army	26	20	14
RAF	29	15	13
TOTAL	**77**	**54**	**41**

Although the original sample represented a broad range of experience and backgrounds, all participants at the outset of their training were provisionally identified as operating below Level 1 (L1), generally seen as equivalent to GCSE Grades D-G, in literacy or numeracy or both. However, it subsequently emerged that a significant minority of recruits in each Service sample were recorded as having either literacy or numeracy skills of L1[10], thereby exempting them from the requirement to undertake Basic Skills or Key Skills provision in that skill. Nevertheless, this was not an obstacle to examining the impact of varying levels of literacy and numeracy skills on operational effectiveness and other outcomes, which was a primary objective of this study.

The number and rank of all personnel interviewed in each Stage of the research for each Service is summarised in Table 4.2. Figures for Stage 3 are highlighted in bold. In total, the research team conducted formal interviews with 384 personnel between December 2009 and April 2011.

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[7] There were particular difficulties in maintaining the RN sample, and at Stage 2 the sample was modified in order to maintain an adequate number of recruits. Several naval ratings were at sea and unreachable, and five of the original six RM trainees had been discharged. As a consequence, whilst 10 Stage 3 interviews were held with respondents who had been interviewed in Stage 1, two were held with those who joined at Stage 2. Although replacements are not ideal in a study of this type, analysis of data on new (non-Stage 1) recruits took as a point of departure the issues that arose from recruits interviewed in Stage 1, and recruits interviewed at all three stages remained a principal focus of the study.
[8] The Stage 2 sample includes 13 new trainees, and six existing trainees.
[9] The Stage 3 sample consists of 11 Stage 1 recruits and three Stage 2 recruits.
[10] In the Army, four of the original sample of 26 were assessed with one literacy or numeracy skill at L1; in the RN, 13 of the original sample of 22 were assessed with one literacy or numeracy skill at L1; and in the RAF, 15 of the original sample of 29 were assessed with one literacy or numeracy skill at L1 (and three with L1 in both literacy and numeracy).

Table 4.2: Number and rank of participants interviewed in each stage					
Service and Stage of Research	Able Rates and/or Marines; Soldiers; Airmen	NCOs/ Officers	Educational managers, BS/KS tutors and administrative staff	Individuals from the higher chain of command	Total
RN 1	22	9	14	0	45
RN 2	19	12	9	5	45
RN 3	14	12	12	5	43
Army 1	26	7	12	0	45
Army 2	20	16	6	6	48
Army 3	14	14	14	3	45
RAF 1	29	5	6	0	40
RAF 2	15	15	8	2	40
RAF 3	13	10	9	1	33
Totals	172	100	90	22	384

Numbers of participants with known Specific Learning Difficulties (SpLDs)

A number of participants had MOD-recognised SpLDs[11]. Many referred to their SpLD as 'relatively mild'; however, only when the SpLD characteristics had been formally diagnosed, or were recognised by both the trainee and his/her line manager as being 'relatively severe', and judged as likely to have an impact on operational performance, was the incidence of the SpLD included in this study. The total known numbers of participants in the qualitative study with a severe[12] SpLD across each Service in Stage 3 were: four in the RN, four in the Army and eight in the RAF. Almost all personnel with a SpLD were diagnosed with dyslexia[13].

Methodology

The methodology of a research project is characterised by its general design and approach, as distinct from any one or more of the research methods employed.

The overarching aim of the qualitative research was to provide an in-depth exploration of the experiences of sample participants from their point of view. Different individuals will have different interpretations of their literacy and numeracy training and related activities,

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[11] Under current MOD direction, there is no obligation for Service personnel to inform their line manager of the details of their SpLD needs, although the majority of participants had done so. However, the new RAF policy on SpLDs states that all individuals need to identify themselves to mangers and trainers.
[12] As judged by both trainee and their line manager.
[13] The prevalence of dyslexia over the other three SpLDs recognised in the Armed Services is likely to be due to the limited expertise available to diagnose the remaining SpLDs, and the fact that there are few recognised diagnostic or screening tools available for use by non-specialists, particularly in the Army and RAF. There may also a tendency by non-specialist staff to name any SpLD that has an effect on reading or writing as 'dyslexia'.

and it is the role of the researcher to provide a faithful record of these. It is important, therefore, to keep in mind that these data, and the case studies they contribute to, are not to be regarded as representing the 'whole story'. At the same time, every effort has been made to compare testimony from one source, and wherever appropriate, we seek to place testimony side by side with evidence from documentary material relating to each Service's literacy and numeracy policy and recommended practice.

The samples should not be taken as representative of the workforce of each Service as a whole, and any generalisations that extend beyond these samples are therefore to be made with caution. In general, the value of a small scale and highly focussed 'case study' approach lies in the breadth and depth of information gathered, which is intended to be illuminating in its own right whilst also providing the basis for identifying themes, issues and priorities for each Service as a whole.

Limitations

The research described here is focused on a small sample of individuals for each of the three Services. The qualitative study did not incorporate a large-scale survey design, no attempt was made to gather data from a large population, and the sample was not intended to be (and is not) representative of the Service workforce as a whole. These features are not limitations of the research design, since they were not included as part of the qualitative study, but they do impose limits on what is to be expected of the case studies that should be clearly understood at the outset.

The principal limitations are as follows:

- Attrition: although researchers started with a sample size in excess of 20 for each of the three Services, the attrition rate was higher than anticipated for such a study within an Armed Forces environment. Even so, the rates compare favourably with what is generally to be expected of a three year longitudinal study of this type[14].

- Changing profile of samples: the samples included a number of individuals with higher than expected literacy and numeracy levels[15]. In addition, and owing to attrition, a number of individuals were added to the sample after the start of the study.

- Practitioner observation: resources did not allow for the research team to carry out formal observations of literacy and numeracy classes, with the result that we were not able to supplement interview or other data with direct evidence of teaching and learning in classrooms.

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[14] The greatest difficulty with maintaining the sample of Royal Marines: 11 were interviewed across Stages 1 and 2, but only two passed training and only one of these was interviewed in Stage 3.

[15] These individuals were retained in the sample, owing to the additional valuable information they provided on literacy and numeracy provision. But their presence raises questions about the process of Initial Assessment (IA) which are addressed later in the report.

4.2 Quantitative Study

Introduction

The study followed a sample of Army recruits during their first three years of service, collecting data for a quantitative analysis of their literacy and numeracy profiles, including their needs, learning and progress. The respondents were chosen from all new recruits joining in the first quarter of 2009 who had been initially assessed with Entry Level literacy and/or numeracy at Army Careers Information Offices (ACIOs) or Armed Forces Careers Offices (AFCOs).

The overarching aim was to analyse changes in literacy and numeracy performance as recruits progressed through training and began their career in the Army. Information from questionnaires was also used to explore the factors that account for changes in literacy and numeracy levels, and the impact of these on recruits' operational effectiveness, and on their professional and personal development.

In contrast to the qualitative study, the quantitative study was designed to provide data from which to derive findings that can be applied to the broader population of recruits with low literacy and numeracy skills.

The research design

Between January 2009 and March 2011, and using a longitudinal research design, the study followed a sample of trainees through the different stages of their early training and in their first Army appointments. As with the qualitative study, the design comprised the profiling and analysis of the literacy and numeracy skills of trainees over three stages, and included:

- Stage 1: a sample of recruits during their Phase 1 training.

- Stage 2: the same sample in their Phase 2 training units

- Stage 3: the same sample during their first appointments, as soldiers in the Field Army.

Sample and attrition

The original sample was randomly drawn from all new recruits who were initially assessed during the recruiting and selection process with Entry Level literacy and/or numeracy, and who started their Phase 1 training between 5 January and 31 March 2009.

Members of the research team visited Army staff and Basic Skills Development Managers (BSDMs) at each training unit to discuss the aims of the study, and to arrange access to the selected trainees at an appropriate time. The length, content, style and timing of literacy and numeracy provision differed across the training units, and the same boundaries, therefore, had to apply to the interview timetable and research 'window' for these units.

Stage 1 analysis was based on responses from 1,622 trainees. The sample included recruits from the five Phase 1 training units, reflecting both overall numbers and the proportion of trainees at each establishment with Entry Level (EL) skills. This produced the following sample profile:

- In literacy (based on the Army's initial assessment): EL1/2 (13%); EL3 (65%); L1 (18%) and L2 (4%).

- In numeracy (based on the Army's initial assessment): EL1/2 (8%); EL3 (72%); L1 (9%) and L2 (11%).

- 31% of the sample were from Infantry Training Centre, Catterick (ITC(C)); 27% from Army Training Centre, Pirbright (ATC(P)); 18% from Army Technical Foundation College, Winchester (ATFC(W)); 12% from Army Foundation College, Harrogate (AFC(H)); and 12% from ATR Bassingbourn (ATR(B)).

- 10% of the sample were female; 7% were non-British[16], 9% spoke English and another language[17].

- The average age of participants at the start of the study was 18 years, with 71% being under 20 and less than 1% in their 30s.

The dataset for Stage 2 contained information from 666 Army recruits (now trainees) who were either in the final stages of, or had recently completed, their Phase 2 training. The sample was drawn from the recruits who had taken part in Stage 1, and a response rate of 39% was achieved. This produced the following Stage 2 sample profile:

- In literacy (based on the Army's initial assessment): EL1/2 (11%); EL3 (67%); L1 (18%) and L2 (4%).

- In numeracy (based on the Army's initial assessment): EL1/2 (6%); EL3 (73%); L1 (9%) and L2 (11%).

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[16] Including American, Belizean, Cameroonian, Fijian, Gambian, Ghanaian, Grenadian, Indian, Irish, Jamaican, Kenyan, Latvian, Malawian, Nepalese, Nigerian, Pakistani, Seychellois, South African, St Lucian, Vincentian, Tanzanian, Trinidadian, Zambian, Zimbabwean.

[17] Trainees were asked if English was the only language they usually spoke: 9% spoke another language apart from English. Looking at a combination of actual other language(s) spoken, place of birth and nationality, it was possible to break this group down into those who spoke an additional language apart from English (4%) and those who spoke English as a second language (5%). This group was made up of speakers of 47 other languages. The number of languages spoken suggests a significant ESOL requirement, an issue returned to later in this report.

- 52% of the sample were at ITC(C); 18% at ATC(P); 12% at ATC(W); 9% at AFC(H) and 9% at ATR(B)[18].

- 8% were female.

- The average age was 19.6 years[19].

This is a longitudinal study designed to follow the same group of Army recruits over the three stages of the project; the target sample for Stage 3 consisted of those who had taken part in the first stage of data collection, who did not refuse further participation in the study and who were still in the Army. The total target sample at Stage 3 comprised 1075 soldiers and a response rate of 39% was achieved. The dataset for Stage 3 contained information from 428[20] soldiers during their first appointments in the Field Army. The Stage 3 sample profile was as follows:

- In literacy (based on the Army's initial assessment): EL1/2 (12%); EL3 (69%); L1 (16%) and L2 (3%).

- In numeracy (based on the Army's initial assessment): EL1/2 (8%); EL3 (68%); L1 (14%) and L2 (10%).

- 32% of the sample were at ITC(C); 33% at ATC(P); 14% at ATC(W); 7% at AFC(H) and 13% at ATR(B).

- 14% were female.

- The average age was 19.5 years.

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[18] Analysis of survey samples shows that a far larger proportion of the Stage 2 sample started their Army career at ITC(C) as compared with the initial sample of recruits; and the proportion of recruits from the other training centres in the Stage 2 achieved sample is smaller than it is in the original sample. This is largely due to the arrangement of recruits' training and their dispersal following Phase 1 training. Those who started at ITC(C) were preparing for the Infantry and were undertaking combined Phase 1 and Phase 2 training there. When contacted to take part in the second stage of data collection the recruits from other centres, particularly from AFC(H) and ATC(P), were dispersed widely following their Phase 1 training, making them harder to trace.

[19] This indicates a disproportionate loss of younger recruits from the sample analysed in Stage 1. As the first interim report on Stage 1 showed, those from ATR(B), ITC(C) and ATC (P) were, on average, 20 years of age at the start of their training, while the average age of recruits from AFC(H) and AFTC(W) at the same stage was 16 years. The latter two units take only Junior Entry recruits (16-17 year olds). As just over 80% of Stage 2 sample comes from the three centres with older recruits (compared to 70% among the original Stage 1 sample) the difference in average age between the Stage 1 sample and the Stage 2 sample can be explained by this fact.

[20] Although there was an initial total of 436 responses, eight cases were excluded owing to the absence of IA data or because the trainees were above EL3 in both literacy and numeracy IA.

Methods

The fieldwork across all stages was administered on behalf of NRDC by the National Centre for Social Research (NatCen).

Data collection for Stage 1 took place between January and May 2009 when trainees completed a separate literacy and numeracy assessment[21], and a questionnaire about their learning and their experiences of the Army, both before joining the Service and during their Phase 1 training.

The Stage 1 questionnaire consisted of 8 sections:

1. Introduction and background.

2. General information about the individual.

3. General information about the individual's parents and family.

4. Reasons for joining the Army.

5. Education and learning.

6. Provision, experience and attitudes towards literacy and numeracy skills.

7. Using computers.

8. Literacy and numeracy skills assessment[22].

Recruits completed 20 multiple-choice questions in the literacy assessment and 17 questions in the numeracy assessment. Respondents had slightly more than an hour to complete the survey, including 30 minute on the literacy and numeracy skills assessment.

The study employs a sequential and mixed-mode design; that is, different modes of data collection are used for different stages of the study.

A face-to-face survey, although time-and resource-intensive, is also known to be the option most likely to attract and motivate individuals to take part. Face-to-face respondents are more likely to make the effort to answer survey questions as compared with respondents on a web survey. A face-to-face survey was therefore the preferred option at Stage 1, as it was a priority to maximise the number of respondents.

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[21] The literacy and numeracy assessment tool administered in this study was adapted from that used in the 2002/03 Skills for Life survey. For further details of the assessment used see Parsons, S. and Bynner, J. (2006) 'Measuring Basic Skills for Longitudinal Study: The design and development of instruments for use with cohort members in the age 34 follow-up in the 1970 British Cohort Study (BCS70)'. *Literacy and Numeracy Studies,* Volume 14, No. 2, p. 7-30.
[22] Details of this assessment tool are provided in Chapter 5.

Resources and the conditions for surveying in Stage 2 did not allow for a repeat of the face-to-face option. Trainees were based in many more locations than they were in Stage 1. Given the extent of internet access amongst trainees in the sample, a web-based survey was chosen as the most likely means of achieving the highest possible response rate at an affordable cost. This option also allowed the data collection process to fit in with the lives of the sample group during Phase 2 training and their work in the field, for they were able to complete questionnaires at their convenience.

Data collection for Stage 2 fieldwork took place between December 2009 and August 2010 via an on-line questionnaire. The same sample of trainees, who were by then completing training for their various trades, was contacted through the Army Points of Contact (POCs) based at 25 Phase 2 training bases. Individualised letters explaining the Stage 2 web survey were distributed to participants via the POCs, who were asked to instruct recruits to compete the survey a few days before they left their Phase 2 training. Some POCs were able to organise sessions at computer centres such as Army Education Centres (AECs). Trainees who left their Phase 2 training before completing the survey were contacted in their Field Army location through POCs who again encouraged them to take part in the study.

The Stage 2 questionnaire consisted of five sections:

1. Introduction.

2. Experience in the Army.

3. Education and learning.

4. Using computers.

5. Literacy and numeracy skills assessment.

Participants completed the same literacy and numeracy skills assessment used in Stage 1, with assessment questions included at the end of the main body of the online questionnaire.

The questionnaire included questions asked during the Stage 1 interviews together with additional questions on Phase 1 and Phase 2 training. Since this was the second time that participants had been interviewed for this study, and not all questions needed to be repeated, the Stage 2 questionnaire was shorter than the Stage 1 questionnaire. Trainees were expected to finish the survey in one hour, of which approximately 30 minutes was devoted to the literacy and numeracy skills assessment.

Data collection for Stage 3 took place between November 2010 and May 2011, again using an online questionnaire. The sample of Stage 1 participants who were still in the Army was contacted again, and the fieldwork followed the same structure and procedures as at Stage 2. As before, soldiers completed the same separate literacy and numeracy assessment and a questionnaire.

The Stage 3 questionnaire consisted of 7 sections:

1. Introduction.

2. Experience in the Army.

3. Operational Effectiveness.

4. Education and learning.

5. Qualifications.

6. Learning in the Field Army.

7. Literacy and numeracy skills assessment.

The questionnaire repeated some of the questions used in the Stage 1 and Stage 2 interviews, whilst also including questions about experiences in the Field Army and the soldiers' chosen trade. Again, participants were expected to finish the survey in one hour, of which approximately 30 minutes was devoted to the literacy and numeracy skills assessment.

Methodology

The study makes use of a longitudinal research design, which is suited to the aim of following the same group of individuals through successive stages in their military training and careers. At each of the three stages, the survey included an assessment of participants' levels of literacy and numeracy skills, together with a questionnaire about learning and training in the Army context, as well as other features of their working and everyday lives.

The same literacy and numeracy skills assessment was used at all three stages of the study. As a result it is possible to evaluate any changes in literacy and numeracy profiles as recruits progressed through their training and began work within a selected trade. The performance of the sample in the assessments is the main focus of the quantitative analysis. Comparisons are drawn between scores and levels achieved at all three stages of the study. Information from the questionnaires was used to explore the factors that influence progress in literacy and numeracy, and the impact of any progress on the operational effectiveness of participants, together with their professional and personal development. This fed further inquiry and research themes in the qualitative study.

The analysis explored the characteristics of literacy and numeracy provision and support in the Army, and how trainees experience that provision. We investigated how personnel in the Army perceive and value literacy and numeracy learning in relation to their job performance, career progression and professional identity.

Throughout, the primary focus is on the relationship between literacy and numeracy interventions and operational effectiveness. The analysis therefore examined the impact of literacy and numeracy learning on the ability of the sample to carry out the tasks expected of them, whether in training or in the field, and also considered their perceptions of the value of sound literacy and numeracy skills for their operational effectiveness and military training.

Limitations

The quantitative analysis was designed to identify changes in the literacy and numeracy profiles of the sample, to reveal patterns in those changes and to suggest any likely explanations. However, it is important to acknowledge the limitations that attach to a design of this kind, and to any further limitations imposed by this study in particular. The principal limitations are as follows:

- Sample attrition: the loss of members of the sample with each successive stage of research. The initial valid sample in Stage 1 was 1,622. With an attrition rate of 74% over the three stages the number remaining in the sample at Stage 3 is 428, or 26% of the Stage 1 sample. This imposes limits on the range and power of the data-analytical options, although there remains adequate scope for a broad range of valid and reliable statistical analyses. It should also be noted that 543 individuals – 33% of the initial sample – left the Army at some point between Stages 1 and 3. Of the available respondents – 1,079 remained in the Army throughout the time of the survey – the response rate is 40%, a figure which compares favourably with the rates that are generally expected on a three year longitudinal study of this type[23] .

- Missing data: data that are missing owing to a refusal by participants to continue to take part, or to their injury or death. This can lead to significant differences between the three samples and to the risk of bias in the analysis. This may arise, for example, because individuals who are no longer part of the study share common characteristics, and these no longer appear in the later stages of the analysis. As far as possible, this source of bias is minimised by controlling for any measured differences between samples.

- Modes of data collection: the combination of face-to-face and online surveys is best suited to the circumstances of this study. Whilst face-to-face interviews were practicable in Stage 1, with all respondents located in the UK, there were prohibitive constraints on gaining physical access to the large number of respondents deployed abroad or at sea during the later stages of this study. It is, nevertheless, important to record that two different modes of data collection have been used; that

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[23] It should also be pointed out that participation in the study was voluntary and 47 trainees refused to participate in the further stages of the study after Stage 1. No financial or any other material incentive was offered for participation in the study.

some allowance should be made for the impact of this on the reliability and consistency of the data collection process; and that the computer and literacy skills of respondents are an additional feature that had to be accounted for when comparing data from the face-to-face and online surveys[24].

- Measurement: not all characteristics of sample participants, and not all differences between them, are covered by the variables used in the data analysis. Some characteristics are therefore not measured, and this can lead to 'omitted variable bias.' We cannot eliminate this source of bias in this study but the longitudinal data collected by this study does allow us to control for the constant unmeasured differences – for example, some of the recruits' psychological traits and learning experiences prior to the Army.

- Consistency of individual's responses: in a longitudinal survey the same subjects are interviewed on more than one occasion, and it is therefore possible that responses given at one (later) stage are affected by those provided earlier. Participants may also become reluctant to participate on more than one occasion and subsequently refuse to take part. At the same time, participation in a study of this kind may itself exert an influence on how participants choose to respond. These potential sources of bias cannot be eliminated, but standard statistical techniques are used to minimise any distorting effect on the data.

- Causality: the most rigorous statistical analysis often aims to provide a causal explanation of the outcomes of interest; for example, to demonstrate that an improvement in operational effectiveness is caused by the literacy and numeracy training that recruits previously received. The limitations of this study are such that we cannot confidently offer causal explanations of this type. At the same time, the combined quantitative and qualitative profiles of the Army recruits are sufficiently rich and detailed, and the complementary research designs sufficiently robust, that this study provides explanations for the principal findings that are strongly supported by the evidence and worthy of serious consideration.

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[24] A pilot study was undertaken to identify potential problems with the online survey, and the most significant of these were resolved. But no piloted study can hope to eliminate all risks.

Chapter 5: The Army

5.1 Introduction

This chapter examines the profile and significance of literacy and numeracy skills for individual recruits and the Army as an organisation. A principal theme explored here is the relationship between literacy and numeracy levels and provision on the one hand, and the professional development and operational effectiveness on the other.

This chapter includes evidence from two studies undertaken in parallel: a large-scale quantitative study and a small qualitative study; both explore a similar set of questions, and evidence from each is presented side by side so as to offer a composite analysis of the impact of literacy and numeracy in the Army context.

The chapter consists of:

- an overview of the Army training context (5.2)

- a summary of the sample of personnel involved in the study (5.3)

- a profile of the characteristics and effectiveness of literacy and numeracy provision (5.4)

- an examination of record keeping (5.5)

- soldiers' views on literacy and numeracy and their uses in trades (5.6)

- levels of soldiers' literacy and numeracy and changes to literacy and numeracy in the Army (5.7)

- operational effectiveness (5.8)

- career progression and development (5.9)

- conclusions and recommendations for Army policy and practice (5.10).

Terminology

The recent update to the Armed Forces Literacy and Numeracy Policy, designed to take account of the introduction of Functional Skills, uses the phrase 'literacy and numeracy' where it had previously used Basic Skills – or BS – to include the skills of speaking, listening, reading, writing and numeracy[25]. This chapter retains references to Basic Skills in defining the type of literacy and numeracy provision available, where Basic Skills is used to refer to the Certificates in Adult Literacy and Numeracy. Key Skills is used when referring to provision leading to Key Skills Communication and Application of Number qualifications.

This chapter also distinguishes between two sample groups, the larger quantitative sample and the smaller qualitative sample. Where the term 'sample' is used it refers to the final (Stage 3) samples only. If there is cause to refer to previous research stages this is made explicit – as in, for example, 'the Stage 2 quantitative sample'.

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[25] In 2005 the Government designated ICT as the 'Third Basic Skill'. As with literacy and numeracy, ICT has agreed national standards and a supporting curriculum. ICT in the Services is addressed under a separate policy ('Defence Policy on Computer Users' Training 2007DIN06-087); it is not part of the Armed Forces Literacy and Numeracy Policy and it has not been considered as a basic skill in most of this report. However, because of the impact of ICT on some job roles covered in this study, ICT was included in the survey of skills used by soldiers in their normal job roles.

5.2 The Army training context

Introduction

This section describes the training context for the recruits, the characteristics of the initial training units, and the profiles of the recruits at each of the five units.

Main Findings

All trainees in the sample were assessed at EL3 or below in either literacy or numeracy; the majority were below L1 in both. The highest proportion of new recruits with Entry level literacy was at ITC(C) and ATFC(W) and the highest proportion with Entry level numeracy was at AFC(H).

Provision at AFC(H) takes place over 280 hours, as compared with 16 hours of provision at ATR(B) and ATC(P). This chapter returns to the subject of the relationship between the impact and duration of provision in later sections.

Phase 1 provision is responsive to the profile of recruits at each training unit, and provision is structured differently across units to reflect this profile and the specific trades catered for at each unit.

Initial soldier training units

All soldiers included in this study were trained at one of five Phase 1 training units:

- Infantry Training Centre Catterick: ITC(C)

- Army Training Regiment Bassingbourn: ATR(B)

- Army Foundation College Harrogate: AFC(H)

- Army Training Centre Pirbright: ATC(P)

- Army Technical Foundation College Winchester: ATFC(W)[26].

The sample for the quantitative study included recruits at all five units; the qualitative sample was located at ITC(C), AFC(H) and ATFC(W).

Soldiers are trained at one of the five units, depending on their age and the Arm or Service they are entering. Those joining at age 16 or 17 – known as Junior Soldiers (JS) – attend either AFC(H) or AFTC(W). Those recruits aged 18 and over – known as Standard Entry (SE) – attend either ATR(B) or ATC(P) and/or ITC(C). **The length of the provision varies between each training unit**, depending upon the trade and age of the recruit. For example, a recruit at **ATC(P) will receive about 16 hours of literacy and numeracy**

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[26] Army Training Regiment (Winchester) became the ATFC(W) during the course of the study.

teaching over 14 weeks integrated into their military training, while at **AFC(H) recruits receive 280 hours over 42 weeks**. At ITC(C) the literacy and numeracy provision comprises an intensive two-week programme at the end of Phase 1 and 2 military training (26-28 weeks). In addition, requirements vary according to training unit: for example, AFC(H) recruits must achieve an Level 1(L1)[27] in literacy and numeracy prior to commencing Phase 2 training, while at ITC(C) soldiers trained for the Infantry require the lower level of Entry Level 3 (EL3) in order to move to the Field Army (see Table 5.1)[28].

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[27] These levels have been set by DG ART/CITG, which raises the minimum standards above those needed for Army policy.
[28] In line with Armed Forces Literacy and Numeracy Policy, all Army literacy and numeracy provision will work towards Functional Skills qualifications by September 2012. The transfer (started in late 2010) is taking place in phases. Table 5.1 reflects the position at the end of the Stage 3 research (May 2011).

Table 5.1: Initial soldier training units							
Training Unit	Type of entrants	Gender of entrants	Minimum literacy/ numeracy entry requirement[29]	Literacy/ numeracy educational provision	Phase 1 military training	BS/KS provision Hours are given for both BS/KS	Minimum L&N requirement to start Phase 2
ITC(C)[30]	SE	Male only	EL1	BS[31]	24-28 weeks	Generally 30-60 hours[32] over one–two week period at end of Phase 1 and Phase 2 training	EL3
ATR(B)	SE	Male only	EL2	BS	14 weeks	16 hours of BS integrated into 14 weeks of Phase 1 training	EL3
AFC(H)	JS	Male and female	EL2	KS/FS[33]	42 weeks	280 hours integrated into 42 weeks of Phase 1 training	L1

[29] These minimum requirements apply to a limited number of trades, and most set higher academic standards on entry.

[30] ITC(C) is responsible for training infantry personnel only, whereas the other four training units include personnel from different Arms or Services.

[31] Approximately 80% of the recruits also elect to undertake a series of wider Key Skills ('working with others', 'improving own learning and performance' and 'problem solving'). These and the NVQ courses are built into the 26-28 week Combat Infantryman's Course programme and include some out-of-hours provision. It does not form any part of literacy and numeracy provision at the end of the training course.

[32] Approximately 30 hours is allocated for literacy and 30 hours for numeracy.

[33] During the first two years of the study, recruits took an apprenticeship in IT Users, which included Key Skills in Application of Number and Communication Skills and a set of 'wider Key Skills'. These wider Key Skills have been replaced by an apprenticeship programme. Functional Skills were introduced in September 2010 and Key Skills in Application of Number and Communication Skills are no longer taken.

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ATC(P)	SE	Male and female	EL2	BS	14 weeks	16 hours of BS integrated into 14 weeks of Phase 1 training	EL3
ATFC(W)	JS	Male and female	EL2	BS	22 weeks	42 hours of BS integrated into 22 weeks of Phase 1 training	L1

At ITC(C), 80-85% of trainees pass out with EL3 qualifications in literacy and numeracy (around 15% attain L1)[34]. Data on the number of trainees passing out at each of the other four training units from 'typical' cohorts in 2010 show that no trainees passed out at EL2. Although there were no data available for numeracy at ATR(B), 64% passed out with literacy at L1 and 36% at L2. At Harrogate, 89% in literacy and 87% in numeracy passed out at L2 which gives them an advantage over trainees at other units, in terms of meeting the literacy and numeracy standards required for promotion (see Table 5.2)[35]. This would seem also to provide them with better opportunities for career development and improve their potential employability when they return to civilian life. At ATC(P) 45% and 42% passed out in literacy at L1 and L2 respectively and 10% and 63% in numeracy at L1 and L2. At ATFC(W) 68% and 25% passed out in literacy at L1 and L2 respectively and 63% and 37% in numeracy at L1 and L2 (100% of the entire cohort at ATFC(W) had either L1 or L2 in numeracy and only 7% had literacy at EL3)[36]. **However, any comparison of outcomes should take account of differences in recruits' profiles across each of the units and the varying levels of provision provided.**

Table 5.2: Percentage of trainees passing out at each training unit with literacy or numeracy qualification by qualification level

Training Unit	EL3		L1		L2	
	Literacy	Numeracy	Literacy	Numeracy	Literacy	Numeracy
ATR(B)			64%		36%	
ITC(C)	-	-	-	-	-	-
AFC(H)			11%	13%	89%	87%
ATC(P)	13%	27%	45%	10%	42%	63%
ATFC(W)	7%		68%	63%	25%	37%

Note: No data split by level were available from the ITC(C). No data were available for numeracy at ATR(B).

The highest proportion of recruits with Entry level (EL) literacy included in the quantitative study was found at ATFC(W) (86%) and ITC(C) (82%). The highest proportion of recruits with L1 or L2 literacy was found at AFC(H) – 40% (see Table 5.4).

The largest proportion of recruits with Entry level numeracy included in the quantitative study was found at AFC(H) – 96%. The highest proportion of recruits with numeracy skills above Entry level was found at ATR(B) – 35% (see Table 5.5).

Tables 5.6 and 5.7 (Appendix A) show the literacy and numeracy levels for all Army entrants by Initial Training Unit, offering a comparison with the distribution of skills in the quantitative sample.

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[34] In relation to ITC(C) and AFC(H) these figures are estimations taken from educational staff; they do not constitute official statistics.
[35] Whilst this is an advantage over others it is just one of many requirements for promotion. (The extant BS policy requires L1 in Literacy and Numeracy for promotion to Cpl, Sgt and WO2. From Apr 12, L2 will be required for promotion to Sgt and WO2.)
[36] Eith the exception of the data from ATC(H), the percentages are based on relatively low numbers (see Table 5.3, Appendix A).

Table 5.4: Quantitative Sample (Stage 1): IA in literacy at Army recruiting centres, by training unit[37]					
	Percentage of Intake at each unit				
	ATR(B)	ITC(C)	AFC(H)	ATC(P)	ATFC(W)
L2	4	2	18	4	1
L1	20	16	22	20	13
L1 or above	24	18	40	23	14
EL3	68	67	53	65	71
EL2	6	11	6	10	13
EL1	2	4	2	2	2
EL3 or below	76	82	60	77	86
Total N	190	507	194	434	289

Table 5.5: Quantitative Sample (Stage 1): IA in numeracy at Army recruiting centres, by training unit					
	Percentage of Intake at each unit				
	ATR(B)	ITC(C)	AFC(H)	ATC(P)	ATFC(W)
L2	21	9	1	11	13
L1	14	9	4	9	9
L1 or above	35	17	4	20	22
EL3	60	75	79	72	71
EL2	5	7	12	7	6
EL1	1	1	5	1	1
EL3 or below	65	83	96	80	78
Total N	190	506	196	436	288

Any comparisons between units should take account of differences between the profiles of their recruits. Phase 1 literacy and numeracy provision is responsive to the trainees' age and their expected employment specialisation in the Army, which in turn is governed by their general aptitude and level of qualifications. This is one of the significant factors that determines how literacy and numeracy provision is organised and structured at each unit, including the amount of time and resources given to classes, both of which have to compete against the strict demands of the Army training pipeline developed for each training unit.

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[37] Figures provided by the Army recruiting centres.

5.3 The sample

Introduction

This section provides details of the qualitative and quantitative samples used as the basis for gathering evidence, together with a summary of the educational and socio-demographic profiles of the soldiers included in both of the samples.

To provide a context for the two samples, Table 5.8 provides an overview of Initial Assessment (IA) scores across the Army in 2010. This table shows that, whilst 40% of army recruits are at EL3, 5% of recruits are at Entry Level 1 (EL1) and Entry Level 2 (EL2) in literacy, and 2% at EL1 and EL2 in numeracy. At higher levels, the Army has 41% of recruits entering with literacy at L1 and 16% with numeracy at L1. These data can inform decisions about where resources for literacy and numeracy provision are most effectively targeted.

Table 5.8: Levels of literacy and numeracy at IA in the Army in 2010				
	Literacy		Numeracy	
Level	Number	%	Number	%
EL1	82	1	20	0 (0.2)
EL2	331	4	134	2
EL3	3265	40	3257	40
L1	3322	41	1322	16
L2	1138	14	3405	42
Total	**8138**	**100%**	**8138**	**100%**

Note: Figures have been rounded to the nearest whole number

Main Findings

A significant proportion of recruits assessed at Entry level literacy and numeracy reported a Grade A*-C in their English and maths GCSEs. Some allowance should be made for errors associated with self-reporting, and for the fact that GCSE qualifications incorporate standards and purposes very different to those that apply to the process of Initial Assessment. Nevertheless, this raises a question about how far GCSE qualifications have led to literacy and numeracy gains, and how far these qualifications serve as a useful guide to the levels at which recruits are functioning on entry to the Army.

The educational profile of recruits who participated in the study was similar in both the quantitative and qualitative samples. In those samples, recruits are typically British and aged between 16 and 20, they did not enjoy school and have Entry level literacy and numeracy skills.

Fifteen percent of trainees reported having at least one MOD recognised SpLD, and recruits with the lowest levels of literacy and numeracy were most likely to report this. Sixty-two percent of trainees had left full-time education by age 16. Recruits with Entry level skills were most likely to report 'never' enjoying school, and 11% of all recruits had been permanently excluded.

The qualitative sample

The qualitative study was designed to provide a detailed account of the profiles of a small sample of recruits, and in-depth analysis of the impact of literacy and numeracy levels on their professional development and operational effectiveness. The sample is **not** intended to be representative of all recruits in the Army; rather, the aim is to provide a series of insights into the careers of individuals selected into the study, and to use this in-depth evidence to illuminate evidence from the quantitative study.

The soldiers

At the beginning of this study in 2009 the qualitative sample comprised 26 recruits from three Phase 1 training units: ITC(C) (11 soldiers under training [SuTs]); AFC(H) (eight JS); and ATFC(W) (seven JS)[38]. Several soldiers became unavailable at subsequent stages of the study, as a result of pre-deployment training, operational deployment, injury or having been discharged. Twenty soldiers participated during Stage 2 and 14 soldiers participated in Stage 3 (see Table 5.6, Appendix A for a summary of the final sample's characteristics).

Whilst drawing on evidence from soldiers participating in any one of the three stages of the research, the focus is largely on the final qualitative sample group whose progress can be followed in detail over time, allowing for an exploration of changes in their skill levels and the impact of this on their performance and effectiveness. The 14 soldiers included in

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[38] These 26 recruits were also included in the quantitative sample.

Stage 3 served in five different Arms or Services (see Table 5.9)[39]. Four soldiers were formally diagnosed as having a SpLD, and two were considered as having severe difficulties[40][41].

The qualitative sample group have progressed during the course of the study. Eight of the 14 trainees have achieved a literacy qualification one level higher than their IA, and three achieved qualifications two levels higher. Seven trainees have achieved a numeracy qualification one level higher than their IA, and two have achieved qualifications two levels higher. However, at the time of writing seven still needed to achieve a L1 qualification in either literacy or numeracy within the following calendar year in order to fulfil the requirements of the Armed Forces Literacy and Numeracy Policy to gain a L1 qualification within three years.

Table 5.9: Summary of literacy and numeracy IA of the Qualitative Sample						
Trainee No.	Arms or Service	Literacy at IA	Numeracy at IA	Literacy level at 1 January 2011	Numeracy level at 1 January 2011	SpLD
1	Infantry	EL2	EL3	EL3	EL3	Dyslexia Mild
2	Infantry	EL2	EL2	EL3	EL3	
3	Infantry	EL1	EL2	EL3	EL3	
4	Infantry	EL3	EL3	EL3	EL3	
5	Infantry	EL2	L1	EL3	L1	
6	Infantry	EL3	EL3	EL3	EL3	
7	RA	EL3	EL3	L2	L1	
8	AAC	L1	EL3	L2	L2	
9	RAMC	EL3	L1	L2	L1	Dyscalculia[42]
10	Infantry	EL3	EL2	L1	L1	
11	RA	EL3	EL3	L1	L1	Dyslexia Severe
12	RA	EL3	EL3	L1	L1	
13	RAC	EL3	EL3	L1	L1	Dyslexia Severe
14	RAC	EL3	EL2	EL3	EL3	Dyslexia Mild

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[39] Although the sample might appear weighted in favour of Combat Arms, which includes the Infantry, it should be noted that the Infantry is the largest Arm of the Army Service, making up 26% of all personnel, and includes the highest proportion of Army personnel with BS needs.
[40] On the basis of their Dyslexia Adult Screening Test (DAST) scores.
[41] The final Stage 3 sample included 11 men and 3 women; 13 white British soldiers and one Black/black British soldier; and an age range of 18-30 (average age of 20).
[42] Although this trainee said she had not had her dyscalculia formally diagnosed, she also said that she was given support during her Phase 1 training, and extra time in taking KS tests.

Other personnel interviewed as part of the qualitative study

Throughout the study personnel other than soldiers were interviewed, including line managers, whose testimony shed light on and provided a point of comparison with the testimony of the soldiers themselves.

During Stage 3 a total of 45 Army personnel were interviewed between February and March 2011. Fourteen[43] soldiers in their first appointments in the Field Army were based at 11 Army sites or units in the UK and Germany[44]. Fourteen military staff (a combination of NCOs and Officers) were interviewed: one Corporal, four Sergeants, five Staff Sergeants and one Warrant Officer Class 2; one Second Lieutenant and two Lieutenants. Thirteen of these personnel were line managers of the soldiers[45].

Fourteen[46] educational and administrative staff – either military staff or civilians from external provider organisations – were also interviewed. These included an Officer in the Adjutant General's Corps (Educational and Training Services); an Officer Commanding (OC) at an AEC; a Chief Instructor (CI), and a Learning and Development Officer (LDO). Civilians included one Team Leader within the apprenticeship programme; five MOD Basic Skills Development Managers (BSDMs); two Basic Skills tutors; a Learner Centre Manager (LCM), and one Administrative Clerk.

Three senior officers representing the Chain of Command were also interviewed.

Quantitative sample

The quantitative sample was randomly drawn from all new recruits initially assessed with Entry Level literacy or numeracy, and who started their Phase 1 training between 5 January 2009 and 31 March 2009 (the 'sampling window'). The sample includes recruits from all five Phase 1 training units, reflecting both overall numbers and the proportion of trainees at each establishment assessed as having Entry Level skills. Table 5.10 presents the sample selection and number of interviews at each training unit[47].

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[43] Six of the 14 soldiers underwent initial training at ITC(C); five at AFTC(W); and three at AFC(H).

[44] The sample lost two soldiers who were in the Royal Logistic Corps (RLC) during Stage 2.

[45] The majority of the line managers described knowing the soldiers between 'very well' or 'quite well', and so were able to comment on the individuals' attitudes, performance, progress and potential, and their OE, and to make an assessment on their level of literacy and numeracy skills.

[46] One brief informal interview was conducted with a Regimental Career Management Officer.

[47] Although there was some discrepancy between the numbers of planned and achieved interviews, this is controlled for in all analyses.

Table 5.10: Selecting the quantitative sample					
Training Unit	No. of all Army recruits starting Phase 1 training in Sampling Window	% with Entry Level literacy or numeracy skills	No. eligible for sampling	No. sampled for interview	No. interviewed
ATR(B)	816	60%	490	200	198
ITC(C)	1176	65%	764	470	520
AFC(H)	488	70%	342	200	200
ATC(P)	1248	70%	874	500	446
ATFC(W)	640	80%	512	330	295
Total	4368		2982	1700	1659[48]

Quantitative sample IA scores

All trainees selected into the quantitative sample were assessed with Entry level literacy or numeracy skills at IA during recruiting and selection, and the majority were assessed at EL3. Figures 5.1 and 5.2 show the distribution and number of trainees by their literacy and numeracy skills respectively in Phase 1 training.

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[48] Whilst 1659 interviews were completed, **the final valid sample size for the first stage of the study was 1622**. Of the 1659, 18 trainees were assessed at L1 or higher in both literacy and numeracy and were not eligible to participate in the survey were excluded from the Stage 1 and subsequent analyses. This slight deviation from the sample is explained by the fact that IA data was available after the Stage 1 fieldwork took place and it was possible to validate IA levels in literacy and numeracy. Similarly, those additional 19 trainees with no available IA scores were also excluded.

Figure 5.1: Literacy Levels at IA (%)
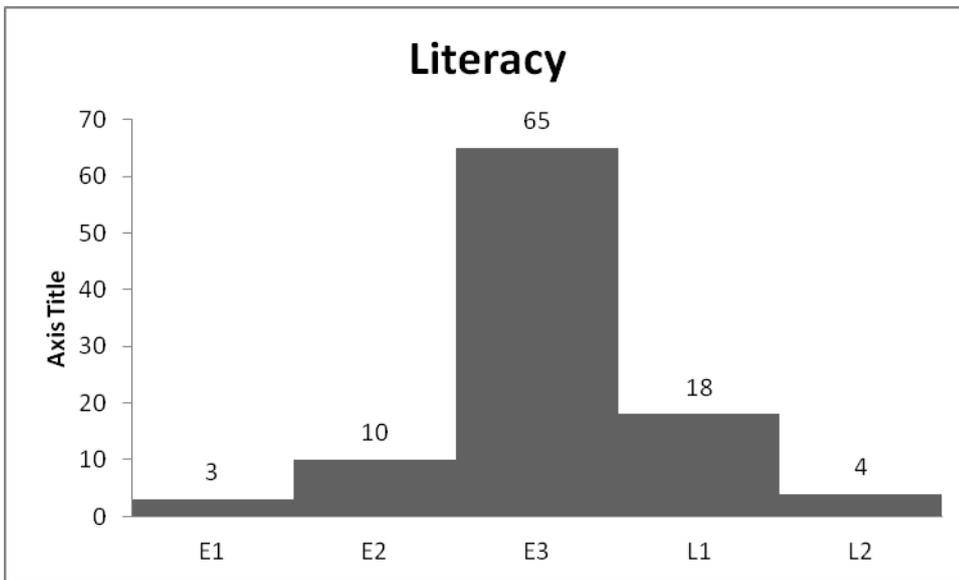
Note: Literacy: E1 (n=41), E2 (n=160), E3 (n=1055),
L1 (n=287), L2 (n=69)

Figure 5.2: Numeracy Levels at IA (%)
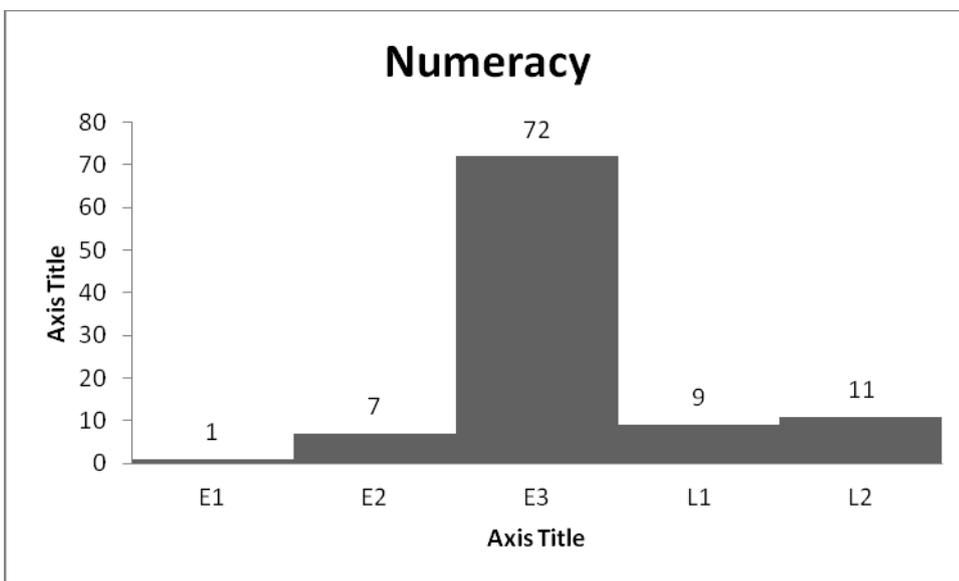
Note: E1 (n=19), E2 (n=114), E3 (n=1169), L1 (n=142), L2 (n=171)

Around one in five of the initial quantitative sample group had either literacy or numeracy at L1 or L2. The break-down of the skills sets are presented in Table 5.11.

Table 5.11: Stage 1 Quantitative Sample by literacy and numeracy skills profiles			
Literacy	**Numeracy**	**No. of Recruits**	**Percentage (%)**
EL2 and below	EL2 and below	63	4
EL2 and below	EL3	119	7
EL2 and below	L1 or L2	18	1
EL3	EL2 and below	58	4
EL3	EL3	700	44
EL3	L1 or L2	295	18
L1 or L2	EL2 and below	11	1
L1 or L2	EL3	345	21

Note: 3% of recruits had EL1 literacy skills and 1% had EL1 numeracy skills – 57 trainees in total[49].

Specific Learning Difficulties (SpLDs)

Trainees were asked if, before they joined the Army, they knew if they had been diagnosed with dyslexia, dysgraphia, dyspraxia, dyscalculia, attention deficit disorder (ADD), attention deficit hyperactivity disorder (ADHD), autism, Aspergers or Meares-Irlen syndrome.

18% (n=292) of trainees self-reported that they had one of these SpLD (16% reported one SpLD, 2% a combination of SpLDs). Dyslexia was by far the most widely reported SpLD (14%), followed by ADD and ADHD (3%).

The MOD policy on SpLD currently supports trainees and staff with dyslexia, dyspraxia, dyscalculia, and Meares-Irlen syndrome. 15% (n=243) of trainees reported having one of these SpLDs; 235 reported dyslexia; 15 dyspraxia; 9 dyscalculia, and 2 reported having Meares-Irlen syndrome. Further analysis reflects only those SpLD that are currently supported by the MOD policy.

Those with the poorest literacy and numeracy were the most likely to self-report a SpLD. 29% of recruits with EL1 or EL2 literacy and 23% of recruits with EL1 or EL2 numeracy reported a SpLD compared with 14% with EL3 literacy and 10% with L1 or L2 literacy and 15% with EL3 numeracy and 12% with L1 or L2 numeracy (see Figure 5.3).

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[49] 35 of the 57 were training to be infantrymen at either ITC(C) (n=22) or as junior recruits at AFC(H) (n=7) or ATFC(W0 (n=6) who will transfer to ITC(C) to complete their training. The remaining 22 recruits were following various trades and were in Phase 1 training in ATR(B) (n=4), AFC(H) (n=5), ATC(P) (n=11) and ATFC(W) (n=2).

Figure 5.3: Percentage of Quantitative Sample reporting a SpLD by IA levels in literacy and/or numeracy
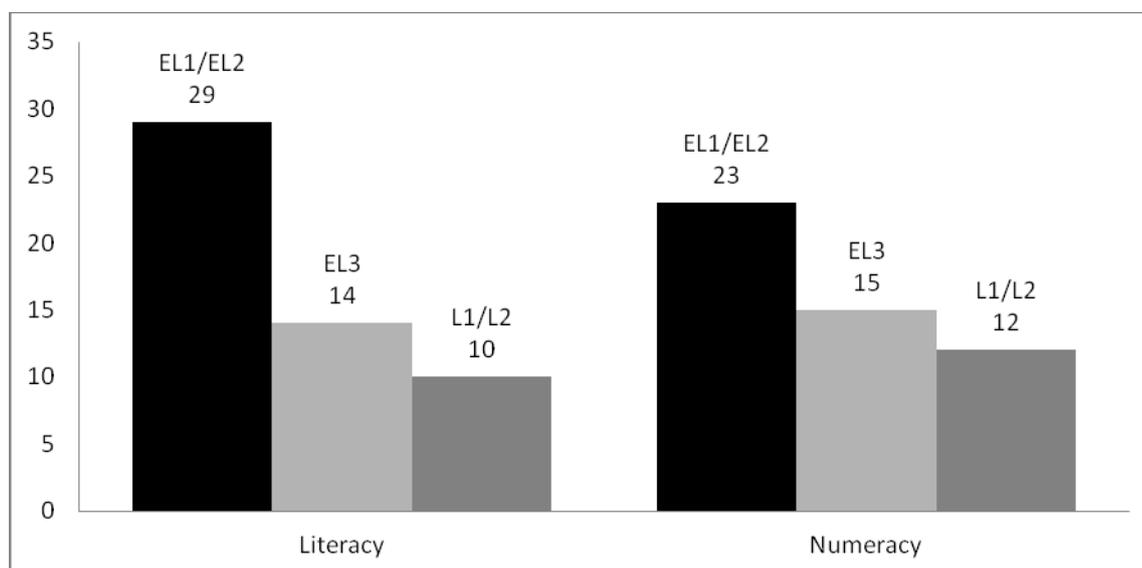
Among the 15% of trainees reporting a SpLD, only 43% of these had received a statement of needs prior to joining the Army, and a further 13% 'didn't know' if they had been given a statement or not.

Recruits with EL1 or EL2 literacy were most likely to report that they had received a statement of needs: 55% compared with 40% of trainees with EL3 literacy and 29% with L1 or L2 literacy. The data did not show any relationship between a recruit's numeracy level and receipt of a statement of needs. It has to be taken into account that the overall number of those with a statement is low, and that there was a small proportion of respondents who reported dyscalculia which relates closely to numeracy skills.

Among trainees with a SpLD and who had also received a statement of needs (n=101) prior to joining the Army, 2% reported they had received extra time to complete tests, 61% reported they had not received any extra time to complete any tests and 36% reported that they had not yet completed a test.

Recruits were asked if they had been told whether they had any SpLDs since joining the Army[50]. Sixteen recruits[51] reported that they had been told that they had a SpLD. For these trainees, the most common SpLD was dyslexia (8 recruits); 3 had dysgraphia[52] and 2 dyscalculia.

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[50] The options included dyslexia, dysgraphia, dyspraxia, dyscalculia, attention deficit disorder (ADD), attention deficit hyperactivity disorder (ADHD), autism, Aspergers or Meares-Irlen syndrome or other (a category including non-MOD recognised conditions which are unlikely to be diagnosed within the Service).
[51] In addition to those in Stage 1.
[52] Dysgraphia is not one of the four SpLDs recognised by the MOD.

Education profile of quantitative sample

62% of all trainees in the sample left full-time education by the age of 16. Those most likely to have experienced post-16 education were those with L1 or L2 numeracy (46% compared to 36% out of those with Entry level numeracy).

Many recruits left education with poor academic qualifications: 30% of all recruits had no GCSE qualifications in any subject at any grade; recruits with EL1 or EL2 skills were least likely to have a GCSE, and recruits with Level 2 skills the most likely (see Figure 5.4). 48% of respondents had GCSEs grade A*-C as their highest grade, and 22% grades D-G.

More than one-third of all recruits did not have a GCSE in English and/or maths (36% did not have English and maths, 2% had maths but not English and 3% English but not maths). This proportion increased to around four-tenths among those with EL1 or EL2 numeracy skills. As Figures 5.5 and 5.6 illustrate, no more than 1 in 10 recruits with EL1 or EL2 skills reported having a GCSE grade A*-C in English or maths compared with a little under half (45% of those with L2 literacy and a just over a third (36%) with L2 numeracy).

Figure 5.4: Highest overall level of GCSE qualification in any subject, by literacy and numeracy IA for quantitative sample

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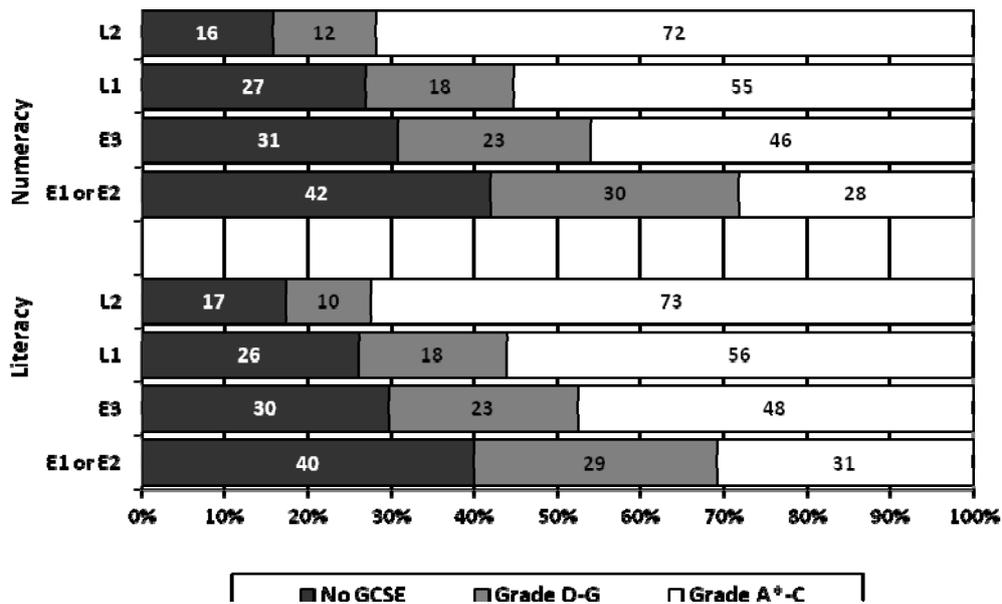
Figure 5.5: Highest English GCSE Grade by Literacy Level

Literacy	No GCSE	Grade D-G	Grade A*-C
L2	19	36	45
L1	32	46	22
E3	37	43	19
E1 or E2	46.2	45.2	8.5
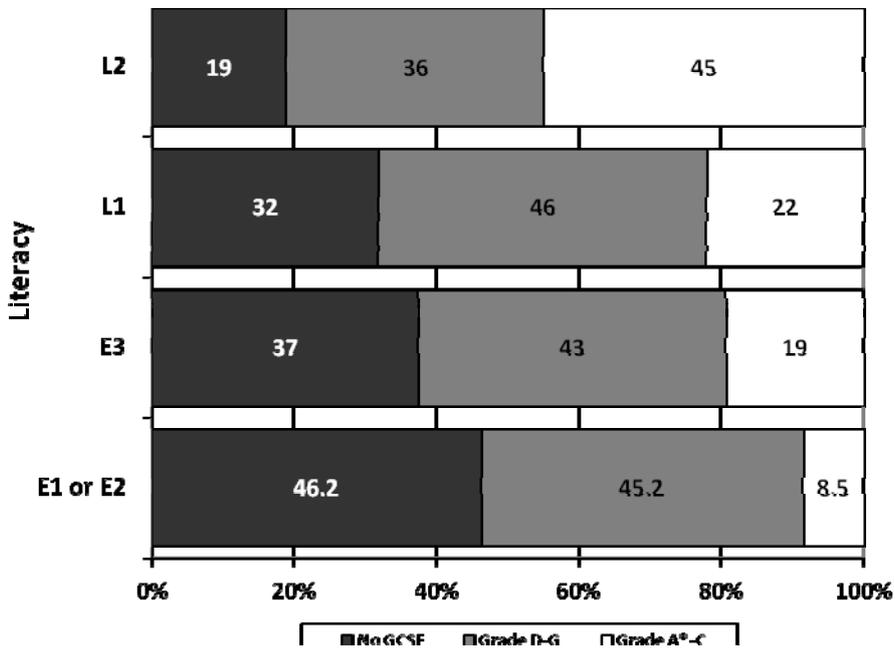
Figure 5.6: Highest Maths GCSE Grade by Numeracy Level

Numeracy	No GCSE	Grade D-G	Grade A*-C
L2	19	45	36
L1	32	37	30
E3	36	41	23
E1 or E2	48.5	41.7	9.8

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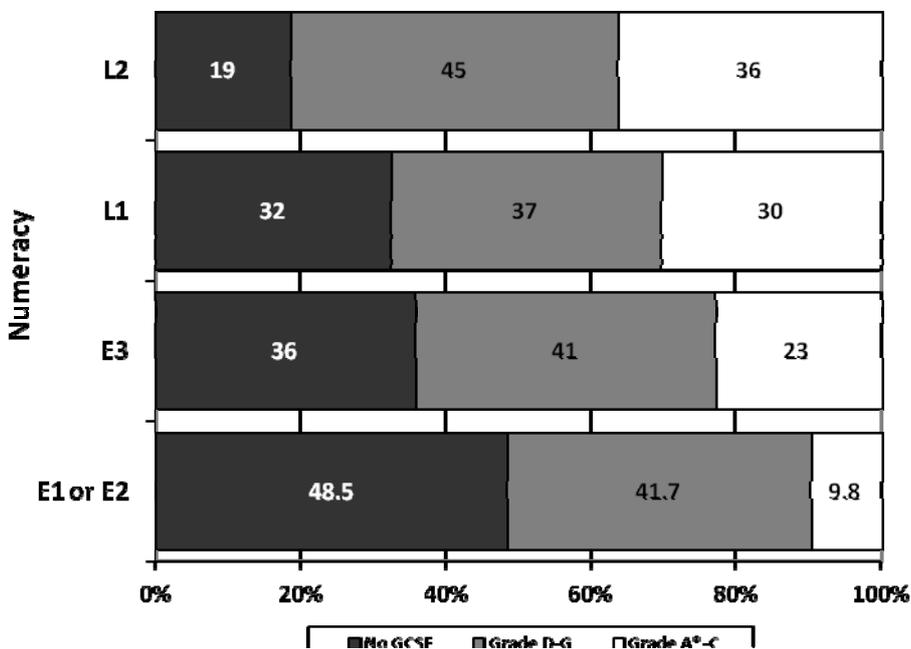
9 % of recruits assessed on entry to the Army at EL1 or EL2 in literacy, and 19% of recruits at EL3, reported holding a Grade A*- C in their English GCSE. 10% of recruits assessed at EL1 or EL2 in numeracy, and 23% of recruits assessed at EL3, reported holding a Grade A*- C in their maths GCSE. Even allowing for errors associated with self-reporting, **these findings raise a question about how far GCSE qualifications serve as a useful guide to the level recruits are functioning at on entry to the Army.**

To explore how recruits had fared at school we asked them whether they had enjoyed school, liked their teachers, truanted or were temporarily or permanently excluded.

Recruits with Entry level skills were most likely to report 'never' enjoying school (highest at 27% among recruits with EL1 or EL2 numeracy) and recruits with L2 skills were the least likely (13% of those with L2 numeracy and 16% with L2 literacy). More than half of trainees reported that they had truanted from school – 43% 'some of the time' and 14% 'most of the time'. Recruits with EL1 or EL2 literacy were most likely to have been temporarily excluded from school (53%), recruits with L2 literacy the least likely (38%). Differences were not as pronounced across numeracy groups (46% for EL1 or EL2 compared to 41% for L2).

11% of all recruits had been permanently excluded. This increased slightly to 14% among recruits with EL1 or EL2 literacy or numeracy, and was lowest (at 8%) among recruits with L2 numeracy.

Attrition of quantitative sample

Table 5.12 provides more information on the status of the sample at the time of the Stage 2 and Stage 3 surveys together with the primary reasons for their not taking part in these follow-up surveys.

Table 5.12: Attrition in the Stage 2 and 3 samples				
Survey Completions and Reasons for Not Completion	**Stage 2**		**Stage 3**	
	N	**%**	**N**	**%**
Completed questionnaire	666	41	428	26
Partial data	14	1	8	1
Outstanding cases[53]	447	28	354	22
Discharged from Army	401	25	543	33
Voluntary withdrawal from the study	42	3	47	3
Unavailable for interview[54]	27	2	168	10
Not contacted[55]	23	1	66	4
Recruit started survey, no useable data	2	0	8	1
Total (Stage 1 completions)	**1622**	**100**	**1622**	**100**

[53] This category includes those who failed to fill in the survey without any specific reason known to the research team.
[54] This category included injury or death, Absence Without Leave (AWOL) and being on combat operations with no access to PCs to complete the on-line survey. These data were collected in Stage 3 fieldwork only.
[55] For Stage 2: 'Lost' cases – recruit details unclear and the follow up was not possible. For Stage 3 – still in training and not eligible for participation in the survey.

The most common reason for survey attrition (a loss in sample size due to non-response) is that participants from the original sample left the Army: between Stage 1 and Stage 3, **543 of the 1622 trainees (33%) left the Army.** Further analysis of the retention in the Army is covered in section 5.9. Recalculating the retention rate to exclude those who left the Army sees it rises to 40% at Stage 3[56].

Despite the level of attrition, the completed survey responses (428) are of a sufficient magnitude to allow for robust analysis of the data, both across the sample as a whole and in respect of groups within the sample on which additional analysis was conducted. Equally, the validity of the findings is not compromised by the fact that some questionnaires were completed after the completion of Phase 1 and Phase 2 training (i.e. outside the planned time for the specific staged survey); any trends in the data which correlate with the time interval between training and questionnaire completion are identified and accounted for[57].

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[56] The profile of recruits who left the Army is analysed in section 5.9.
[57] For more details on sample attrition, and accounting for consequent variations in the sample, see Appendix B.

5.4 The characteristics of literacy and numeracy provision

Introduction

This section provides a summary description of the characteristics of literacy and numeracy provision as found in Phase 1 and Phase 2 training, and in the Field Army. The most significant characteristics are examined at greater length at other points in this report.

Main Findings

Literacy and numeracy provision is free for soldiers, and the overarching aim is to improve their literacy and numeracy skills in order to increase their trainability, support their professional and personal development, and enable them to attain nationally accredited qualifications.

Where military trainers and educational staff liaise effectively, such as at AFC(H), they gain insights into the needs and demands of their respective contexts.

The majority of soldiers who undertake Apprenticeship training will achieve L1 literacy and numeracy qualifications as part of that course. This process contributes to the policy aim that all soldiers should achieve L1 within three years of joining the Army.

Some soldiers wish to improve a particular aspect of their literacy and numeracy, such as spelling and grammar, or subtraction and multiplication. At 3 AEC, face-to-face personalised provision is available where 'Essential Skills' classes are run as half-day workshops on a regular basis.

In the Field Army most courses are intensive and scheduled to take place within one or two weeks, fitting around existing work and training commitments.

Organisation of provision: overview

Literacy and numeracy provision in the Army is mandated through policy to meet the needs of its personnel: it is delivered largely in working time, initially at one of the five Phase 1 training units, then through the Army's extensive Apprenticeship programmes in Phase 2 training and, finally, in the Field Army, through its Army Education Centre (AEC) network. For the soldiers, **literacy and numeracy provision is free**, and the **overarching aim is to improve their literacy and numeracy skills to improve their trainability, support their professional and personal development, and to attain nationally accredited qualifications**.

As with most Army training, literacy and numeracy provision in Phase 1 and 2 training tends to be intensive, offered on what might be described as a 'just enough, just in time' basis and is fashioned and scheduled to be accommodated within the tight military training, workplace and operational regimes. In recent years, the highly pressurised operational tempo has made such accommodation particularly challenging. As one officer from the higher chain of command stated: **'time is the single biggest problem'**.

In addition to the Phase 1 training units, literacy and numeracy provision is organised and delivered through a network of 13[58] Army Education Centres (AECs) and 94 subordinate ICT-based Army Learning Centres (eLCs). There are a total of 35 specialist Basic Skills Development Managers (BSDMs) working within the AECs together with Learning Development Officers (LDOs)[59]. All this activity is managed and overseen by the OC of the AEC.

Literacy and numeracy are delivered as part of Basic Skills, Key Skills or Functional Skills provision, either through in-house facilities or through publicly-funded, external providers. Additional support is provided for those who experience problems with literacy or numeracy and for those diagnosed with a SpLD such as dyslexia.

Literacy and numeracy provision in Phase 1 training

Qualitative sample: experiences of Phase 1 Training

During the initial weeks of training recruits have quickly to assimilate the expectations that go with their new role, and they are under continual scrutiny from peers and superiors as they adjust to the demanding routine. They are assessed every day on what they know, what they have learnt and how they perform in their military training. Many trainees in the qualitative sample who were not used to listening and responding to detailed sets of instructions, spoke of suffering from 'information overload'.

It is in this context that the majority of trainees undertook literacy and numeracy provision. For many, this was an unwelcome return to the classroom, and **trainees reported that they did not expect such a high proportion of their time to be spent in classroom-based education.** For some trainees interviewed, particularly at ITC(C), there was a perception that literacy and numeracy skills are not generally necessary for their job, and this assumption was one of the attractions of joining the Army.

Participation in and response to literacy and numeracy provision

Recruits in the quantitative sample were asked if they took any literacy and/or numeracy classes in Phase 1 training. 59% of the Stage 2 sample reported that they attended literacy classes during their Phase 1 training; a smaller proportion, 50%, attended numeracy classes.

Recruits who began their Army career with Entry level numeracy were more likely to report taking Maths or numeracy classes during Phase 1 training than those who were assessed at a higher numeracy level (52% of Entry level and 43% of L1 or above took maths or numeracy classes at Phase 1). This is in line with the policy objective of raising all recruits to EL3 before the start of Phase 2 training.

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[58] This relates to 23 physical centres.
[59] There are also 23 BSDMs working in the Army Recruiting and Training Division (ARTD).

Phase 1: Classroom management and practice

The study was unable to observe any Phase 1 literacy or numeracy provision taking place. However, trainees and tutors reported that it was usually classroom based with trainees arranged in small groups, and for most of the lesson time tutors worked with learners individually.

All trainees in Phase 1 are expected to copy up their notes from training into a 'Best Book', which can be used for revision purposes and serve as a point of reference. The books are inspected periodically by Officers and NCOs and there are sanctions for books judged not to be at a sufficiently high standard. Trainees with SpLDs or weak literacy skills generally took far longer than their peers to copy up their notes, and there is therefore a disproportionately negative effect for Entry Level learners of copying notes into 'best books'.

Class sizes on average were 18 at ITC(C)[60], 20 at ATFC(W)[61] and 16 at AFC(H). Staff attempted to **contextualise literacy and numeracy delivery to Army activities and procedures at each unit; this was particularly evident at AFC(H).**

Although writing is not assessed in the L1 and L2 adult literacy assessments, trainees participate in 'free' writing activities at ATFC(W) and ITC(C)[62]. However, it is unclear how widespread or effective this practice is.

The educational programme at ITC(C) (which follows the Phase 1 and 2 combined training) is designed for learners working towards EL3 and makes use of a distinctive set of assessment criteria. Although externally accredited, it is internally marked by BS tutors and the test is not multiple-choice. This allows tutors to offer a more personalised form of learning and to concentrate on trainees' specific weaknesses such as punctuation or spelling. In some respects, this can be viewed as a programme which aims to equip trainees with the skills they need in further military training – in relation to writing notes for example.

Liaison between educational and military staff

Most of the Army staff that we spoke to at ITC(C) and ATFC(W) in Phase 1 were generally positive about the educational provision, although a few remained to be convinced of its worth[63].

Liaison was effective at AFC(H), where military trainers regularly visited educational classes to talk about their roles and responsibilities in the Army and how this relates to trainees' literacy and numeracy ability and progress. The study does not

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[60] There is a ratio of 6 trainees to one tutor in these classes
[61] At ATFC(W) class sizes range between 6-28, depending on intake. Class sizes for those working at EL2 averaged around eight.
[62] This is not to suggest that it did not take place at AFC(H); rather that this is something we did not observe and was not explored in interviews..
[63] For instance, at ATFC(W), two of the Officers referred to the organisation of the educational classes as being 'pink and fluffy', implying that it was unstructured, lacking discipline, and using a high proportion of group discussion.

have enough evidence to make any similar judgements about training at ITC(C) or ATFC(W).

All military staff attend a two-week Army Staff Leadership School (ASLS) course, a course also attended by educational staff at AFC(H). The training for military and educational staff includes observing training sessions, and identifying where and how literacy and numeracy skills are needed to improve understanding and achievement in Army training in other contexts.

Literacy and numeracy provision in Phase 2 training

'Front-loading' and 'integrating' provision

In the opinion of those senior officers interviewed, the **preferred model of literacy and numeracy includes provision scheduled at the beginning or at an early stage and integrated into the military programme**, so as to enable trainees to apply these skills to their training. These officers took the view that the 'bolt-on' model at ITC(C), whereby literacy and numeracy provision is delivered in two weeks at the very end of Phases 1 and 2, was inefficient and inappropriate, providing necessary literacy and numeracy skills after a period of time when they were most needed. One soldier recalled how it would have been useful to have developed writing skills before his military training had begun, admitting that he 'couldn't really write' and that this affected his ability to learn information from PowerPoint slides.

One senior officer had worked with military trainers to find out the level of reading required in texts used in PowerPoint slides and Army manuals. In her opinion, many texts required L1 literacy. If that is correct, many trainees, and particularly those from ITC(C), would struggle to read a presentation in military lessons, copy it down and write it up neatly into their 'Best Book'.

Apprenticeships

The **purpose of Phase 2 is trade-training, that is, to give trainees the technical knowledge and practical skills they will need to do their jobs**. Currently, up to 70% of personnel undertake one of the Army's Apprenticeship programmes, although this percentage is set to rise when the Army introduces an Apprenticeship in Public Services for the infantry at ITC(C). From September 2011 it is intended that 95% of trainees will undertake an apprenticeship course. Although apprenticeships are elective and not compulsory, almost all those trainees eligible do undertake an apprenticeship.

The Army currently runs 43 apprenticeship programmes in seven sectors, with 13 contracts, delivered in 12 Phase 2 training schools and in Phase 1 at AFC(H). Apprenticeship frameworks include a work-based learning qualification such as an NVQ, a relevant knowledge-based qualification and a minimum of L1 Key Skills or Functional Skills[64].

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[64] By organising training to align with the apprenticeship criteria the Army is entitled to receive Government funding. In 2010-11, the Army will receive approximately £15million for 16-18 apprenticeships, and almost £12 million for 19+ apprenticeships, although this is for non-military aspects of the Apprenticeship only.

Since the apprenticeship training includes a minimum of L1 Functional Skills/Key Skills as a mandatory element, this will enable most trainees to achieve the policy aim that all soldiers need to gain Basic Skills at L1 within three years of joining the Army. It should be noted, however, that there will remain those that do not take an apprenticeship as well as a small number who may not achieve their apprenticeship but still pass into the Field Army.

Most of the Army's apprenticeship schemes are delivered by external providers and employ a wide range of delivery models. The literacy and numeracy elements of the Apprenticeship may be front-loaded, integrated into the military training, or scheduled to take place when soldiers are in the Field Army. While some respondents favour a mixture of the first two of these models, there is also an understanding of the **practical problems which lead to many schemes not covering the literacy and numeracy elements until trainees have joined the Field Army**. **There is limited time for literacy and numeracy provision within the training pipeline** and it is sometimes easier for trainees to become available for education once they have entered the Field Army.

Educational Provision in the Field Army

Once soldiers begin their employment in the Field Army they must build in time to visit the AEC or eLC if they need or want to improve their literacy and numeracy skills and gain further qualifications. Many NCO made the point that **it can be difficult to fit educational provision into the busy military training lines**. One gave the example of soldiers preparing for deployment: they would need three months preparatory training, six months on active service, and then two or three months leave and recuperation.

There are three main routes soldiers can take to gain further qualifications: attending face-to-face classes run by in-house provision; attending face-to-face provision run by outside providers; attending individualised computer-based learning using external ICT products at the eLC.

Most courses are intensive and either scheduled to take place within one or two weeks or organised as 'drop-in' style. These models are the most practicable for **fitting around work and training commitments**; few soldiers, for example, are able to attend regular classes over an extended period, especially in work time and also in their own time.

Soldiers can generally study for both the Certificates in Adult Literacy and Numeracy or GCSEs, although this largely depends on the size of the unit where the AEC is based. Four AECs were visited during Stage 3. Using 27 AEC (Edinburgh) as an example, the BSDM ran five-day intensive adult literacy and numeracy classes (25 hours) approximately nine times each year. The maximum number of learners per class was 12 and the BSDM reported that classes were always oversubscribed.

The Army also employs Regimental Career Management Officers (RCMOs), who act as the interface between the unit and the AEC. Their role includes career management, personal development and manpower planning.

None of the 14 soldiers in the qualitative sample had sought or taken any further educational provision once they had reached the Field Army[65].

Personalised provision

Soldiers may wish to improve some aspect of their literacy and numeracy, such as spelling and grammar in English, or subtraction and multiplication in maths. This is difficult to achieve at the eLCs, which are often geared towards the achievement of the Adult Certificate tests. However, a**t 3 AEC (Catterick), face-to-face personalised provision is available where 'Basic Skills' classes are run as half-day workshops on a 'regular basis'**[66]. They are organised on a 'first-come-first-served' basis and soldiers either work in small groups or receive one-to-one tuition. This was particularly useful for soldiers who needed to brush up particular aspects of their literacy or numeracy skills, without having to take a five-day course leading to a qualification, and included soldiers preparing for promotion courses. Evidence suggested that **many AECs had begun to run provision of this type**. 3 AEC also runs one-day literacy and numeracy courses on a monthly basis for soldiers planning to take a Command, Leadership and Management (CLM) course, which the BSDM said they had reported finding very useful.

Provision of literacy and numeracy when stationed abroad and on deployment

The Army has a number of AEC in countries where there are permanently stationed troops in significant numbers (e.g. in Cyprus and Germany)[67]. These allow many soldiers stationed abroad to continue accessing a range of education including literacy and numeracy courses. It is in the nature of the operational environment that **soldiers often have more downtime on tour than at home, and this presents opportunities for providing and receiving further educational provision**. Education provision is also available the Theatre Education Centre (TEC) facility for those in Afghanistan.

However, only two of the qualitative sample had been deployed, and neither had accessed education; as a result it was not possible to gain first-hand evidence on literacy and numeracy provision for soldiers on deployment.

SpLDs and Additional Learning Support

Support in the Army is provided for those diagnosed with Specific Learning Difficulties (SpLDs) such as dyslexia[68]. Data provided by the BSDM within HQ Initial Training Group,

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[65] Although this may be unsurprising given that soldiers were settling into their new unit and trade, seven soldiers from ITC(C) were qualified only to EL3 and were approaching the three-year mark where they would need to gain L1.
[66] This workshop provision has only become available in 2011.
[67] There are also some joint Education Centres (with the RN and RAF), e.g. in Gibraltar.
[68]With one exception the Disabilities Act is fully complied with by all Services. The Services will take account of SpLDs whenever and wherever possible, but in the case of an individual who is unable to undertake an operational task in the absence of SpLD support, it is not always feasible for that support to be provided. Consideration will be given as to whether it is feasible to provide the support in an operational context; if it is not, then, in accordance with the Joint Services Publication (898 Part Four, chapter 6) every effort will be made to seek an alternative trade option.

show that, in 2009, at AFC(W) the incidence of trainees with dyslexia was 26%, at ATR(B) it was 17%, at ITC(C), 4%, at AFC(H), 4%, and at ATC(P) it was 3%.

The BSDM at ATFC(W) is a qualified dyslexia advisor and her awareness of dyslexia and its symptoms, taken alongside higher instances of testing, may increase the likelihood of diagnosis, and account for higher figures relative to other establishments. All trainees complete the British Dyslexia Association's dyslexia questionnaire, and those identified with a potential problem are interviewed by the BSDM and take the Dyslexia Adult Screening Test (DAST).

At the Phase 1 training units that researchers visited during Stage 1, trainees at AFC(H) assessed as working at EL3 or below, or judged by tutors to be falling behind, receive one-to-one Additional Learning Support (ALS) of between 20-30 hours. ALS is available to any trainee who feels that it would benefit them. ALS was also provided by two part-time teachers at ATFC(W) and on a basis of need at ITC(C).

5.5 Record keeping

Introduction

The Army Basic Skills Policy is clear: a record of all literacy and numeracy qualifications should be kept up to date and follow a soldier throughout their career, and this information should be held both as a hard copy and on a central electronic database[69]. Since promotion depends upon a soldier's literacy and numeracy qualifications, accurate completion and dissemination of these records is important for the Army as an organisation and for the individual concerned. Researchers enquired into who took responsibility to keep records updated, how these records were disseminated, and how much attention was paid to soldiers' education records by Officers and NCOs

The situation with SpLDs is less straightforward. The Army Dyslexia Policy makes it clear that there is no obligation for personnel to inform their line manager if they have dyslexia (or one of the other three recognised SpLDs), although it suggests that it is in their best interests to do so. Hence, even if managers examine a soldier's record, they may not find evidence of SpLD, and in the qualitative sample, two of the four participants diagnosed with a SpLD had chosen not to inform their line manager.

Main Findings

The transfer and dissemination of records of Phase 1 literacy and numeracy qualifications to Phase 2 training was patchy and inconsistent.

Many line managers found it difficult to assess information on soldier's basic skills on the JPA. Records examined on the Army's PROMIS software were on occasions found to be inaccurate and unreliable.

None of the Officers and NCOs interviewed in Stage 2 had looked at any education records in either Phase 2 training or in the Field Army. The majority in Stage 3 reported that they paid little attention to soldiers' levels of literacy or numeracy unless a problem presented itself when carrying out their roles or duties, or when checking over records in the course of recommending a soldier for promotion.

Record keeping and transfer of records

Although records of an individual soldier's literacy and numeracy levels are kept on the Joint Personnel Administration (JPA) system, many line managers reported finding it difficult to access the information. The JPA was set up as a Tri-Service platform to replace previous personnel systems in each Service. Whilst JPA is the primary pan-Services MIS on which to record competences & education qualifications, there are other MIS within the Services that are integral to the record-keeping & tracking process. In the Army these

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[69] When a soldier attends literacy or numeracy provision for the first time, they are issued with an Individual Learning Plan (ILP), which is meant to remain with the soldier throughout their Army career. Records of attainment are transferred to the Joint Personnel Administration system (JPA) and the DETS(A) Management Information Service system, PROMIS when a soldier enters the Field Army. This record should then be constantly maintained and remain with the soldier.

include Project Management Information System (PROMIS), Training Administration and Financial Management Information System (TAFMIS) and Maytas.

Information is usually entered on to PROMIS by administrative clerks during the first two phases of training, and again at each unit when soldiers gain qualifications in the Field Army. However, **five records of soldiers in the qualitative sample of 14 were randomly examined, and found to be accurate in one case only.** This raises a question as to whether the PROMIS system is well maintained, and the extent to which it provides an accurate and reliable record of the education qualifications of Service personnel. There is also a question about the capacity of these different systems to articulate with each other, and with the JPA. Any deficiencies in this area can lead to the existence of incomplete records, and these, in turn, do not encourage staff to use or have faith in the MIS. It then becomes possible for soldiers to be asked to re-take tests that they may have already passed, or that they might be considered eligible for promotion without having the correct qualifications.

Evidence from the initial stages of the qualitative study suggested that the **transfer of records of Phase 1 literacy and numeracy qualifications to Phase 2 training was patchy and inconsistent**. At the same time there was also evidence of good practice, where accurate records were sent to BSDMs in the Field Army, showing Basic Skills and Key Skills qualifications gained and any SpLD recorded.

Once in the Field Army, the unit has the responsibility for maintaining the education records of soldiers, and it is the Regimental Career Management Officer (RCMO) who as part of the role is responsible for keeping track of soldiers' literacy and numeracy qualifications. However, **there was some confusion at some of the units visited as to whether it is the responsibility of the RCMO or the BSDM** to update education records and on which system.

Literacy and numeracy records

The Army requires that records of soldiers' achievements follow them throughout their career. Line managers were asked if they had viewed these records, and how useful and accessible they were.

Whilst this would not apply to RCMOs, none of the Officers/NCOs interviewed in Stage 2 had looked at any education records in either Phase 2 training or in the Field Army; they reported that any literacy or numeracy needs would emerge during training. When a soldier arrives at his Field Army unit with an end-of-Phase 2 Report (approximately 30 pages in length) NCOs are generally only interested in the military summary. As one NCO explained:

> *I would assume that basic skills-wise she is competent enough to be operationally effective, because it's not been highlighted to me that she's not ... unless it specifically affects the job she's doing, as it stands at the moment.*

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Eight Officers/NCOs in Stage 3 reported that they paid little attention to soldiers' levels of literacy or numeracy unless a problem presented itself when carrying out their roles or duties, or when checking over records in the course of recommending a soldier for promotion. **Four line managers reported they knew the levels of literacy and numeracy qualifications of the soldiers under their command**. In the case of the two soldiers in the RA , this may well have been because each unit had a policy of raising all their soldiers to L2 literacy and numeracy skills within five years of joining, a more ambitious target than Army policy requires.

Some Commanding Officers conduct 'Arrivals' interviews, which include questions on soldiers' military and educational qualifications. However, some of these are based on self-reports and are not always reliable. Other Commanding Officers ask new arrivals to produce a piece of free writing but although this was found to be useful, it was not clear how this information was used.

The general assumption of the majority of Officers and NCOs is that all soldiers will have minimum literacy and numeracy qualification of EL3 from ITC(C) and other training units, and an L1 and/or L2 from AFC(H).

When asked in Stage 3 about their awareness of soldiers' education records, nine of the 11 Officers/NCOs reported knowing where to find them; the remaining two were unsure how to find out this information. Only RCMOs and not line managers have access to the PROMIS database at unit level.

If they are not aware of the educational background of soldiers, line managers may miss out on important information. One NCO recalled how he was looking for a person with good administration and ICT skills, and although he had picked one of the soldiers in the qualitative sample, he was not at that time aware that this soldier had achieved an IT User Apprenticeship.

SpLD Records

Few Officers and NCOs look at a soldiers' record for evidence of a SpLD, largely because they do not view dyslexia (or other SpLDs) as adversely affecting soldiers' capability to carry out their roles and duties effectively. No Officer or NCO looked at trainees' records for evidence of SpLDs when they arrived at their units. The view is that it will soon become clear in training whether an individual has a SpLD or poor basic skills.

Nine line managers were asked whether they could recognise any of the Army's four designated SpLDs: four reported that they might be able to identify dyslexia and five said they could not. None had received any training on how to recognise a SpLD[70] and none appeared to be aware of the Army policy on dyslexia. No line manager was able to

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[70] It is only NCOs/Officers who train to be instructors (the ASLS course); they receive a brief lesson on 'learning differences' (but not on 'learning difficulties').

describe the main features of Dyscalculia, Dyspraxia or Meares-Irlen Syndrome, and most maintained that they had never come across these terms.

5.6 Soldiers' views: literacy, numeracy and their use in trades

Introduction

This section explores soldiers' views on their literacy and numeracy levels and provision in the Army. Evidence is presented on how much support they received, and on how useful they found the provision they engaged with.

Main Findings

Every soldier in the qualitative study reported that their speaking and listening skills had developed since joining the Army and that these were the basic skills most commonly used in their everyday roles. However, these soldiers believed that these skills had improved more as result of their frequent use, rather than from literacy and numeracy provision, which focuses more on reading, writing and numeracy.

Around one-fifth of soldiers at Stage 3 felt they still needed to improve their reading, one-third their writing and four-fifths their maths. The skills that the highest proportion (three-fifths) of soldiers reported having least difficulty with was writing, and spelling in particular.

One in five of those who reported receiving no help with English during their Phase 2 training, and just over a quarter of those who reported receiving no help with maths during their Phase 2 training reported that they would have liked some additional support.

All the Officers and NCOs interviewed thought the literacy and numeracy classes were sufficient for the Army's purposes, and all were broadly supportive of the Army's literacy and numeracy provision. Line managers reported that, wherever practically possible, they would support those personnel in their first appointments who wished to take further educational qualifications.

Many Officers and NCOs, particularly those in the infantry, did not appear to understand the impact of poor literacy and numeracy on soldiers' trainability and effectiveness.

NCOs and officers emphasised that many literacy and numeracy skills are often learned in situ from line managers and peers, and were often contextualised to the Army's requirements and needs.

Throughout the three years of the study, literacy and numeracy were regarded as important by the vast majority of soldiers for an Army career and for doing their job as a soldier.

Evidence from the qualitative sample

Literacy and numeracy provision

Almost all trainees respected their educational tutors and military trainers[71]. Although a minority complained that educational classes were 'just like school', most appreciated being treated as adults. Small groups were found to be conducive to learning, and there was a culture of working hard and achieving. The majority of trainees report enjoying their literacy and numeracy classes at AFC(H), although this was true of only a minority of the sample at ATFC(W)[72].

Many tutors have a military background: this not only provided tutors with a deeper understanding of trainees' needs, it also tended to elicit greater respect. Although induction is standard practice for both newly recruited BSDMs and external provider staff (who attend specific programme at Army Staff and Leadership School), a question still remains whether **more could be done to induct tutors without a military career into the military context and culture**.

There appeared to be no stigma attached to attending literacy or numeracy classes at AFC(H) and ATFC(W). At ITC(C), however, classes were referred to by some trainees (and some military staff) as the 'Dumb and Dumber' course.

At the final stage of the study **half (seven) of the soldiers from the qualitative sample reported that the literacy and numeracy provision received in Phases 1 and 2 had been useful to them**, not only because of the qualifications gained, but also because the skills they had learned had helped them to carry out their roles and duties more effectively[73]. The exchange below illustrates how soldiers can move from an initial position of reluctance to one of appreciation. This soldier was asked about Key Skills classes[74]:

> **S:** *They were alright, just depended, because it was like being back at school, not many people enjoyed it and I joined the Army like not to go back to school ... But loads of people gained from it.*
>
> **R:** And you went from an F then, in GCSE, to a Level two. How do you think you did that?
>
> **S:** *Just help from the teachers and that.*
>
> **R:** Good teaching?
>
> **S:** *Yeah, definitely.*

Four soldiers reported that the skills they had learned had not been useful for their professional lives. But it is difficult to assess the extent to which this is due to their literacy and numeracy levels being good enough for them to cope before their provision, their skills not improving as a result of their provision, or the fact that they are not making much use

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[71] Evidence from Stage 1.
[72] There is no information about this at ITC(C) because only one trainee had experienced any educational provision at the time interviews were conducted.
[73] This was true of all three soldiers in the sample from AFC(H).
[74] Key abbreviations in interview transcripts: LM – Line Manager; R – Researcher; S – Soldier.

of literacy or numeracy in their current roles[75]. However, despite often viewing provision as something 'to get through', they realised that gaining qualifications was necessary for promotion, and some appreciated the fact that qualifications were free.

All 14 soldiers said that their speaking and listening had developed since joining the Army and that these were the basic skills most commonly used in their everyday roles. For most trainees, speaking and listening is only covered by the presentations given as part of Key Skills, and widely appreciated by interviewees. It seems likely that the improvements noted come through working in job roles that require constant and effective communication. Some interviewees mentioned that their reading and writing had improved 'a bit', and two thought their numeracy skills were now better.

Although the quantitative survey did not ask questions about speaking and listening, it did show that while 85% of all respondents in Stage 2 were very or fairly confident in their literacy skills, by Stage 3 this figure had risen to 95%. In general those in the quantitative sample had higher levels of confidence in their literacy skills in the third stage of reporting than earlier, although this was not the case with numeracy.

Use of literacy and numeracy skills in trades

All 14 soldiers in the qualitative sample reported that their level of literacy and numeracy skills[76] was good enough to allow them to carry out their jobs at the time of interview, although one soldier was concerned that his writing would not be good enough to pass the signals course he was about to start.

The soldiers and their line managers were asked to grade the levels of literacy and numeracy and ICT skills of the soldiers under their command. This provides a broad indication of what the particular soldiers and managers regard as the strengths and weaknesses in the soldiers' literacy and numeracy skills, the skills in need of development and the skills most commonly and rarely used in the soldiers' jobs[77]. Tables 5.13 and 5.14 present a summary of the evaluations of soldiers' literacy and numeracy skills as used in their daily roles and duties.

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[75] Two soldiers had not taken literacy and numeracy provision because they already held literacy and numeracy qualifications at the requisite levels, while a third was not asked this question.
[76] Although ITC is not considered a basic skill in the Army policy, it has been included here because of the importance of ITC for some job roles in the Army and the other Services.
[77] For some line managers it was hard to make an accurate judgement on maths, and to a lesser extent on reading and writing, because they had not seen the soldiers use these skills regularly in their daily jobs.

Table 5.13: Soldiers' assessment of their own literacy and numeracy competencies

Grade	Speaking	Listening	Reading	Writing	Maths	ICT
Excellent	1	2	0	2	1	1
Good	10	10	7	4	2	6
OK	2	2	6	5	6	3
Poor	1	0	1	3	5	4
Total points	39	42	34	33	27	32

The analysis made use of a points system: Excellent = 4; Good = 3; OK = 2; Poor = 1. Table 5.13 shows that 14 soldiers rated most highly their speaking and listening (39 and 42 points respectively), followed by Reading (34), Writing (33), ITC (32), and Maths (27). This is not surprising given the IA profiles of the quantitative sample.

Table 5.14: Line managers' assessment of soldiers' literacy and numeracy competencies

Grade	Speaking	Listening	Reading	Writing	Maths	ICT
Excellent	1	2	0	0	0	0
Good	5	4	1	2	0	1
OK	4	4	3	2	3	2
Poor	0	0	1	3	0	0
Does not know soldier well enough to judge	1	1	1	1	1	1
Cannot comment because does not have enough evidence	2	2	7	5	9	9
Total points	27	28	10	13	6	9

Table 5.14 shows a high correspondence between the evaluations of line managers and the soldiers themselves. Speaking and listening were rated most highly (27 and 28 respectively) and maths was again rated last (6), although it should be noted that nine of the 13 managers had not seen enough evidence of the use of maths to make a judgement.

The skills that proved most difficult to assess were maths, ICT, reading and writing. This suggests either that the managers were not able to recognise when these skills were being used, or that the majority of soldiers used these skills intermittently, or that they did not form a large part of the soldiers' job in these Arms or Services.

Evidence was also found of the importance attached by the 14 soldiers and their line managers to the basic skills required in each Army trade (see Table 5.15, Appendix A)[78]. These are 'snapshot' observations (one point in time): the literacy and numeracy skills that are important for one soldier today, working on one trade, may be less important at

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[78] This is a broad summary: there are often great differences in ratings and use within any one trade.

another time, after moving to another role and individuals and their line managers do not always recognise if and when they are using literacy or numeracy skills. Also, there may be significant differences in the literacy and numeracy skills demanded within trades, as when one and the same literacy and numeracy skill is used very commonly in one part of a trade and infrequently elsewhere. This said, **speaking and listening emerge as the skills which are regarded as essential in all trades by those actually in those trades.**

Some NCOs considered the skill of listening even more important than speaking[79].

> **R:** So is listening more important?
> **LM:** *Yes, very important.*
> **R:** Tell me why?
> **LM:** *Because if I give him a task he needs to know that task and he needs to be able to take that information in. If he doesn't do it the job doesn't get done, and the job could cost somebody their life ... [It's] a life saving skill.*

One line manager remarked that:

> *Every soldier should be […] able to speak to people, report on people, take a set of orders in the field, it's all about having information in front of you, and giving orders to people.*

This also suggests that at least some of this information needs to be recorded in the form of written notes and so reading and writing are also important skills.

Evidence from the Quantitative Study

Phase 2 training and support: trainees' views

The quantitative sample were asked about their Phase 2 training and the type of help they received with literacy and numeracy. Thirteen per cent found their Phase 2 training easy, with 32% reporting it being 'neither hard nor easy' and 55% saying it was either 'fairly hard' or 'very hard'. Forty-two per cent reported that the training was harder than they expected. At the same time **76% judged their performance as good and only 2% as poor**. 23% had to retake some tests during their training and 6% were back classed.

At the third and final stage of the study, 84% of participants reported that the literacy provision in Phase 2 was helpful for their work in the Field Army, and 83% said the same about numeracy. Most soldiers (91%) know that they can use the eLC to improve their English and Maths. Moreover, 77% knew who to approach if they needed any help or support with Maths or English. Finally, a significant majority of trainees were satisfied with their Maths and English training respectively during Phase 1 (70%) and Phase 2 (67%). Only 6% of trainees reported their dissatisfaction with Maths and English training.

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[79] Key terms in interview transcripts: LM – Line Manager; R – Researcher; S – Soldier.

Around a third of those who did not receive any help with English or maths during Phase 2 training and did not use the AEC or eCL, were unaware that they could have used these Centres to improve their English and maths.

Literacy

Just under two thirds (65%) of trainees reported that they did not have any help with literacy during Phase 2 training as measured at Stage 2 of the study[80]. The majority of those who received help during Phase 2 training did so via group classes or lessons (16% of all trainees), visiting an eLC (12% of all trainees), one-to-one lessons (4%) or in 'some other way' (3%)[81].

Those who began their Army career with Entry level literacy were less likely to report no help with literacy during their Phase 2 training than those who were assessed at a higher literacy level (47% of Entry level 1 and 2 and 60% of L1 or above received support with literacy during Phase 2 training).

The main reasons given by participants for not taking up English/literacy provision were that their levels of skills were already good enough (52%), followed by 35% reporting that they were never offered any extra classes or support and 22% saying they did not need to use English skills for Phase 2 training or in their job (4%) as their reason. Those with literacy skills at L1 and above (61%) were more likely to agree that their skill levels were already high enough compared to those whose literacy was initially assessed at Entry level (49%).

21% of those who reported receiving no help with English during their Phase 2 training would have liked support.

Numeracy

A relatively high proportion (69%) of trainees did not receive any help with maths/numeracy during their Phase 2 trade training as measured at Stage 2 of the study. The majority of those who received some help with numeracy during their Phase 2 training did so via group classes or lessons (16% of the whole group), some via visiting an AEC or eLC (9%) and the rest either via one-to-one lessons (3%) or some other way (2%). **41% reported that they have never been offered any classes or support**[82]**.**

Those who began their Army career with Entry level numeracy were more likely to report receiving help with numeracy/Maths during their Phase 2 training than those who were assessed at a higher numeracy level (44% of Entry level 1 and 2 and 64% of L1 or above received support with numeracy/Maths during Phase 2 training).

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[80] But it is important to note that there is no requirement during Phase 2 training to undertake literacy and numeracy provision unless recruits are doing an Apprenticeship.
[81] Respondents could select more than one answer.
[82] This is likely to be because they did not require any additional support.

The reasons given by participants for not having any support or extra classes in maths/numeracy were the same as those for literacy, that is, they did not need to use their maths skills for Phase 2 training (18%) or in their job (6%), or, most commonly, their levels of skills were already good enough (41%).

A higher proportion of trainees (20%) with Entry levels of numeracy at IA reported that they did not need to use maths in Phase 2 training, as compared with those with numeracy skills at L1 and above (11%). Moreover, those with numeracy skills at L1 and above (53%) were more likely to agree that their level was already high enough, compared to those assessed at Entry level at IA (37%).

27% of those who reported receiving no help with maths during their Phase 2 training reported that they would have liked some additional support[83].

Evidence from the qualitative sample

Further benefits of educational provision and taking further qualifications

Seven soldiers mentioned that Basic Skills/Key Skills classes had improved their confidence in general, both as a result of achieving a qualification[84] and proving themselves to close relatives and friends. One soldier in the sample reported that 'It made me feel like I'd actually accomplished what I was in those lessons to do', while another had proved to herself that 'I was not thick' and felt a sense of achievement because 'I never thought myself that I would come this far'. This is evidence of the 'wider' benefits of provision, which also include increased self-esteem, raised aspirations and gaining a sense of purpose. These effects may have larger and more widespread benefits for personnel than this study was able to identify[85].

Six soldiers in the qualitative sample were proud of gaining their qualifications. However, only three who took Basic Skills provision in Phase 1 could recall the subject or level of qualifications they had gained. This suggests that, for these soldiers at any rate, literacy and numeracy qualifications had not made much of an impression.

12 soldiers reported that they wanted to improve particular areas of their basic skills: 10 identified numeracy, six writing and three reading, with the prospect of promotion given as the main reason. 10 soldiers reported that they would be happy to take a GCSE if required.

Line managers were fully supportive of soldiers who sought to take further literacy and numeracy qualifications, including GCSEs, and they reported that, if practically possible, they would attempt to make time for this within the busy working schedule.

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[83] If an individual had problems with maths during the training then support will be given. If the training does not include a maths requirement then additional maths support is unlikely to be given during training time.
[84] This also helped them become more employable when they eventually left the organisation.
[85] A subject, therefore, for further research.

Evidence from the quantitative sample

Literacy and numeracy provision

Recruits taking literacy classes during Phase 1 training were asked about the impact of these classes on their literacy skills, and whether the classes had affected their attitudes and aspirations (see Figure 5.7). Around half of recruits reported that classes had a positive impact on their reading (52%) and writing (49%), as well as on their confidence and their desire to learn further. Slightly over a third reported a more equivocal response, and a signficant proportion reported that literacy provision had made no appreciable difference. However, over half (54%) of trainees agreed that the classes were relevant to their job in the Army.

Figure 5.7: Attitudes towards English/literacy classes in Phase 1 (N=385)
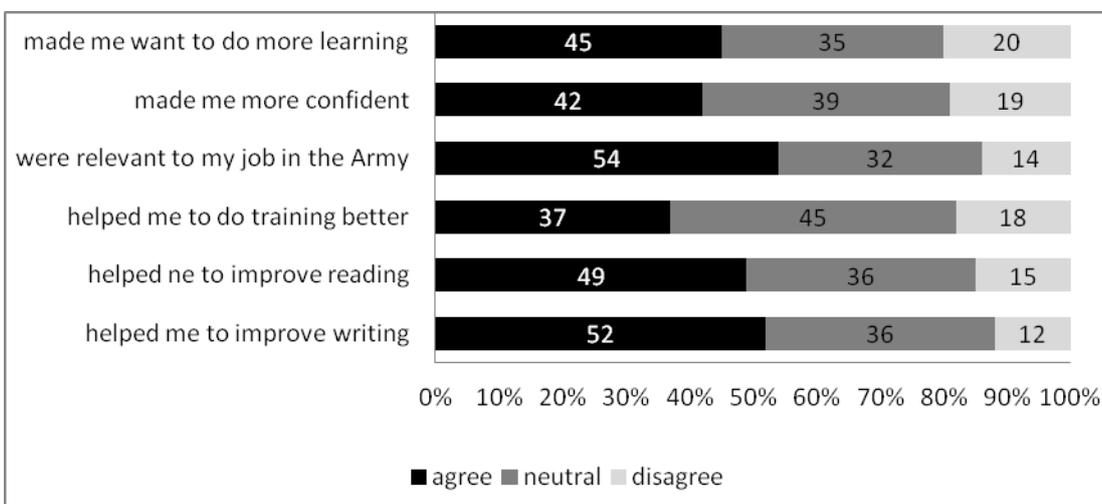
As Figure 5.8 shows, a higher proportion of trainees reported that their numeracy classes had helped to improve their skills (63%). At the same time, a sizeable proportion of recruits were either neutral or negative about the impact of numeracy classes taken during their Phase 1 training. Similar to the attitudes shown towards literacy classes, 57% of trainees agreed that these numeracy classes were relevant to their job in the Army.

Figure 5.8: Attitudes towards maths/numeracy classes in Phase 1 (N=326)
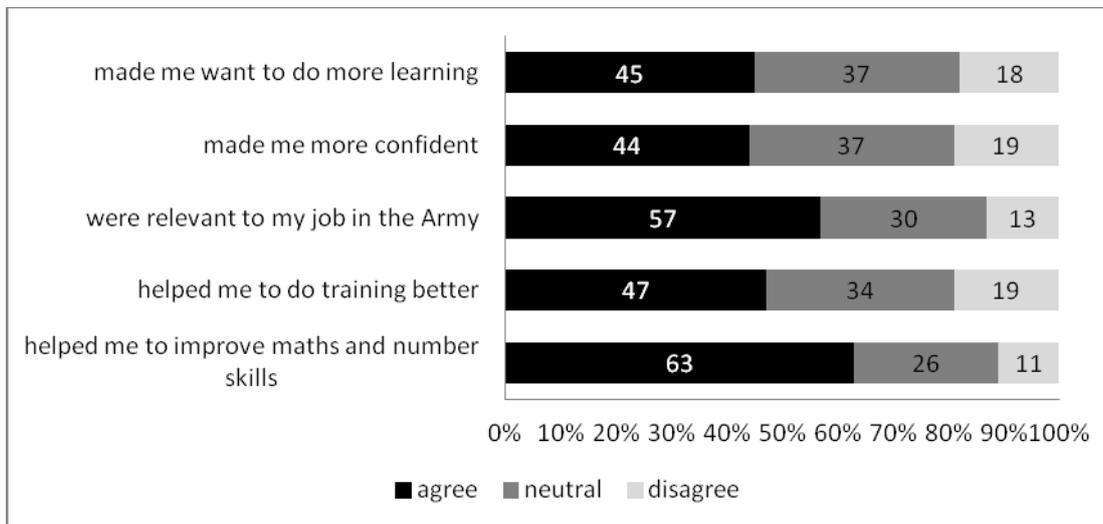
Those who had taken literacy and/or numeracy classes during their Phase 1 training were asked to rate these classes in terms of their usefulness for Phase 2 training. **Two thirds of respondents (66%) reported that the classes were 'very helpful' or 'fairly helpful' for Phase 2 trade training**. Moreover, recruits who were assessed at Entry levels for their numeracy at IA were most likely to find literacy and numeracy classes helpful in their Phase 2 training, as compared with those with L1 and above numeracy (68% and 57% respectively).

84% of participants perceived that their literacy training in Phase 2 was helpful in preparing them for the work they would undertake in the Field Army and 83% said the same about their numeracy training. Most (91%) of the soldiers by this phase also now knew that they could use the unit's AEC or eLC to improve their English and maths. Moreover, 77% knew who to approach if they needed any help or support with maths or English.

Finally, and overall, **a significant majority of trainees were satisfied with literacy and numeracy provision during Phase 1 (70%) and Phase 2 (67%), and only 6% of trainees reported dissatisfaction**.

Attitudes towards improving literacy and numeracy

At the start of the study, 33% of recruits stated that they wanted to improve their reading skills, 51% their writing skills and 63% their maths skills. During Phase 2 training, 26% still wanted to improve their reading skills, 36% their writing skills and 44% their maths skills. By the final stage of the study, when they were in the Field Army, 22% of soldiers wanted to improve their reading skills, 37% their writing skills and 50% their maths skills. In addition, at Stage 3, the soldiers were asked if they felt they **needed** to improve their literacy and numeracy: **18% felt they still needed to develop their reading, 31% their writing and 43% their maths skills**. Although the proportion of those who felt their reading was adequate for their jobs had decreased, the numbers of those who felt they

needed to improve their writing and maths remained roughly the same as in Phase 2; this suggests that there was a growing realisation of their importance in their jobs. Maths was the greatest concern.

The group most likely to want to improve their literacy or numeracy were trainees assessed at EL1 or EL2 in Stage 1. Figure 5.9 provides a summary of the evidence from Stage 1, showing that:

- around two-thirds of the sample with EL1 or EL2 literacy wanted to improve their writing (65%) and nearly half (46%) their reading skills

- those least likely to want to improve their reading and writing skills were those with L2 skills (20% and 41% respectively)

- amongst participants with EL1 or EL2 numeracy, 70% wanted to improve their maths skills and 67% wanted to improve their EL3 skills.

Figure 5.9: Percentage of recruits wanting to improve their skills by assessed literacy or numeracy
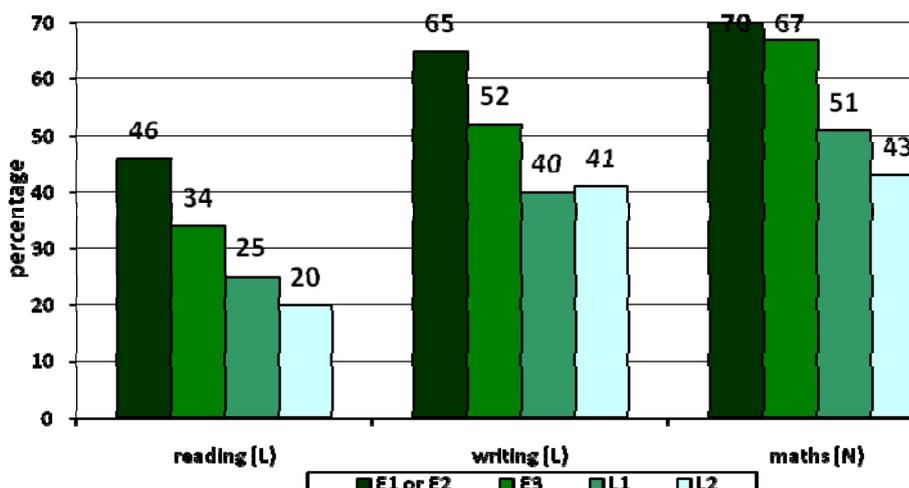
Figure 5.10 shows the trend in the association between skills levels at IA and willingness to improve these skills over the three stages of the study. **There is a clear tendency for respondents with lower literacy and numeracy to be more willing to improve their skills than those with higher levels of basic skills.**

Figure 5.10: Percentage of recruits wanting to improve their skills by assessed literacy or numeracy and by research stage
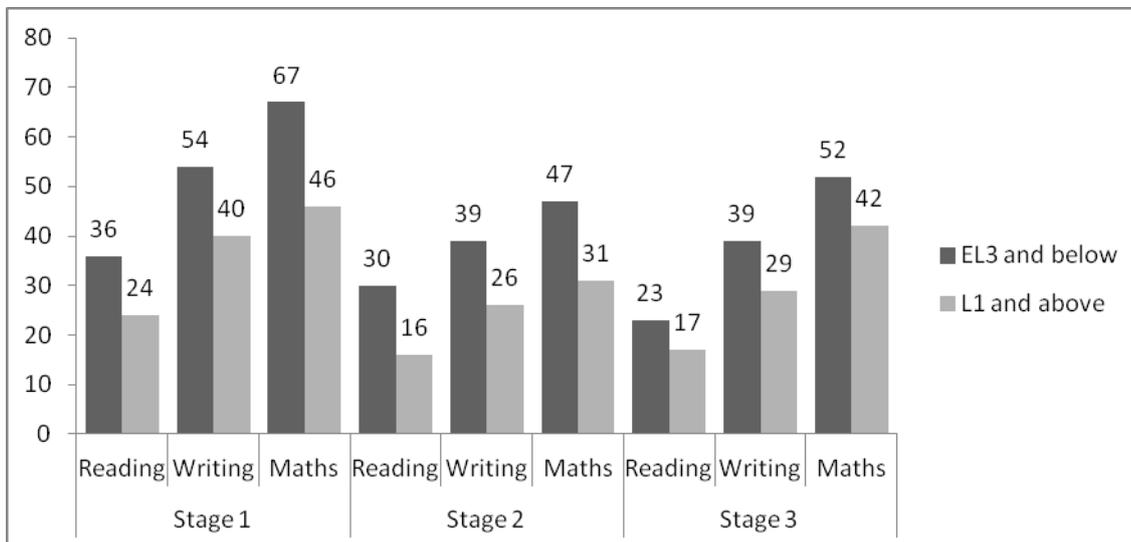
Note: Reading and writing is split by literacy levels. Maths is split by numeracy levels.

Reasons for wanting to improve skills

Respondents who wanted to improve their literacy and numeracy were asked to choose their main reason from a set of possible answers:

- 'I want to get promoted' (26%)

- 'I want to get some qualifications' (22%)

- 'I want to do it for myself, to feel better about myself' (37%)

- 'To improve my chances of getting a good job once I leave the Army' (13%)

- 'Other' (2%).

There is one notable development over the three stages of the study: there was **a sizeable reduction (from 26% to 13%) in the number who chose 'to get promoted' as the reason for improving literacy and numeracy between Stages 2 and 3** (see Figure 5.11)[86]. This is against the background of an increase between Stages 2 and 3 in the numbers of those seeking to gain a qualification.

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[86] This may be because some recruits have gained sufficient literacy and numeracy qualifications in order to gain promotion over the course of the study.

Figure 5.11: Participants' reasons (%) for wanting to improve reading, writing and maths skills by research stage[87]
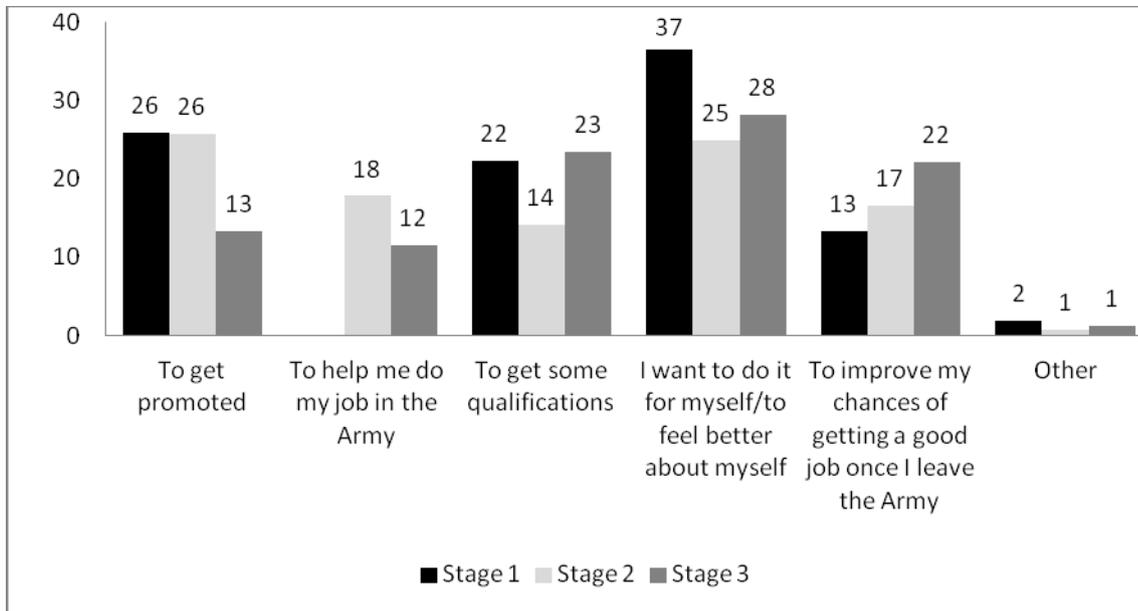
There were no differences across skills groups, except that participants with EL1 literacy at Stage 1 were the least likely to report that they wanted to improve their skills for promotion (13% compared with a minimum of 25% in all other groups) and the most likely to want to improve their skills to improve their chances of getting a good job on leaving the Army (24% compared to 11% with EL2 literacy and 10% with L2 literacy).

Turning to look at the reasons why trainees in the three Arms groups want to improve their literacy and numeracy, trainees from the Combat Arms were more likely (17%) to choose the option 'to improve my chances of getting a good job once I leave the Army' compared to trainees from the Combat Support Arms (11%) or Service Support Arms (10%). This reflects the profile of trainees from the Combat Arms, many of whom were assessed as having low levels of literacy and numeracy.

At Stage 2 trainees with EL3 or below in numeracy at IA were more likely to report that they wanted to improve their skills to get qualifications (16% compared with 4% of those with L1 or above numeracy skills). At Stage 3 those with lower literacy skills were less likely to say they wanted to improve their reading, writing or maths skills in order to get a good job once they leave the Army compared to those with higher skills (20% to 30%), but those with low numeracy skills were more likely to agree that they needed to improve their skills to get promoted (15% to 9%).

Out of the 90 trainees (6% out of 1622) who did not want to improve their literacy and numeracy at Stage 1, 41 reported that they did not need those skills for their job in the

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[87] The Stage 1 questionnaire did not include the option 'to help me do my job in the Army'.

Army; 39 said they preferred to spend their free time doing other things; 22 did not have much time to spend learning; 10 did not see the point in learning; 6 were nervous of going back to a classroom, and 2 did not want other people to know that they had difficulties with literacy and numeracy skills.

98% of new recruits thought that the ability to read, write and calculate with numbers would be important for their Army career and 96% agreed that these skills were important for doing the job of a soldier in Phase 1 training. At Stage 2, 87% reported that reading and writing was important and 86% agreed that maths was significant for their training. At Stage 3 the evidence was similar: 90% (reading and writing) and 86% (maths). **Therefore, throughout the three years of the study, literacy and numeracy continued to be regarded as important for an Army career and for doing a job as a soldier by the vast majority of the sample.**

5.7 Levels of soldiers' literacy and numeracy

Introduction

This section describes the self-reported literacy and numeracy difficulties of recruits, their self-confidence in literacy and numeracy, their literacy and numeracy skills assessment results and their literacy and numeracy qualifications gained whilst in the Army. It also presents evidence collected over the three Stages of the study of recruits' literacy and numeracy levels and examines any changes in those levels and the factors which may explain these changes.

It is important to emphasise that the instrument used in this study to measure literacy and numeracy levels did not measure speaking and listening.

This is a long and detailed section, and therefore each subsection includes its own introduction and conclusions.

Main findings

Over time there were fewer self-reported difficulties in literacy and numeracy, and an increase in self-confidence in the use of literacy and numeracy. The largest improvements were observed among trainees with the lowest levels of literacy and numeracy.

There was a significant improvement in literacy and numeracy scores over the three stages of the study.

The explanation for the increase in skills between Stages 1 and 3 is less to do with 'attending provision' as such and more to do with the type and structure of provision and informal and trade learning undertaken at one training unit or another. Some training units were associated with larger or any increase at all in skills compared to others. However, it was not possible to identify in any detail the contribution to increases in levels of skills made by the factors that distinguish one type of provision from another.

Self-reported literacy and numeracy difficulties

Introduction

This subsection looks at participants' self-reported difficulties with literacy and numeracy. The sample group was asked to identify any problems they experienced with a range of reading, writing and numerical tasks. The same questions were asked at each stage of the study so that the answers could be used to explore any changes in the level of difficulties that were reported.

Reading

Trainees were asked if they had any difficulties with six reading tasks[88]. The reading task most reporting having difficulties with was 'reading or understanding paperwork or forms to do with the Army' (18%). Figure 5.12 shows a comparison of the proportion of those reporting difficulties over the three stages of the study. The table shows no substantial changes in the proportions reporting difficulties between Stage 1 and Stage 3.

Figure 5.12: Percentages reporting reading difficulties by research stage
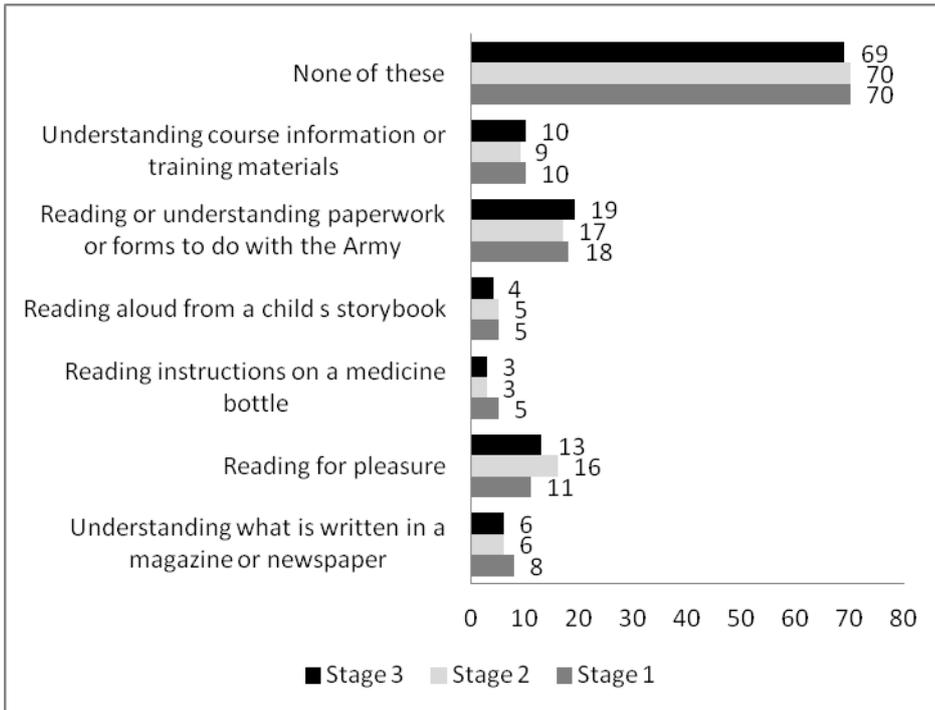
30% of all trainees reported at least one reading difficulty, with this figure increasing to 45% among those with EL1 or EL2 literacy compared with 10% of those with L2 literacy. Figure 5.13 shows that, of the six reading tasks, Army forms presented the most difficulty. This illustrates the challenge of raising the literacy levels of soldiers, whilst also preparing materials that do not (generally) exceed their levels of reading and comprehension.

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[88] The specific tasks were: reading or understanding paperwork or forms to do with the Army, reading for pleasure, understanding course information or training materials, understanding what is written in a magazine or newspaper, reading aloud from a child's reading book, reading instructions on a medicine bottle.

Figure 5.13: Percentage reporting reading difficulties by literacy levels
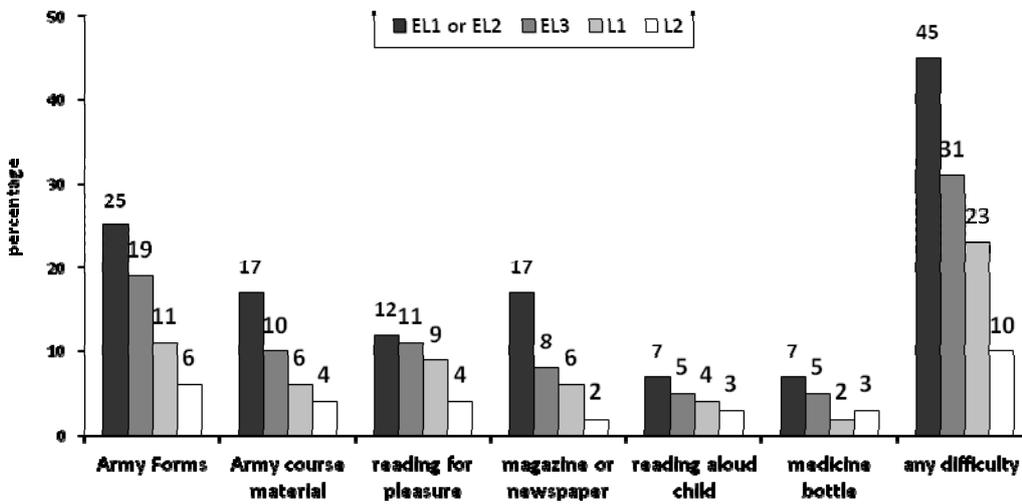
Although there was no change in the numbers of those who reported having difficulties with reading across the three stages of research, there was a reduction in the number of respondents whose literacy levels were lowest at IA reporting difficulties across all 6 reading tasks over the course of fieldwork. As Figure 5.14 shows, 45% of those with EL1 and EL2 literacy reported at least one reading difficulty at Stage 1, falling to 36% in Stage 3.

Figure 5.14: Percentage reporting at least one reading difficulty by literacy levels and by research stage
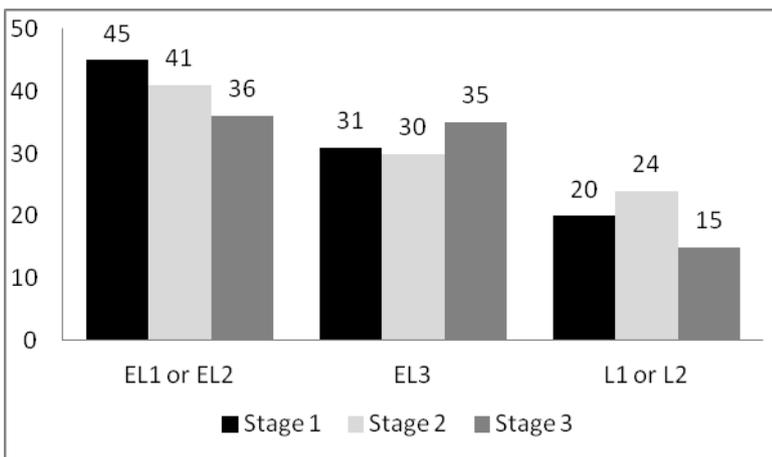
Writing

Trainees were asked if they had any difficulties with a number of writing tasks[89]. Around 1 in 10 of all those who responded reported difficulties with specific Army-related writing tasks such as copying down instructions or orders or taking notes in lessons. The largest proportion of trainees reported spelling difficulties.

Figure 5.15 compares the proportions of participants reporting different writing difficulties. There was no significant change in most reported writing difficulties over time, with the exception of spelling: 38% reported this as a difficulty in Stage 3 compared to 48% in Stage 1.

Figure 5.15: Percentage reporting writing difficulties by research stage
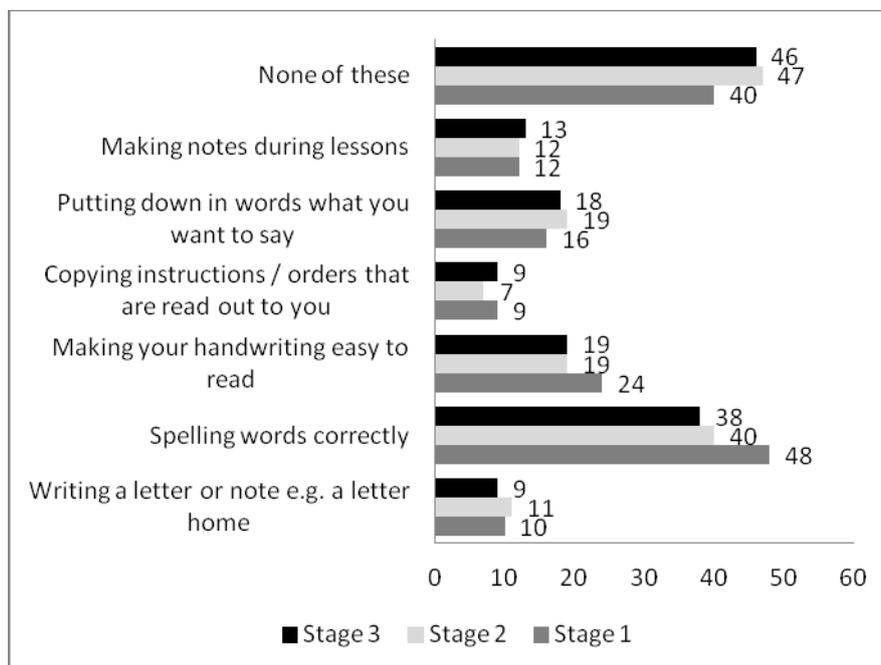
It is worth noting here that, when soldiers in Phase 2 were asked to write the name of their Arm or Service on a questionnaire form, **23 out of 53 who filled in their Arm or Service as 'infantry' spelt the word incorrectly.**

60% of all trainees reported at least one writing difficulty. This was highest at 75% among those with EL1 or EL2 literacy and lowest at 48% for those with L2 literacy. The most frequently reported difficulty was with spelling, with as many as 63% of those with EL1 or EL 2 literacy reporting problems (see Figure 5.16). Participants with EL1 or EL 2 literacy were most likely to report having all the nominated difficulties.

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[89] The specific tasks were: spelling words correctly, making handwriting easy to read, putting down in words what you want to say, making notes in lessons of training, writing a letter or note (e.g. a letter home, copying instructions or orders that are read out to you).

Figure 5.16: Percentages reporting writing difficulties by literacy levels
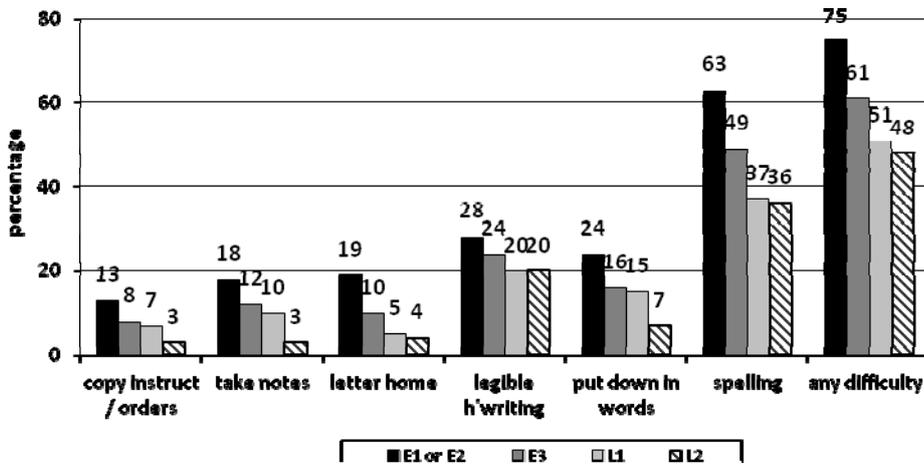
There was a reduction in the proportion of trainees reporting at least one writing difficulty across three research stages, from 62% at Stage 1 to 54% at Stage 3 (Figure 5.17). The greatest reduction can be seen among trainees with EL literacy, 75% reported at least one writing difficulty at Stage 1, and this reduced to 64% by Stage 3. This reduction can be seen across all 6 writing tasks for the trainees with EL1 and EL2.

Figure 5.17: Percentage reporting at least one writing difficulty by literacy levels and research stage
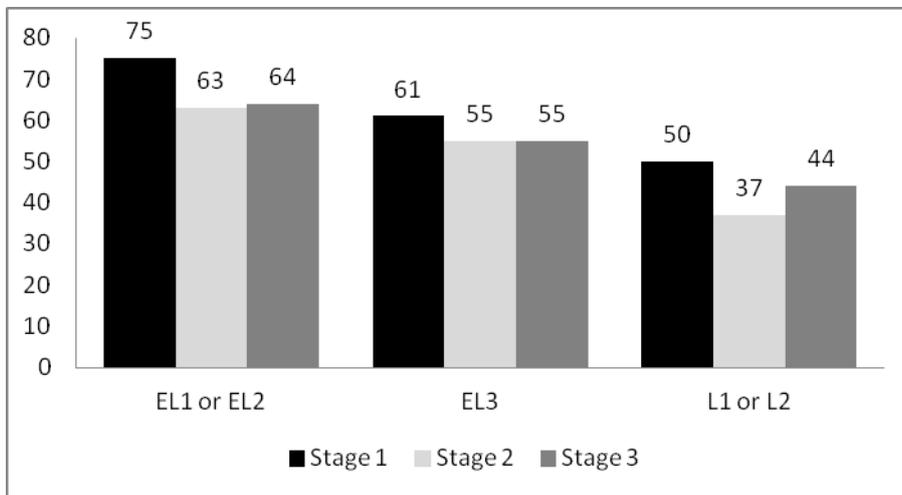
Number-work tasks

The sample group was asked if they had any difficulties with 10 number or maths tasks[90]. The most frequently reported difficulty was with division calculations (26%), with 16% reporting difficulties working out distances or other calculations to do with their job in the Army. Figure 5.18 compares the proportion of respondents reporting different maths difficulties across the three stages of research. There were no significant changes reported in the number of maths difficulties over their time in the Army.

Figure 5.18: Percentage reporting number or maths difficulties by research stage
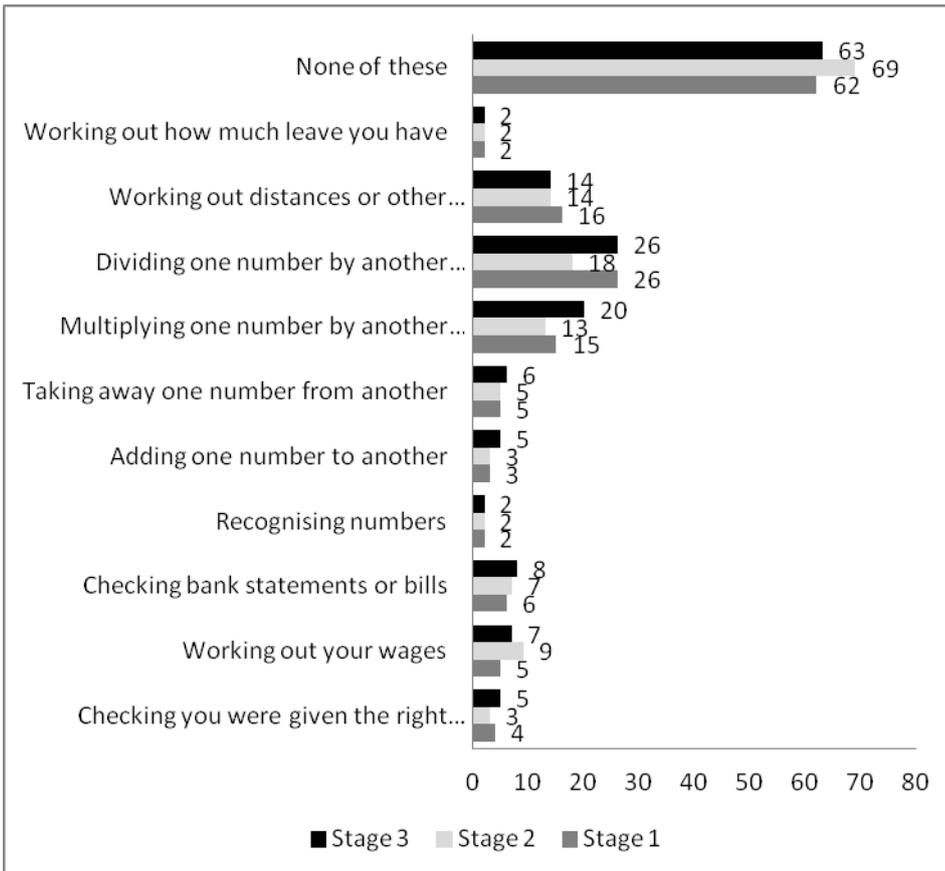
38% of all trainees reported having at least one number-work difficulty. This was highest at 50% for trainees with EL1 or EL2 numeracy and lowest at 14% among those with L2 numeracy. As Figure 5.19 shows, 31% of those with EL1 or EL2 numeracy had problems with division, compared to 8% for those with L2 numeracy.

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[90] The specific tasks were: checking you were given the right change from £10, working out wages, checking bank statements or bills, recognising numbers, adding one number to another, taking one number away from another, multiplying one number by another, dividing one number by another, working out distances / other calculations to do with your job in the Army, working out how much leave you have.

Figure 5.19: Percentage reporting number or maths difficulties by numeracy levels
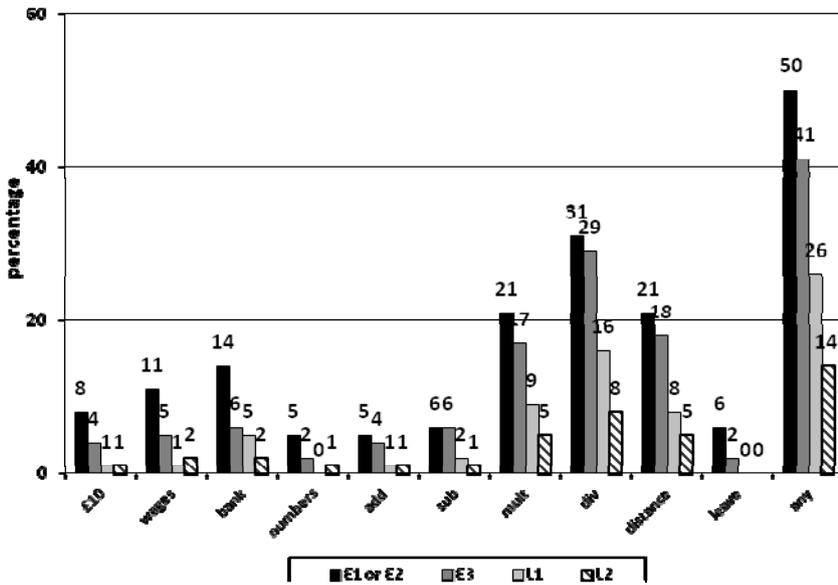
There was a substantial change in the number reporting at least one maths difficulty across the three research stages, from 38% at Stage 1 to 30% at Stage 2 but then rising to 37% at Stage 3. This pattern is present across all numeracy skills levels (see Figure 5.20). We can speculate that, after receiving training in Phases 1 and 2, trainees found that their skills had improved in comparison with their starting point, but that when they entered the Field Army, and had to use these skills in testing situations, their views adjusted accordingly.

Figure 5.20: Percentage reporting at least one number/maths difficulty by numeracy levels and research stage
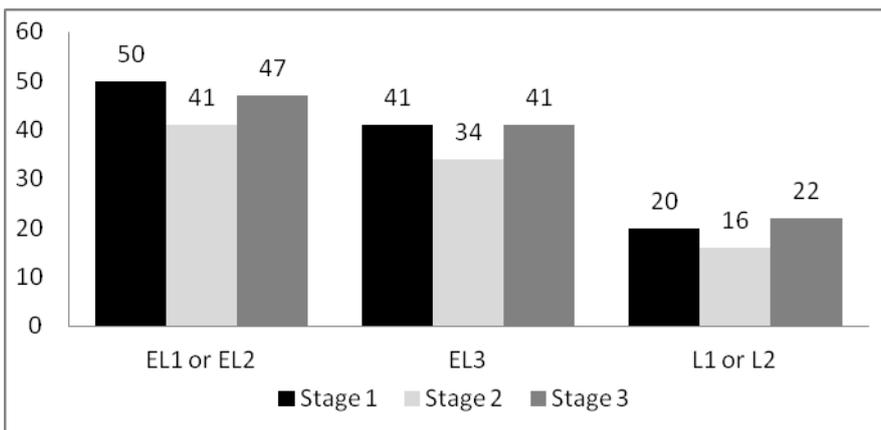
Reasons for literacy and numeracy difficulties

The 3 in 4 trainees who reported having problems with at least one literacy and numeracy task were asked to choose from a list of 12 possible reasons for their difficulties (trainees could select more than one answer). The most common reasons selected (see Figure 5.21) were: 'not being interested' (43%); 'not liking school' (33%); 'poor teaching in schools' (23%); 'not being bright enough' (20%); 'SpLDs' (17%); 'truanting' (14%); 'difficult family background' (9%); 'moving house a lot' (8%), and 'being excluded' (5%).

Compared to those with L2 skills, trainees with EL1 or EL2 skills were more likely to cite: 'not being bright enough' (26% to 11% literacy, 28% to 10% numeracy); 'teaching in schools not being good enough' (30% to 15%, numeracy), and 'being dyslexic or having other SpLD (30% to 4%, literacy).

Figure 5.21: Reasons why participants think they have literacy and numeracy difficulties by skills levels
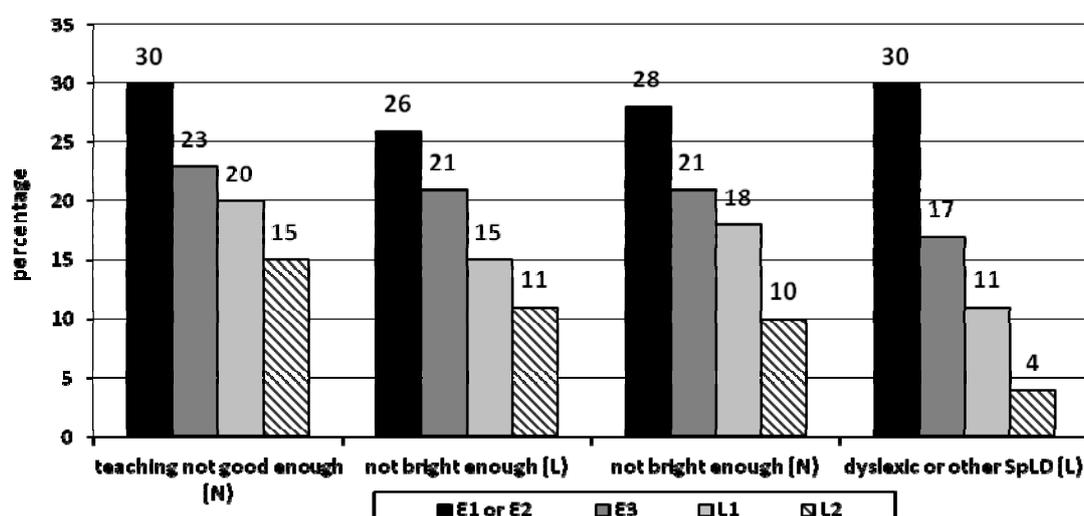
Main points

One-third of trainees reported at least one reading difficulty; there were no significant differences in the number of reported difficulties over the period of the study as a whole. There was, however, a reduction in the number of those with the lowest level of literacy assessed at IA reporting difficulties with reading.

More than half of all trainees reported at least one writing difficulty. There was a slight decrease in the number of trainees who reported writing difficulties over the three stages of fieldwork. The largest reduction was found among those with lower levels of literacy.

One-third of trainees reported that they experienced at least one problem with numeracy tasks. The proportion of trainees reporting difficulties fell between Stages 1 and 2, but rose again at Stage 3. We can speculate that, after receiving training in Phases 1 and 2, trainees felt that their skills had improved but that they subsequently lowered their assessment of their numeracy skills having tested and applied these in the Field Army.

There was no effect of literacy and numeracy provision on the change in the self-reported evaluation of reading, writing and maths difficulties.

Confidence in literacy and numeracy skills

Introduction

This section examines how the sample group rate their reading, writing, and numerical skills, and identifies any changes across the three stages of the study.

Self-confidence in skills

Participants were asked to rate their confidence in their writing and reading skills at the end or towards the end of their Phase 2 training[91]. The vast majority of respondents reported that they were 'very confident' (38%) or 'fairly confident' (47%) in their reading abilities with 11% reporting that they were 'not very confident' and only 3% reported that they were 'not at all confident' (see Figure 5.22). Moreover, 27% of trainees reported they were 'very confident', and 53% reported that they were 'fairly confident', about their writing skills (see Figure 5.23).

Those initially assessed as having EL1 or EL2 literacy skills were only slightly less confident in their reading and writing abilities at the end of their Phase 2 trade training, as compared with those who were initially assessed at EL3; but they were noticeably less confident than those with L1 or L2 in literacy at IA.

Figure 5.22: Confidence in reading skills by initial literacy level and research stage[92]
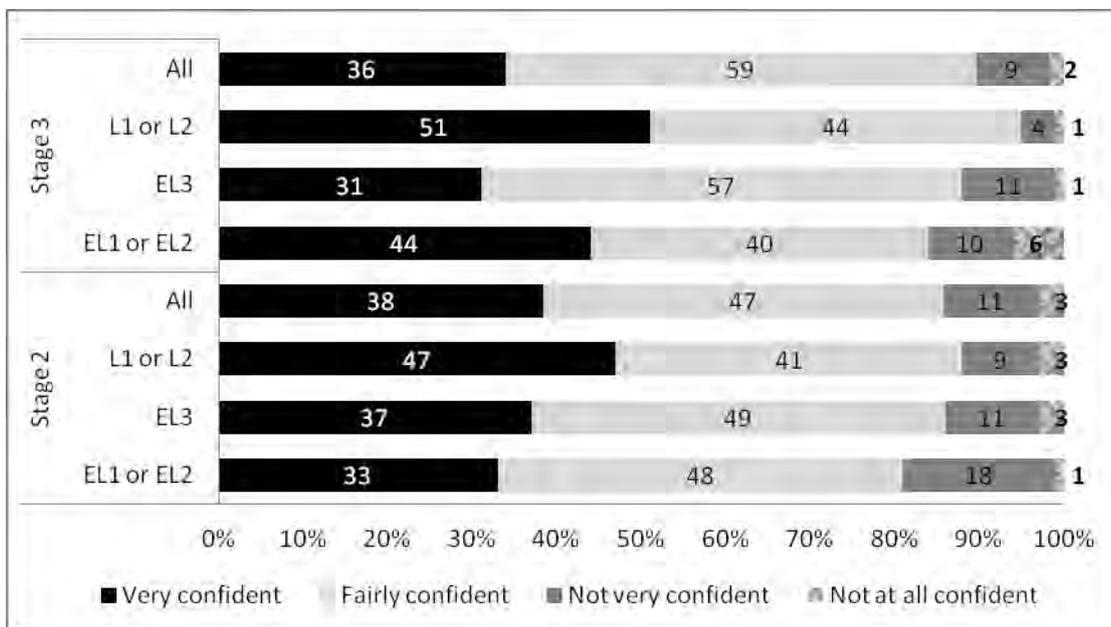
Figure 5.23: Confidence in writing skills by initial literacy level and research stage[93]
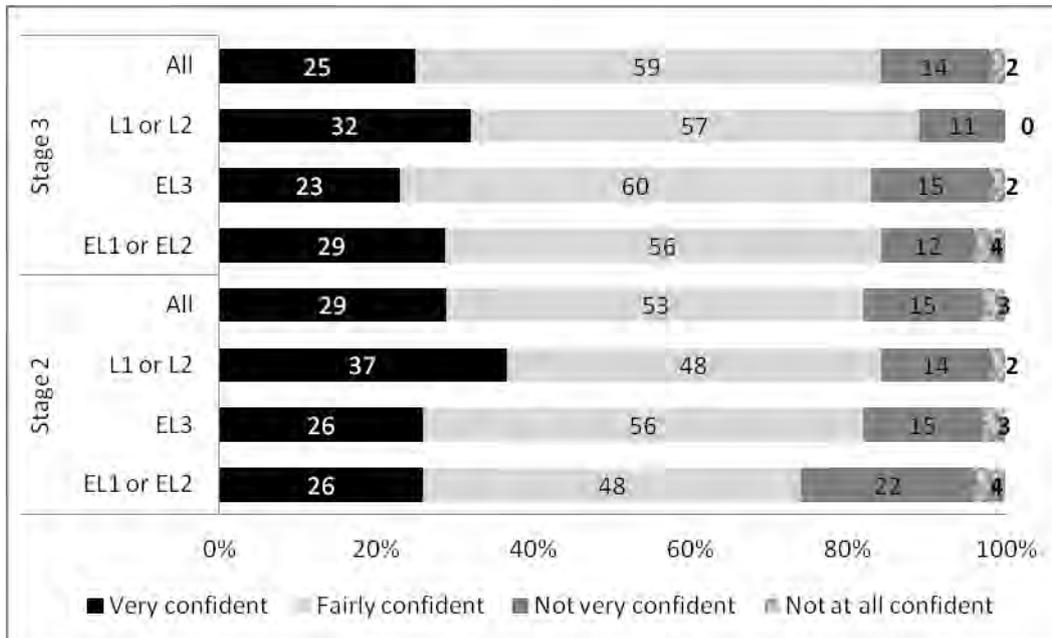
Looking at changes across different literacy skills levels over time, Figures 5.22 and 5.23 show that although the largest rise in confidence in reading occurred amongst the higher (L1 and L2) literacy skills groups, **the largest positive change in writing occurred in the lowest skills groups (EL1 or EL2)**.

By the time they had reached the Field Army, the majority of respondents at Stage 3 reported that they were 'very confident' (20%) or 'fairly confident' (57%) in their maths and number skills. **although one fifth (19%) were still 'not very confident' and 4% were 'not at all confident'**. Whereas 36% of trainees with EL1 or EL2 numeracy were either 'not very confident' or 'not at all confident' in their numerical skills, 25% of soldiers with EL3 and only 9% of those with L1 or L2 fell into these two categories.

Main points

Approximately half of the sample of trainees perceived that their levels of literacy and numeracy were about the same as their peers. Trainees with higher levels of skills were more likely to rate their skills as higher than those of their peers.

The vast majority of trainees felt 'very confident' or 'fairly confident' about their reading, writing and numeracy skills, both towards the end or at the end of their Phase 2 training and on joining the Field Army.

There was a significant difference in self-confidence between the lowest and highest skill groups. Whilst the largest rise in confidence in reading took place amongst the higher (L1 and L2) literacy skills groups, the largest positive change in writing occured amongst the lowest skills groups (EL1 or EL2).

[93] Stage 2: n=666; Stage 3: n=428

Assessed levels of literacy and numeracy

Introduction

This section explores recruits' levels of literacy and numeracy, any changes in the level of trainees' skills over the three stages of the study, and the factors that may explain any changes over that time.

The evidence

Participants completed a literacy and numeracy assessment[94] – **the survey assessment** – during their Phase 1 training, and completed the same assessment during the two follow-up stages of the study.

The assessment consisted of 20 multiple-choice questions for literacy, yielding scores between 0 and 30[95], and 17 questions for numeracy, yielding scores of between 0 and 17. The average score achieved by all recruits in Stage 1 in the literacy assessment was 22.58 and in the numeracy assessment 10.06.

The survey assessment scores can be mapped onto the national standards at all the different Skills for Life curriculum levels[96]. Figure 5.24 illustrates the distribution of literacy and numeracy levels based on the survey assessment. The largest proportion of the sample was assessed at L1 in literacy (45%) and at E3 in numeracy (33%). Overall trainees had better literacy skills than numeracy skills as assessed by the survey assessment tools.

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[94] Recruits were initially assessed with the BIA Initial Assessment tool. In the survey, recruits completed a literacy and numeracy assessment tool adapted from the 2002 Skills for Life survey. For further details of the assessment used see Parsons, S. and Bynner, J. (2006) 'Measuring Basic Skills for Longitudinal Study: The design and development of instruments for use with cohort members in the age 34 follow-up in the 1970 British Cohort Study (BCS70)'. *Literacy and Numeracy Studies,* Volume 14, No. 2, p. 7-30.
[95] On the assessment the 20 literacy questions were split into two parts, for lower and higher initial level. Respondents who score higher in the first part were automatically given 10 points for the second part of the lowest level and also completed their own higher level part two, meaning that a total score of 30 was achievable.
[96] See Parsons, S. and Bynner, J. (2006).

Figure 5.24: Levels of survey assessment Stage 1 (n=1609 [numeracy]; n=1622 [literacy])
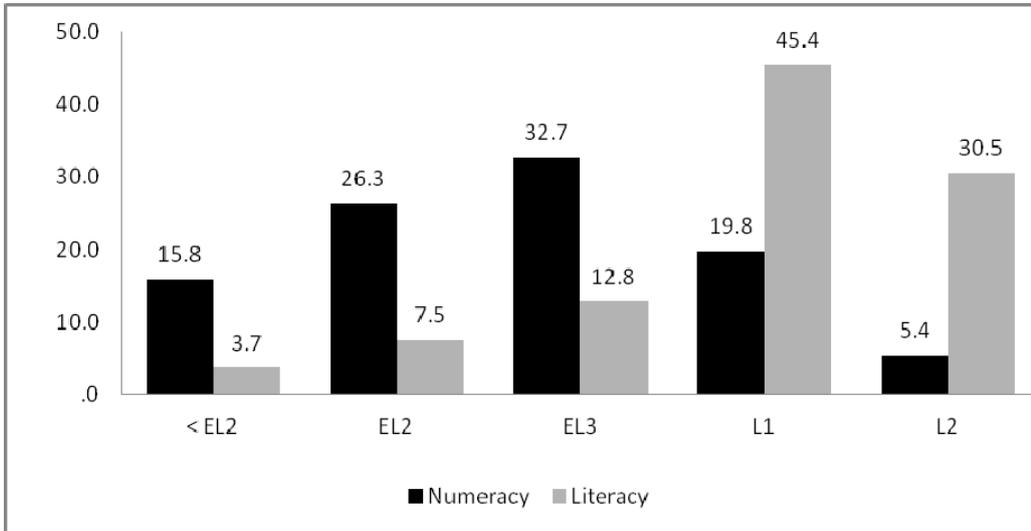
Figure 5.25 shows that recruits with the poorest literacy and numeracy skills at the Army's IA had the lowest average scores in the survey assessment at Stage 1. Although there were only 19 recruits with EL1 numeracy at IA, their average scores were identical to those with EL2 numeracy at IA. However, recruits with EL1 literacy at IA [n=41] had lower average scores than those with EL2 literacy [n=159]: 16.9 compared to 19.5.[97]

Figure 5.25: Average score in survey assessment (at Stage 1) by Army IA levels[98]

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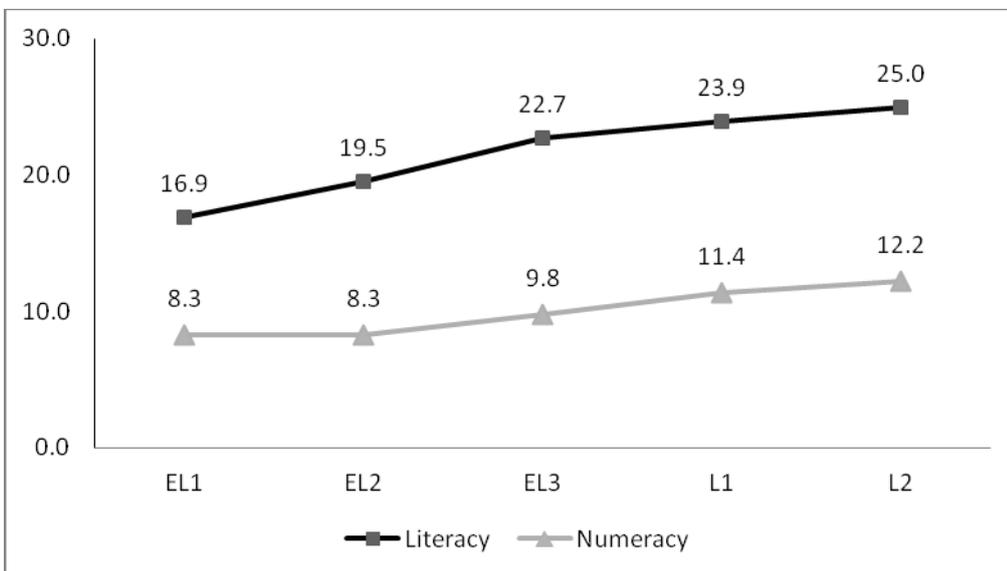
[97] Further details on the relationship between respondents' performance in the two assessment tools are provided in Appendix C.2.
[98] NB, the maximum score in literacy was 30; and 17 in numeracy.

Average scores on each literacy and numeracy test improved between the first survey assessment at the start of Phase 1 training and the second assessment towards the end of Phase 2 training. The average score for the literacy assessment was 23.5 at Stage 1 rising to 23.6 at Stage 2; the average score for the numeracy assessment rose from 10.3 to 10.5. The results suggest that there was a statistically significant increase in literacy[99] and numeracy[100] scores between Stages 1 and 2. Although the change in numeracy was also statistically significant between Stages 2 and 3, there was no significant change in literacy. The largest change in both literacy and numeracy scores is seen in a comparison between Stages 1 and 3: increasing from 23.5 to 23.8 in literacy and 10.3 to 11.1 in numeracy[101]. The smaller positive change in the literacy scores can be explained by the fact that trainees had better literacy skills than numeracy skills as assessed by the survey assessment tools in Stage 1. Hence, the starting point for literacy was already higher than it was for numeracy for many trainees.

Looking at the change in levels of literacy and numeracy between Stage 1 and 3 (see Tables 5.16 and 5.17, Appendix A) shows that some soldiers experienced a significant improvement in their skills (e.g. 12 out of 26 who started with EL2 in literacy achieved L1 in Stage 3) whereas others went down a level[102].

Numeracy

There was a statistically significant improvement in numeracy scores over the three Stages of the study, and those with lower initial skills as assessed at Stage 1 survey experienced the largest improvements over time[103]. Those who initially wanted to improve their skills, and those who attended numeracy provision in Phase 1, also showed a statistically significant increase in their skills.

However, when the training unit and research stage (used as a proxy for time) were introduced into the model, the effect of attendance of classes became insignificant. This could be explained by the fact that the effect on improvement comes not from provision as such, but from one or another type of provision, depending on how it is organised and in

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[99] Confidence level = 1%. 'Confidence levels' are explained in the Glossary.
[100] Confidence level = 9%.
[101] For more details, including the statistical models used, see Appendix C.2.
[102] This can be explained by the phenomenon known as 'test fatigue' when the same test is used several times or it could also be 'skills fade' when people do not use some specific skills for some time. It could also be a measurement error.
[103] We used multilevel growth models (regression) to use pooled data (from all 3 Stages of the study) and to take into account repeated observations over time and to control for other variables. Monitoring trends in achievement over time can be a powerful tool for assessing the impact of literacy and numeracy provision. Researchers are often faced with a dilemma in relation to longitudinal high attrition rates and in deciding whether to look at trends *for a particular level* over time, or trends for *a particular group of students* over time. Multilevel modelling can address these issues. With a multilevel model of test scores over time nested within students, we can use all the data available (pooled data) and we can observe what explains the differences in the initial test scores, the progress of recruits with different BS levels, and changes over time for trainees with different socioeconomic characteristics, with the same statistical analysis. Further details on the bi-variate analysis to explore the relationship between respondents' performance in the tests and any change in the assessment scores and their individual characteristics and characteristics of the provision are provided in Appendix C.2. Based on this analysis the variables were selected for the regression models.

which unit it is offered. Changes may also be related to informal learning and exercise of skills outside formal literacy and numeracy provision[104].

Additional numeracy findings include:

- female recruits tended to have lower numeracy scores than male recruits

- trainees with SpLD are more likely to have lower scores in numeracy

- those who enjoyed their time at school tended to have higher numeracy scores

- those who wanted to improve their numeracy, or thought their numerical skills the same or worse as compared with their colleagues, and those who attended numeracy classes in Phase 1, had lower numeracy scores across all three stages

- there were differences between the three groups of Arms and Services: trainees in Combat Arms had the lowest numeracy scores compared with both Combat Support Arms and Service Support Arms. (This reflects the different entry requirements for each Arm.)

- the data show that trainees from ATC(P) experienced slightly greater improvements in numeracy than those from AFC(H). Other training units did not have any statistically significant differences from AFC(H) in terms of the rate of change in numeracy scores from Stage 1 to Stage 3[105].

Literacy

There was a statistically significant improvement in literacy scores across the three Stages of the study[106]. Those who started with higher levels in literacy tended also to show higher levels of improvement. Those who were not sure how to compare their reading skills to those of their peers showed a higher improvement rate than those who reported that their skills were better than those of their colleagues. The effect of attendance at classes did not appear to make a positive difference to the rate of change[107].

Additional literacy findings include:

- non-British recruits and trainees with a SpLD tended to have lower literacy scores

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[104] It is also worth noting that when the model took into account changes in the numeracy scores in each training unit the data showed that trainees in ATC(P) and ATFC(W) initial scores in numeracy on average were lower than of those in AFC(H).
[105] In addition bi-variate analysis showed that there was a significant positive increase in numeracy scores in AFC)P) and AFC(H) with no change in three other training units. For more details see Appendix C.2.
[106] As with the numeracy analysis, multilevel growth models (regression) were used to use pooled data (from all 3 Stages of the study) and to take into account repeated observations over time and to control for other variables.
[107] For more details, see Appendix C.2

- respondents who stayed longer in full-time education, and read more magazines, newspapers and books at school scored more highly

- those who thought that their reading skills were the same or worse than their colleagues' had lower literacy levels

- there were differences between the three groups of Arms and Services: trainees in Combat Arms had the lowest literacy scores compared to both Combat Support Arms and Service Support Arms

- there were no significant differences across training units.

Main points

There was a statistically significant improvement in literacy and numeracy scores over the three stages of the study, and those with lower levels of numeracy skills showed a higher level of improvement over time.

The explanation for the increase in skills seems less to do with 'attending provision' in general and instead to relate to the type and structure of provision offered at one training unit or another. Although some training units (Pirbright and Harrogate) are associated with higher increases in numeracy scores than others (Catterick), the research was not able to identify the features of provision that were associated with these increases.

Literacy and Numeracy qualifications achieved

Introduction

This section looks at the literacy and numeracy qualifications gained by trainees after joining the Army. Here a distinction is made between Key Skills qualifications and Basic Skills qualifications, and qualifications are analysed both in relation to initial literacy and numeracy levels and the five training units.

The evidence

Trainees were asked about national qualifications they had gained since joining the Army (See Figure 5.26)[108]. A little under a third (30%) of all soldiers indicated they had not gained any qualifications. This may be explained by the fact that the majority of infantry soldiers at ITC(C) are only required to pass out with qualifications at EL3. Of the 70% of trainees who gained at least one type of qualification, Key Skills in Communication was the most commonly cited (43%). 70% of those who had gained new qualifications, gained more than one. The dominance of Key Skills qualifications confirms that literacy and numeracy qualifications gained as a part of apprenticeship training form the most usual route for the Army to achieve the policy aim that all soldiers should gain L1 qualifications within 3 years of joining.

Figure 5.26: Basic Skills/Key Skills qualifications gained, Stage 2 and Stage 3 data combined (n=828)
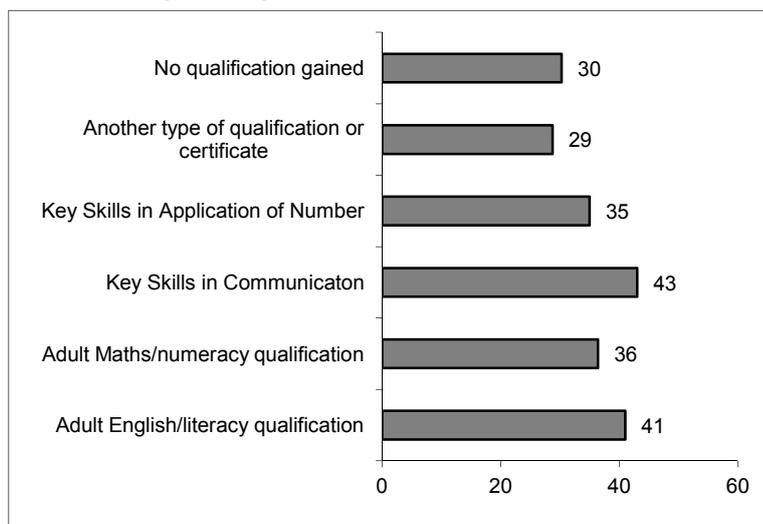
Figure 5.27 shows the levels of the literacy and numeracy qualifications gained since joining the Army. The most common level of qualification gained was L2 (around half of the trainees in each qualification category). Only a very small minority of trainees (5% in numeracy and 6% in literacy) gained qualifications at EL3.

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[108] Trainees selected from a list of 5 categories: Adult Basic Skills Literacy qualifications; Adult Basic Skills Numeracy qualifications; Key Skills in Communication; Key Skills in Application of Number; or another type of qualifications.

Figure 5.27: Levels of Basic Skills/Key Skills qualifications gained
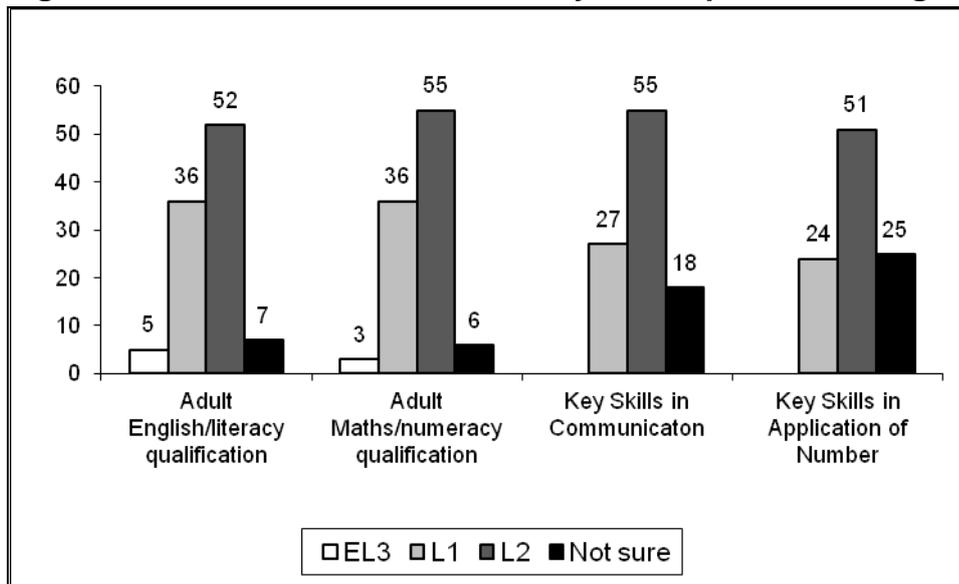
It is worth comparing literacy and numeracy levels, as assessed at IA, with levels of qualifications gained in the Army (see Figure 5.28). In numeracy, just over half (54%) of those assessed at EL3 at IA and around two-fifths (42%) of those assessed at EL1/EL2 gained Key Skills in Application of Number at L2.[109] Furthermore, **just over half (56%) of those assessed at IA as EL3 and a third (32%) of those assessed at EL1/EL2 in numeracy gained Adult numeracy qualifications at L2. The position with literacy is similar, with a high percentage of recruits with Entry levels at IA achieving qualifications at both L1 and L2.**

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[109] It should be remembered that the numbers of trainees at EL1/EL2 were relatively low.

Figure 5.28: Levels of Basic Skills/Key Skills qualifications gained by IA in literacy or numeracy
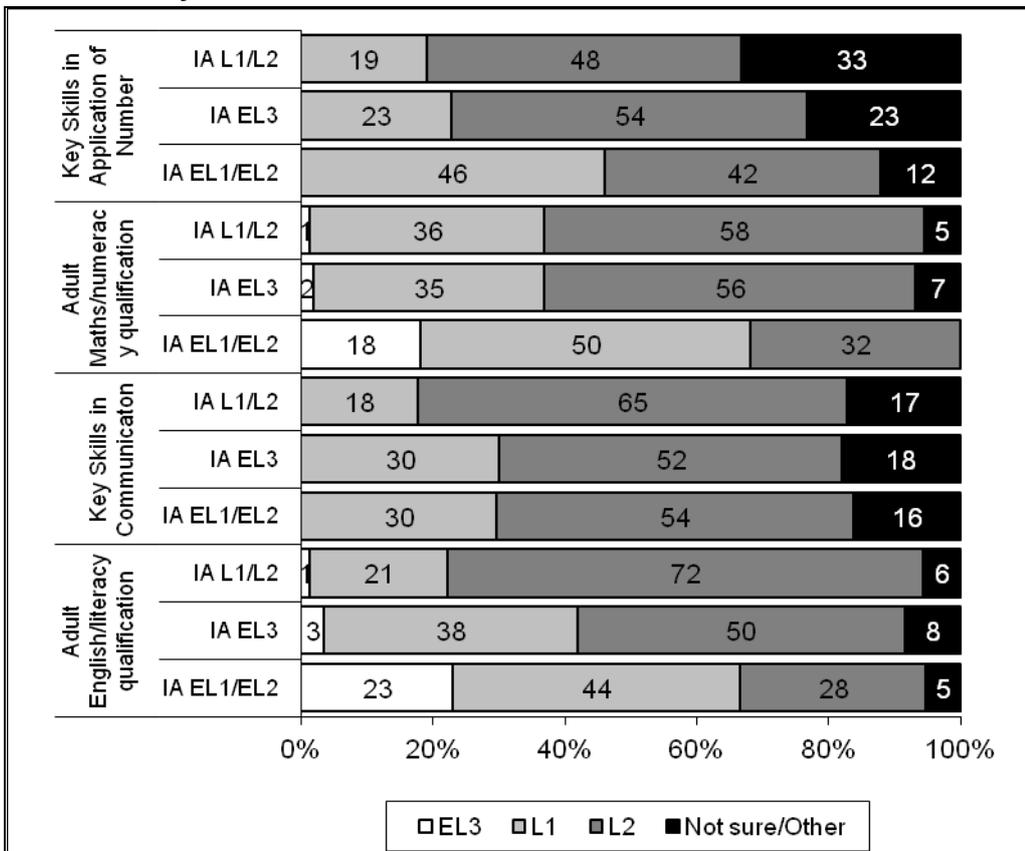
Looking next at the Basic Skills and Key Skills qualifications gained in relation to Phase 1 training units reveals that ITC(C) had the highest proportion of trainees (52%) who did not report gaining any new Basic Skills or Key Skills qualifications during their time in the Army (see Table 5.18), although it should be stressed that provision at ITC(C), to meet policy output standards, is aimed at trainees seeking to achieve EL3, and many are already at this level. Almost 99% of trainees from AFC(H) gained qualifications in Key Skills, while trainees at ATR(B) and ATC(P) reported achieving Basic Skills qualifications during Phase 1 and Key Skills in Phase 2.

These findings show how each Training Unit responds to the policy demands and support infrastructure to deliver the levels of literacy and numeracy qualifications demanded.

Table 5.18: Basic Skills/Key Skills Qualifications gained by Phase 1 Training Unit (TU)							
		ATR(B)	ITC(C)	AFC(H)	ATC(P)	ATFC(W)	Total
Adult English/literacy qualifications	N	44	68	31	129	75	347
	% within TU	46%	20%	40%	61%	66%	
Adult Maths/numeracy qualification	N	35	50	35	113	75	308
	% within TU	37%	14%	45%	54%	66%	
Keys Skills in Communication	N	61	85	68	116	34	364
	% within TU	64%	24%	87%	55%	30%	
Key Skills in Application of Numbers	N	48	46	63	105	34	296
	% within TU	51%	13%	81%	50%	30%	
Another type of qualification or certificate	N	25	118	28	47	25	243
	% within TU	26%	34%	36%	22%	22%	
No qualification gained	N	22	183	1	34	16	256
	% within TU	23%	52%	1%	16%	14%	
	TOTAL N	95	349	78	210	114	846

Note: questions were multiple choice and respondents could choose more than one qualification

Main points

30% of trainees did not gain any new literacy and numeracy qualifications. However, this is largely explained by the fact that the vast majority of infantry soldiers at ITC(C) had only to pass out with qualifications at EL3, and most recruits already had qualifications at this level.

The remaining 70% of trainees reported gaining at least one type of qualification, with KS in Communication most commonly mentioned (43%).

New literacy and numeracy qualifications were most commonly gained at L2. Around half of recruits assessed at IA at EL3 and a third at EL1/EL2 gained literacy and numeracy qualifications at L2.

5.8 Operational effectiveness

Introduction

One of the aims of this study is to explore the relationship between literacy, numeracy and operational effectiveness. The basic idea of operational effectiveness is straightforward: individuals are operationally effective if they are able to do their job, whether in training, stationed in barracks (or equivalent), or on operational deployment. This section explores how soldiers, line managers and senior officers understand 'operational effectiveness', and how literacy and numeracy fit into those conceptions.

Main Findings

Operational effectiveness is understood by all personnel as being able to do your job, wherever you are – in training, in barracks or on operational deployment.

Speaking and listening were consistently rated as most important amongst the literacy and numeracy skills for operational effectiveness.

Reading, writing and maths were rarely selected by respondents as among the three most important components of operational effectiveness; and in the qualitative sample, a minority of respondents – albeit a significant minority – identified literacy and numeracy as important attributes, with the exception of reading. This evidence should be taken seriously. However, it is important not to draw the wrong conclusions. Evidence from other sections in this chapter, derived from the same set of respondents, suggests that literacy and numeracy play a larger part in operational effectiveness than the findings from this set of questions would imply. At other points in this study, rather than ranking literacy and numeracy skills against a set of competing attributes, respondents were asked to consider on their own merits the likely contribution of literacy and numeracy skills to professional development and operational effectiveness. A respondent may both regard literacy and numeracy skills as less important than attributes unrelated to literacy and numeracy skills, and at the same time consider literacy and numeracy skills as important in their own right. The evidence from the report as a whole suggests that this represents the position of many respondents.

In addition, there is some suggestion that personnel may under-estimate the importance of literacy and numeracy, either by not recognising these skills for what they are, or by not understanding the role of literacy and numeracy in acquiring the attributes they do consider as important for operational effectiveness. Thinking quickly and working as part of a team, for example, both often require literacy or numeracy-related attributes.

There is evidence to suggest that, whilst there is a basic minimum standard that any person should reach in order to become operationally effective, beyond that there is scope for this capacity to develop further with additional training and experience.

Evidence from the qualitative sample

Building on research from earlier stages in this study, Stage 3 respondents were presented with a list of skills, qualities and attributes: every soldier and their line manager was asked to select the most important factors contributing to making soldiers' operationally effective in their trade within their Arm or Service. Altogether a small sample of 25 Army personnel took part: 14 soldiers on their first appointments and 11 Offices/NCOs. The research team were particularly keen to understand the extent to which literacy and numeracy were thought of as part of or supportive of operational effectiveness.

There was a relatively high degree of congruence between line managers and the soldiers in their judgements of the key components of operational effectiveness (see Table 5.19, Appendix A). The general attributes judged by both soldiers and their line managers as most significant in making a soldier operationally effective in the Army, and which were also more highly rated than in the other two Services, were: physical fitness, team commitment, and perseverance and determination. In respect of the 10 attributes related to basic skills, line managers and the soldiers under their command gave equal weighting to being a good listener and comprehending orders and instructions, while the soldiers gave greater weight than the Officers and NCOs to writing, reading, maths and talking in front of groups. The one literacy and numeracy skills-related element that line managers ranked more highly than soldiers was having the confidence to talk to all ranks in the chain of command. Judgments were almost equal in the importance of mental arithmetic and ICT. Importantly, the four basic skills-related attributes most widely thought to make a soldier operationally effective all concerned speaking and listening.

Turning next to compare how soldiers in the infantry rated the key attributes and skills of operational effectiveness against soldiers in the other Arms and Services (see Table 5.20, Appendix A), the latter group rated the general attributes of perseverance, resilience, experience and leadership more highly than those working as infantry soldiers (the other general attributes are more evenly matched[110]). With the exception of competence in mental arithmetic, those in the Infantry regarded the reading, writing, maths, ICT, and talking to groups and all ranks as less important to their operational effectiveness than soldiers in the other Arms or Services. Both groups, however, stressed the vital role of both speaking and, in particular, listening, with 'understanding and communicating orders and instructions' rated most highly.

These results are summarised in Table 5.21.

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[110] 'Passing your trade training tests' appears to be an anomalous result.

Table 5.21: Most important literacy and numeracy factors contributing to operational effectiveness						
	Speaking	**Listening**	**Reading**	**Writing**	**Maths**	**ICT**
Infantry						
Non-infantry						

Key:

Over 50%	
Less than 50%	

It is clear from all those interviewed that the most important literacy and numeracy skills for the soldier are those of speaking and listening, with reading also considered a necessity for non-infantry personnel. This is not to say that there is also not a relationship between writing, maths and ICT to soldiers' operational effectiveness, merely that these skills were not judged as being so important within the trades of the soldiers in this particular sample.

Judgements on soldiers' operational effectiveness

All soldiers in the qualitative sample considered that their own levels of literacy and numeracy skills were good enough to be classed as operationally effective. Six soldiers (two of whom were infantry soldiers) judged basic skills as comprising a significant element of operational effectiveness, while seven placed less emphasis on literacy and numeracy skills. All emphasised speaking and listening as essential components.

All except one of the line managers evaluated the soldiers under their command as being operationally effective. One line manager regarded a sample member as only operationally effective in their regiment at home, and not whilst on tour. However, the explanation for this lay with the soldier's immaturity and had nothing to with their level of basic skills[111].

Weak basic skills and SpLDs

Few line managers made comments about whether SpLDs would affect operational effectiveness: those who did stressed that soldiers would be offered support and guidance.

Asked how important literacy and numeracy skills were in contributing to operational effectiveness, four of the 13 line managers testified that they play a large and essential part in a soldier's general operational effectiveness at their current rank and class. On the other hand, six (all in the infantry) said that literacy and numeracy had a comparatively small role, and it was only speaking and listening skills that were essential[112].

The six Officers/NCOs who judged that literacy and numeracy played a large part were located in the non-infantry Arms or Services. A line manager asked about the contribution of basic skills to operational effectiveness said:

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[111] These judgements apply to the soldiers at their current rank.
[112] Owing to shortage of time, one line manager was not asked this question.

I think it's huge. I think it gives people the foundations to be able to sort of function, and gives them that bit of an added edge, so that when they are thrown into a situation that might be different they've got the different ways of thinking, and they have the coping skills to be able to communicate. Especially, I think, the literacy side is that they can then communicate issues or sort things out, all that sort of thing, you need those skills. It doesn't matter if you are on operations or back in the workplace, if you have the foundations, the basic skills levels, then you can communicate what the issues are.

We did, however, encounter another point of view. One NCO reported that a soldier in the infantry who was not able to read or write effectively could still be classified as operationally effective. This view was tested with other NCOs and officers[113]:

R: Would you say then that a rifleman could be operationally effective without being able to read and write?
LM: *Yes.*
R: And not being able to count at all, he could still be operationally effective?
LM: *I wouldn't class him as ineffective; he could still be an exceptionally good soldier. Sadly not having been taught the faculties of reading and writing, but I can still tell him what to do and he will still interpret it intelligently, and do it, and there are very few cases where actually he has to read orders himself, that's my job in a way, and, you know, all the signs, all the people he'll be talking to will help him anyway, and he could still be a top class soldier and have no reading and writing ability. Obviously when he looks to promote that's when it will hamstring him.*

Although the NCO highlights listening and the effect of weak literacy and numeracy skills on the prospects for promotion, he is still prepared to judge this soldier as operationally effective. Related to this, some Officers and NCOs spoke of soldiers with weak literacy and numeracy performing well on tour. There are three points that might explain this: first, these soldiers may have been assigned to a trade which requires very low levels of basic skills; second, they will not have been assigned to specific tasks within that trade that make many demands on their basic skills; and third, these soldiers will be supported and covered by peers and other colleagues. It should be added, therefore, that if soldiers can be spoken of as operationally effective in these circumstances they are effective only within significantly constraining conditions. So, if an individual is only required to fire a rifle and he can do this, he can be judged to be effective in this task. However, in the current operational climate, this role could potentially change on a daily basis, and he could be placed in another situation (requiring greater use of literacy and numeracy skills) where he was not effective. In other words, they are also likely to be of less use to the organisation

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[113] Key terms in interview transcripts: LM – Line Manager; R – Researcher; S – Soldier.

as a whole and employable in fewer specialist areas and roles, as compared with a person with a higher level of literacy and numeracy skills.

What has emerged from this section is the critical importance of speaking and listening for every soldier. In respect of the 14 soldiers employed in the five Arms or Services in the qualitative study, the strongest relationship between basic skills and operational effectiveness was found in the RAMC and RA; the relationship was less strong in the AAC and RAC and weakest in the infantry.

Evidence from the quantitative sample

In Stage 3, soldiers in the quantitative survey were asked about the qualities or attributes that a soldier should have in order to be operationally effective both at home and while deployed on active service. They were asked to nominate, from a list of 14 options, the **three most important attributes** that made a soldier operationally effective[114] (see Figure 5.29). The three most commonly nominated attributes were:

- physical   fitness

- mental   toughness

-    team work.

When soldiers were asked to select one attribute from a list of three, they identified first '**being able to work as a part of a team**' (24% for the general soldier and 27% for themselves); second, 'being physically fit' (21% and 20%) and third 'being mentally tough' (18% and 15%). Literacy and numeracy skills appeared last in the list of attributes that respondents' considered necessary for operational effectiveness.

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[114] This was a simpler variation on the requirement imposed on the qualitative sample, to ensure that the quantitative survey did not become too burdensome on respondents who were also required to complete a literacy and numeracy assessment.

Figure 5.29: Whole quantitative sample: qualities required to be operationally effective (%, N=1284 responses). *Respondents could choose three from a list of 14.*
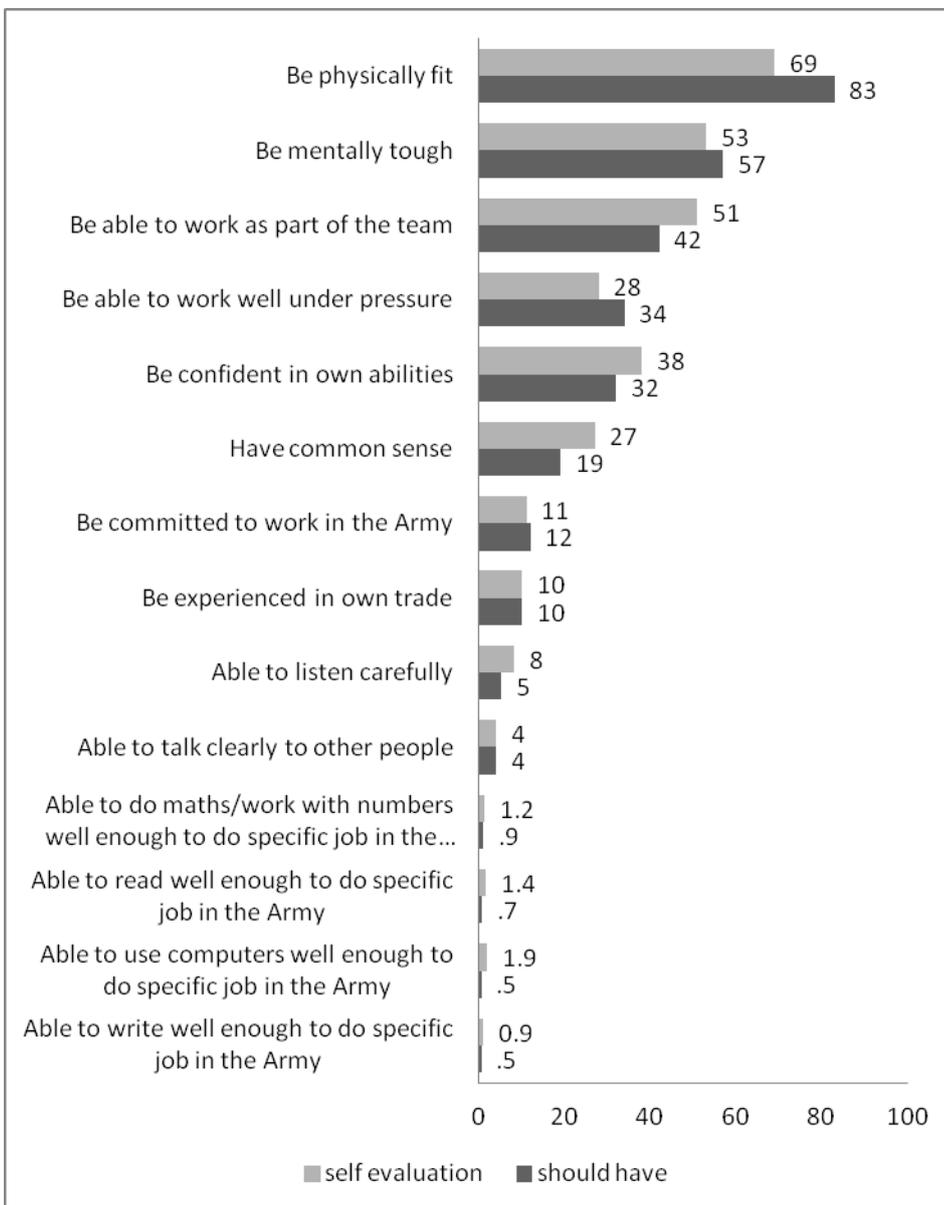
Turning to the general qualities that soldiers judged as being important for operational effectiveness across all three Arms and Services, the most highly rated elements were the same as those presented above: physical fitness, team commitment, and mental toughness (see Table 5.22, Appendix A). Soldiers from the Combat Service Support were less likely to choose mental toughness (78%) and physical fitness (47%), and more likely to choose team-work (51%), as compared with Combat Arms (84%, 65% and 38% respectively) and Combat Support Arms (89%, 54% and 40% in that order).

Once again, literacy and numeracy were rated as one of the three most important qualities by very few respondents – reading, writing, maths and ICT in particular are rarely mentioned. Speaking and Listening, however, were more highly rated. However, it should

be emphasised that it does *not* follow from this that soldiers think that literacy and numeracy are not relevant to operational effectiveness; it follows only that, in the main, they rate them as less important than the other attributes that they were asked to choose between.

Developing the idea of operational effectiveness

One question raised by evidence in this chapter and elsewhere in this report is whether and how far operational effectiveness should be assessed along a continuum. There is no doubt that a minimum level of competence is required in order for an individual to be operationally effective in any sense. Beyond that, however, is operational effectiveness a capacity that can continue to develop with more extensive training and experience of active service? Respondents were often sympathetic to the effect of experience, including this NCO who also saw operational effectiveness as linked to confidence and critical thinking:

> *Yeah, it's a sliding scale. You know, there's someone who hits the absolute base standard, can fire his weapon and can be told what to do. Operationally effective? Yes. Great soldier? No, probably a bit poor. Or, you know, operationally effective, all over his weapon, understands exactly, is able to interpret things intelligently, has the confidence to spot something, and despite the fact somebody will say to him 'do this', he will say actually 'no, this is this', and apply a thinking approach. It's a sliding scale. Not sure if this makes the point intended!*

All the interviewees in the qualitative sample were asked if there were any attributes or skills that were essential to operational effectiveness and not included amongst the options they had been asked to choose from. The most frequently mentioned attribute was 'common sense'[115]. Four also highlighted the ability to 'work independently' and unsupervised. As one NCO recalled:

> *You can tell soldiers time and time again to do something, and they'll do it, and they'll do it well, but it's knowing his job and actually doing it without you telling him, and that's suddenly, you know, when he becomes very, very good. And that's when you know somebody's a proper soldier. OK, make sure you clean your weapon. I've already done that. Or, you know, you go in and he's already stripped it, just basic little things like that, that's what I notice.*

This quality was also associated with progress towards becoming a Class 1 soldier: soldiers are graded from Classes 4 to 1, and as they rise through the grades, they are assessed as gradually becoming more independent[116].

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[115] Nine responses from the 25 soldiers and Officers/NCOs who took part; six were from line managers, three from soldiers.
[116] Very few soldiers who are Class 3 will be deployed on active service as they are at a level where they are judged to only be able to work 'under detailed supervision'. None of the 14 in the sample were Class 1 soldiers but infantrymen begin as Class 2 soldiers when they arrive at the first appointments, and they are 'deemed competent' because they can work 'without detailed supervision'. A Class 1 soldier is also judged to be, in addition of being able to work on his/her

5.9 Career progression and professional development

Introduction

One of the primary objectives of this study was to examine the relationship between literacy and numeracy levels and soldiers' career progression and professional development. This chapter further explores the effect of literacy and numeracy levels on career progression and reasons for joining, staying with or leaving the Army.

own, 'skilled and experienced', and also having 'supervisory responsibilities' for others (Source: Army General and Administrative Instructions, Vol 2, Chapter 51).

Main findings

This section explores the relationship between literacy and numeracy and soldiers' career progression and professional development. The principal findings are as follows:

The most common reasons for joining the Army were: 'It is a good career path' (71%); 'Had always wanted to join the Army' (61%); 'I wanted to travel' (52%); 'It seemed exciting' (39%); 'I was bored with Civvy life' (37%); 'It will give me good opportunities for education and learning' (36%).

By the time trainees entered the Field Army, around 80% intended to stay for nine years or more. Recruits with higher levels of literacy and numeracy were more likely to stay in the Army.

Aspirations were high: 14% of those intending to stay in the Army aimed to become officers, 14% Warrant Officer 1 and 15% Warrant Officer 2.

Most non-infantry line managers thought the level of literacy or numeracy had an impact on a soldier's career.

Many line managers reported that better literacy and numeracy skills led to greater flexibility on the part of soldiers and improved their employability.

All interviewees agreed that the significance of literacy in particular increased on promotion to Lance Corporal.

Higher levels of literacy and numeracy are a significant factor leading to better retention in the Army.

Almost all interviewees reported that the Army had had a positive effect on their personal lives.

Many soldiers have NCOs/Officers as role models, and these can play an important part in promoting the need for good literacy and numeracy.

Although the appraisal reports rarely include educational or academic development, they represent an opportunity for discussions on gaining further educational qualifications as part of soldiers' career development.

Evidence from the qualitative sample

Career pathways

The average length of time taken for a private soldier to reach the rank of Corporal depends on their Arm or Service[117]. It generally takes at least two years (and often longer)

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[117] For example a technician in the R SIGNALS or REME will be promoted to Lance Corporal on completion of their Phase 2 training.

from joining to be promoted to the rank of Lance Corporal, five to eight years to be promoted to the rank of Corporal, and between nine and thirteen years to be promoted to the rank of Sergeant[118].

Although all soldiers understood the rank structure, and were aware of the average length of time it took to reach the first rank of Lance Corporal, only seven of the 14 soldiers in the qualitative sample could see a clear career pathway ahead in their particular trade in terms of the specialisations on offer. (Five could not, and two were unsure). Eight Officers/NCOs spoke of a clear pathway for soldiers to build a career, although four considered that the options were rather hazy in the early stages because there were so many different specialisms within each trade. Soldiers have many opportunities, and there are numerous career options. As one NCO said:

> As with anything in the Army, there is no limit really. If you are willing to put the work in then yeah, there's every chance to progress in all areas, be that academically, or military-wise.

Twelve of the 13 line managers reported that the Army will look after a soldier's career, and that they saw their role as a 'career manager' offering guidance on career progression. At the same time it was emphasised that **individuals were expected to take the initiative** and look after themselves.

There is an infrastructure to support personal development, and soldiers have opportunities to upgrade their skills and gain qualifications to support their professional development and for the time when they return to civilian life. These opportunities can be discussed with specialist staff at AECs or with Resettlement Officers at any time, but particularly when soldiers approach the end of their Army careers. As in all the Armed Forces, soldiers have an entitlement to use Standard Learning Credits (SLCs) or Enhanced Learning Credits (ELCs), whereby soldiers are offered subsidised support for learning activities. However, even at the final stage of research, only two of the qualitative sample could explain what SLCs were; half (seven) reported that they had not heard of them, while four said the term was familiar but they were not sure of the details[119].

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[118] This is a shorter time than in the other two Services: in the Royal Navy, the average time taken to reach Leading Hand (equivalent to Corporal) is around 5-6 years, and petty officer (equivalent to Sergeant) is usually around 10 years; in the RAF the timings are around 6-7 years to reach Corporal and 14-15 years for Sergeant.
[119] One soldier was not asked this question.

Evaluating career progression

The 14 soldiers and their line managers in the qualitative study were asked to evaluate how their careers were progressing. As is summarised in Table 5.23, Appendix A, in eight cases, line managers' judgements were more positive than the judgements of the soldiers themselves.

Three soldiers thought their Army careers were going 'very well', four 'well' and seven 'OK'. Three soldiers reported that they intended to serve a full career of at least 22 years, three wanted to serve for at least 10 years, while five would review their position after four years. Two intended to leave after four years[120].

On the potential for promotion, four line managers remarked that it was too early to say, five considered their soldiers to have considerable potential, while two thought that the soldiers would be promoted within the coming year[121].

Understanding the criteria for promotion

Eligibility for promotion is based on performance and potential, and performance is judged by a set of competencies including leadership, ability to show initiative and the ability to work independently[122]. It is important to note the connection between these last two attributes and the qualities that line managers identified as integral to operational effectiveness.

Seven soldiers in the qualitative sample understood the link between literacy and numeracy qualifications and promotion, whilst the remaining seven were either unsure or had 'no idea'. One NCO in the infantry reported that, in his view, the 'vast majority' of his platoon did not know that they were supposed to gain L1 literacy and numeracy qualifications within three years of joining up. Two line managers also appeared unaware of this policy[123].

In the quantitative sample, **94% of soldiers knew that literacy or numeracy qualifications were required for promotion**. However, 11% thought that they needed EL3 qualifications to be promoted to the rank of Corporal, 27% thought that the minimum level required was L1 and 62% believed it to be L2. **Soldiers starting their training at ITC(C) were the most uninformed:** 11% as compared with the average of 6% across all training units. In addition, 18% of this group thought that they required EL3 for promotion to the rank of Corporal.

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[120] One soldier did not comment on this question.
[121] Two line managers were either unavailable to comment or were not asked.
[122] Many line managers also mentioned attributes such as enthusiasm.
[123] However, one of the officers in the higher chain of command commented that the policy of needing to achieve L1 Basic Skills qualifications after three years is perhaps more 'inspirational' than actually achievable.

Literacy, numeracy and seniority

13 of the 14 soldiers reported that literacy and numeracy skills would become more important as they gained promotion, and most thought that this would occur at the rank of Lance Corporal.

All 13 line managers thought that higher levels of literacy and numeracy were vital in the context of promotion. The two most important skills in early careers were said to be speaking and listening; line managers were always looking to see how well soldiers could understand and retain information. Five Officers/NCOs thought that literacy and numeracy began to assume greater importance at the rank of Lance Corporal, five at the rank of Corporal[124] and one at the rank of Sergeant. Two line managers (in the trades of Infantry and RA) were adamant that good levels of basic skills were necessary from day one of joining the Service.

The main reason for line managers identifying the rank of Corporal as the point at which basic skills became particularly important is related to literacy, and to writing in particular. Good literacy skills are required when a soldier attends the three-part Junior NCO Command, Leadership and Management (JNCO CLM) Course, which prepares a soldier to become a Corporal. This includes a week of educational content spent in an AEC, and includes essay writing[125].

One line manager spoke of how the skills of report writing can 'make or break' a soldier's career.

> *You [JNCO] have to be able to supervise somebody beneath you, so you have to do their report writing. Now a lot of the report writing here could make or break somebody's career, and basically you've got to then be able to write a report on someone, so it's honest, truthful, and it's good. And basically if the guy can't hardly write or read especially he'll struggle straightaway there [...] Basically as soon as he becomes a JNCO, and going on these advanced courses, there's a hell of a lot of reading involved in it, a hell of a lot, and it's reading he's got to digest as well, so if he has problems reading he'll have problems on the course straight away, without even going on the subject matter of the course.*

Fieldwork in the later stages of the study included many examples from NCOs and Officers of a JNCO, and even a SNCO, who had weak basic skills and who was yet judged by peers and managers as being an 'excellent soldier':

> *I worked for a platoon sergeant who was the most untidy…his writing was atrocious, but he was the best soldier I've come across in a country mile ...You don't maybe need to be the greatest at numeracy and literacy. He*

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[124] One NCO (in AAC) said that literacy and numeracy 'kick in' when a soldier is promoted to Class 1 rather than Corporal.

[125] If a soldier is deemed to have failed a particular part they are given an amber rating, although nothing will happen about this until they apply for promotion to the next grade (e.g. sergeant). An amber rating is comparatively rare and one RMCO estimated it to be less than 10%.

was able to read adequately, he was able to write, it was just atrocious, but give a set of orders, excellent, he was able to receive the plan, understand it, then put across his plan, communicate, command, the lot.

In general, however, the **evidence suggests that the importance of literacy and numeracy skills increases with seniority of rank, and that low levels of skills become correspondingly important**.

Line managers reported that good literacy and numeracy skills could provide a soldier with 'an added edge' or are 'an added bonus', and one NCO reported a 'snowball effect' whereby soldiers with a core set of basic skills will often be given greater responsibilities, thereby having the opportunity to learn and develop more rapidly than peers with weaker skills. In these cases, **soldiers with higher levels of literacy and numeracy skills are perceived as more flexible and employable within the Army.**

An NCO made the point that the higher the level of literacy and numeracy a soldier has the better: the NCO will have to spend less time explaining new skills and concepts, and the soldier is more self-sufficient. In other words, **good literacy and numeracy enhance a soldier's trainability**.

Effect of literacy and numeracy on careers

Most of the soldiers did not think that their literacy or numeracy levels had had much of an effect on their early careers in terms of being able to carry out their roles and duties effectively. However, three soldiers from AFC(H) all reported that their literacy and numeracy provision had helped, not only by providing them with L1 and/or L2 qualifications, but also by improving their confidence to tackle tasks. Several line managers confirmed that **soldiers from AFC(H) (generally with higher levels of literacy and numeracy skills) stood out as a cohort, performing at a higher standard than their counterparts.** In contrast, two soldiers, (1 and 13, both dyslexic) spoke about how their poor writing skills made learning much more difficult, particularly when it came to taking notes in class and in the field. Another soldier spoke of how poor writing skills (note-taking in particular) had a negative impact on other skills, such as listening; the need to concentrate on the act of writing can get in the way of the ability to absorb and make sense of information. In this case, poor writing can have the effect of a lower level of learning. **This once again draws attention to how poor skills can undermine performance in training, and how levels of the separate components of literacy and numeracy skills are inter-related.**

Of the 12 line managers who commented on the effect of literacy and numeracy skills on a soldier's career, six reported that it played a large part, including in the early part of the career. The six Officers/NCOs in charge of the infantrymen placed less stress on the importance of literacy and numeracy, but they all emphasised the vital importance of speaking and listening, and all agreed that the importance of basic skills would increase following the first promotion. One NCO in the infantry stated that:

I think the biggest bar to a lot of private soldiers in their progression, in the initial stages certainly, is more basic skills like confidence, and if anything oral communication, rather than writing, because it's often the way they

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come across that actually starts them on their career path to Lance Corporal. It's the way they talk to people and the way they listen, the way they understand information. And I think all of them are fine in that area. Writing and reading tend to come later in the day, and I think that's when they tend to be concentrated on.

Effect of weak literacy and numeracy and SpLDs on careers

One point that emerges from this study is that, just as the importance of good literacy and numeracy skills increases as soldiers' assume more and higher levels of responsibility; equally, **the significance of poor literacy and numeracy grows with increasing seniority.**

The need for L1 literacy and numeracy skills for promotion is the result of extensive mapping of the junior NCO roles to the literacy and numeracy curricula. Soldiers promoted to Corporal not only require the L1 qualification but are also required to be able to use L1 skills in order to fulfil their job, and to be operationally effective in their new role. It seems likely, therefore that poor levels of literacy and numeracy skills will increasingly affect career progression for soldiers as they move through the ranks.

The Army policy on dyslexia (2006) states that dyslexia is not a bar to recruitment or promotion, although any candidates must meet the 'Training Performance Standards and Operational Performance Statements'. In other words, if it turns out that dyslexia has a significant effect on soldiers' capacity to do their operational tasks effectively without additional/special support, they will either be transferred to another trade or, where this proves impossible, discharged.

There was no evidence that dyslexia had any direct effect on the careers of the four dyslexic soldiers in the qualitative sample, and all were judged by their line managers to be operationally effective. However, three (1, 11 and 13) reported that their dyslexia made their learning and note taking more difficult. This was an acute problem for soldiers 11 and 14, whose dyslexia was not diagnosed until Phase 2. Soldier 11 reported that, although he had not received help in the early Phases, he was receiving support now that he was in the Field Army. Soldier 13 was offered coloured plastic sheets to cover his writing when the text became 'jumbled up'; these sheets are commonly given to people with scotopic sensitivity such as Meares-Irlen syndrome. This soldiers' line manager thought that the main effect of a SpLD would be to slow down a soldier's career advancement, but that this is dependent on the trade as well as the severity of the SpLD, the level of support offered, and the coping strategies of the soldier.

Whether or not the cause of a soldier's weak basic skills is attributable to a SpLD, the study has repeatedly provided evidence that weak literacy and numeracy have an effect on learning and training.

Appraisals

Although soldiers may have informal talks with their line managers throughout their careers, the formal opportunity for career evaluation takes the form of a mid-term and annual appraisal report which soldiers receive on reaching their regiment in the Field Army.

Appraisals are written by Officers, although JNCOs and SNCOs who are likely to have better (day-to-day) knowledge of the soldiers may assist in providing evidence for the reporting officer. Appraisals provide soldiers with a formal opportunity to consider how their career in the Army is progressing, and include further opportunities for personal and professional development. Although the appraisal reports rarely include educational or academic development, this does represent an opportunity for discussions on gaining further educational qualifications as part of soldiers' career development. One section includes questions for line managers on 'communications', which some take to include writing and speaking skills – the latter, as we have seen, are amongst the most important basic skills during a soldier's early career.

Although none of the line managers felt confident enough to give advice on taking further literacy or numeracy provision and gaining higher qualifications, they were all aware that they needed to send soldiers to the local AEC or eLC, normally via the RCMO. This will allow the RCMO to manage and support the individual soldier as part of their broader career development.

Literacy and numeracy and personal development

With one exception, all respondents in the qualitative sample were very clear that **the Army had had a significant impact on their personal lives**. Most reported an **increase in confidence** as the primary change, along with greater maturity, responsibility and improved social skills. Examples included being better able to talk to groups, being more articulate, better organised, 'less gobby' and more independent. All these respondents were in no doubt that these developments had occurred as a result of their life in the Army. The changes they reported had also been noticed by families and friends at home. Two soldiers spoke of how basic skills classes had helped to raise their aspirations and encourage a desire to learn.

Role models

During the second stage of the study, 18 of the 20 trainees spoke about role models within the Army; that is someone who had been, or still is, a key influence, and who has acted, or acts, as an ideal or exemplary type. These role models are influential and they elicit respect, and they are characterised by their authority, expertise, knowledge, experience, and ability to talk about their active service on deployment. Role models are significant chiefly because they can have a large formative influence on personnel. As one senior officer suggests, '*It's only if their [the trainees'] role models say this is important, this is necessary, take an interest in it, that you will get people actively engaging.*'

Evidence from the quantitative sample

Soldiers' aspirations

More than three-quarters of **new recruits** in the quantitative sample (79%) wanted to remain in the Army after their first four-year engagement: 10% did not yet know, 8% wanted to leave at the end of their first four-year engagement and 4% wanted to leave before that (see Figure 5.30). Of those planning to remain in the Service, 13% wanted to serve between 5 to 8 years, 36% between 9 and 12 years, 38% hoped to remain in the Army for 13 to 22 years and 13% for more than 22 years.

By the **second stage of the study** almost half of respondents (47%) stated that they wanted to remain in the Army past their first 4 years of service. This represents a substantial decrease in the proportion of those with longer term Army career plans compared to responses in Stage 1. 6% said that they wanted to leave now, and a further 11% reported that they wanted to leave at the end of the 4 years of service. However, this large difference is not an indication that more trainees want to leave the Army at the point of first engagement, for only a slightly larger proportion (17% compared to 12%) reported that they wanted to leave the Army in Stage 2 as compared to Stage 1. Rather, it appears that these results reflect an increase in uncertainty among the sample group about their long term plans in the Army: 37% of trainees at Stage 2 were unsure of whether they wanted to leave at the end of their 4 year engagement, while only 10% were unsure at Stage 1.

Among those who wanted to remain in the Army beyond their first engagement, the majority (56%) planned to serve between 13 and 22 years, 33% planned to serve between 9 and 12 years, and the remaining 11% between 4 and 8 years.

In the final stage an even smaller proportion of soldiers stated that they wanted to remain in the Army beyond their first 4 years of service (32% compared to 47% and 79% respectively). 11% said that they want to leave now, and a further 14% reported that they wanted to leave at the end of their 4 years of service. There was a further increase in the level of uncertainty among participants about their long term plans in the Army: 44% of soldiers at Stage 3 were unsure of whether they wanted to leave at the end of the 4 year engagement – 10% had been unsure at Stage 1 and 37% at Stage 2.

Amongst those who wanted to remain in the Army beyond their first engagement, 42% planned to serve between 13 and 22 years and 40% between 9 and 12 years (40%). The remaining 17% planned to serve between 4 and 8 years.

Figure 5.30: Do you plan to leave the army at the end of your first 4 year engagement? (% responses by stage)
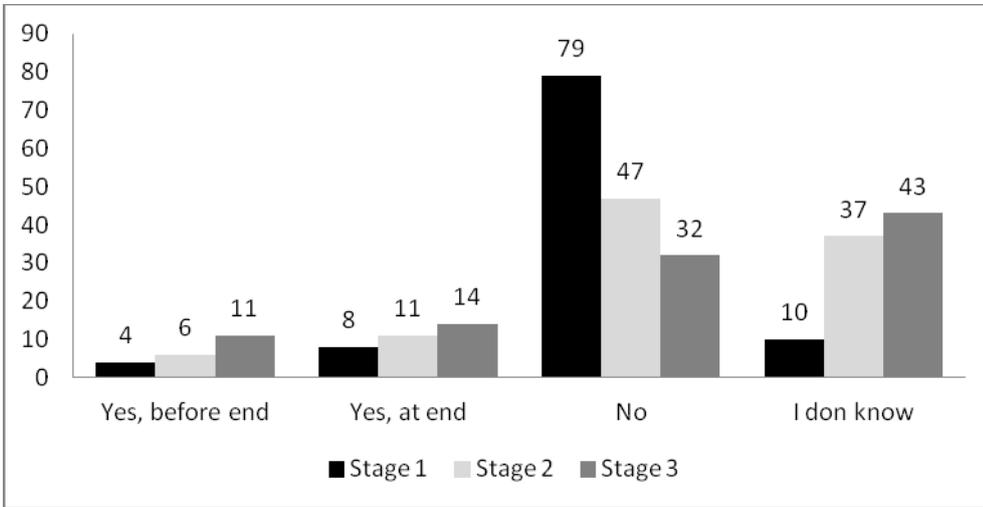
Career aspirations

Figure 5.31 shows the aspirations of recruits, as recorded at Stage 1, for the rank they aimed to reach by the end of their career. Almost a quarter aspired to gain a commission, while those with EL1 literacy were the least likely to have aspirations of holding a rank above Staff Sergeant (41% compared with 59% of recruits with L2 literacy).

Figure 5.31: Rank participants aspire to reach by the end of their Army career (of those planning a career in the Army beyond their first 4 year engagement)
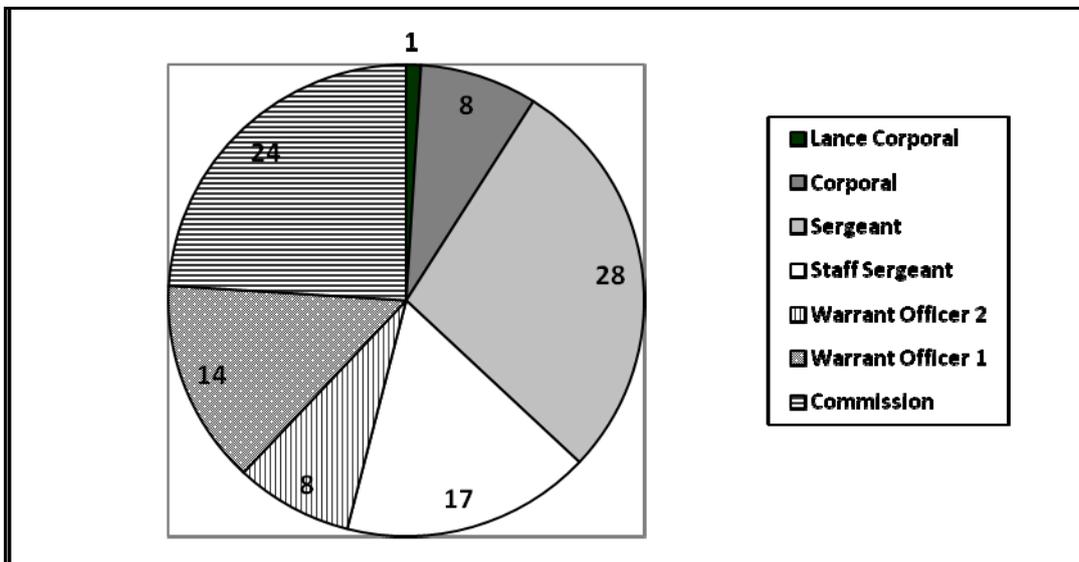
In Stage 2, 14% of respondents wanted to go on to gain a commission as an Officer, a reduction from Stage 1; this may reflect a higher level of unawareness amongst Phase 1 recruits as to what reaching the higher ranks would entail. Sixteen percent had ambitions

to reach Warrant Officer 1 and 9% to Warrant Officer 2. Twenty-one percent aspired to the rank of Staff Sergeant, 29% to Sergeant and 10% to the rank of Corporal.

Although there were no differences between literacy and numeracy levels regarding the decision to stay in the Army or planned length of stay, **trainees with higher levels of numeracy and literacy were more likely to aspire to gain a commission by the end of their Army career** (13% at Entry level compared with 17% at L1 or L2 in literacy; 12% at Entry level compared with 18% L1 or L2 in numeracy).

In the third and final stage, **14% of respondents in the Field Army wanted to gain a commission as an Officer.** 14% wanted to reach the rank of Warrant Officer 1, 15% Warrant Officer 2, 15% Staff Sergeant, 26% Sergeant and 12% Corporal.

For sample members who remained in the Army, there were no differences between literacy or numeracy levels regarding the decision to stay in the Army, planned length of stay or career plans.

Factors contributing to early discharge

One quarter (25%) of recruits from the Stage 1 quantitative sample had already left the Army early, well ahead of their contracted 4-year engagement period. In this section we examine the characteristics of these recruits, and ask whether retention in the Army is associated with poorer levels of literacy and numeracy[126].

Nationality and age is related to retention: British recruits are more likely to leave, as compared with their non-British colleagues; and younger recruits are more likely to leave as compared to their older peers. .

Trainees were more likely to leave the Army if they joined because they did not know what else to do, or if they had planned to leave before completing their contracted engagement (minimum – 4 years' service). Trainees from Combat Arms and from AFC(H) and ATFC(W) were also more likely to leave. This can be explained by the fact that AFC(H) and ATFC(W) have JE that are more likely to leave ahead of their contracted 4-year engagement period.

Higher retention rates applied to recruits in the Study sample:

- with GCSEs grade A*-C in Maths and English

- who stayed in full time education for longer and who had fewer suspensions

- with a higher Initial Assessment in numeracy at recruitment

- with higher numeracy and literacy skills as assessed by this study at Stage 1.

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[126] These results are derived from bivariate analysis. Tables C.1.1 and C.1.2, summarising the characteristics of those who left the Army before the end of their 4 years service, are included in Appendix C.1 Characteristics that are statistically significant are marked with an asterisk.

A more complex logistic regression analysis[127] was undertaken to investigate the specific impact of literacy and numeracy on retention (whilst also discounting other possible causes). This analysis is described in Appendix C.1. The factors of nationality, Phase 1 training centre, Arms and Services, as well as age left full time education, plans to leave the Army, reason for joining the Army because of nothing else to do and number of times suspended from school **stayed significant across all models**.

The principal results regarding the specific impact of literacy and numeracy on retention are as follows:

- **Recruits with higher levels of numeracy and literacy were more likely to stay in the Army**[128].

- Recruits with GCSEs A*-C in English were less likely to leave the Army compared to those with no GCSEs in English.

- Recruits with numeracy at EL2 and L1 as at IA were more likely to stay in the Army compared to those with EL1 numeracy at IA.

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[127] Regression analysis aims to summarise the relationship between a 'dependent' variable and one or more 'independent' explanatory variables. It shows how well (or otherwise) we can estimate a respondent's score on the dependent variable from knowledge of their scores on the independent variables. This technique takes into account relationships between the different independent variables (for example, between literacy and numeracy levels and an Army training centre). Regression analysis (see Table C.1.3) is often undertaken to support a claim that the phenomena measured by the independent variables cause the phenomenon measured by the dependent variable. However, the causal ordering, if any, between the variables, cannot be verified or falsified by the technique. Causality can only be shown by means of a study that incorporates a randomised controlled trial.
[128] This statement applied to those who left the Army prior to their four year first engagement. The slightly higher p-values for these findings reflect the low number of recruits in EL1 categories.

5.10 Conclusions and recommendations

Each section in this chapter contains a summary of the evidence presented in this report, and many of these summaries are not repeated here. Rather, section 5.10 identifies a series of over-arching priorities for the Army, before presenting a set of more detailed conclusions and recommendations arising from the study as a whole.

Overarching priorities

A number of general areas of high importance emerge from this study, with implications for the Army first and foremost, but also for the other Services, and for workplace contexts in general.

Effectiveness of Army Literacy and Numeracy Policy

In general, the Army Basic Skills Policy is successfully adhered to, and it has produced highly significant gains for Army personnel and the Service as a whole. The Army annually delivers a huge number of nationally recognised literacy and numeracy qualifications, and the success rates are consistently high. There are structures for delivering literacy and numeracy to soldiers at every stage of their career, and there is an effective whole organisation commitment to the implementation of the policy, including from the senior Chain of Command.

Literacy and numeracy **policy and provision in the Army represents a model of national significance, with lessons and implications for large organisations in non-military contexts.**

There are, however, challenges that arise in the context of a training and education system that caters to up to 10,000 new recruits each year. The pursuit of other organisational priorities inevitably places limits on the scope for provision to be flexible and personalised to the needs of individual recruits. Education has to fit around the demands of an intensive training pipeline; and there does not seem to be a widespread understanding of SpLDs and their impact on individual soldiers.

There remain a significant number of line managers who appear not to have wholly accepted the importance of literacy and numeracy skills for the soldiers they are responsible for. The importance of literacy and numeracy skills for all soldiers is a message that continues to need to be widely communicated.

Any review of the Army Literacy and Numeracy Policy should build on the significant success of existing policy, whilst also looking to improve the quality of literacy and numeracy provision and the capacity to respond to individual literacy and numeracy and learning related needs.

Evidence of impact: literacy and numeracy levels and provision

There is conclusive evidence of the importance of literacy and numeracy for professional development and operational effectiveness, and the significance of these skills increases as soldiers are promoted and assume higher level responsibilities.

What is less clear is the contribution formal provision makes to improving skills: the evidence from this study is mixed, and one reason it is mixed may be that the provision itself is of variable quality. As emphasised elsewhere in this report, the core curricula for literacy and numeracy qualifications is generally highly regarded, but providers in all sectors may be tempted to narrow their coverage to those areas included in the final assessments. It is therefore possible that although the record of achievement delivered by the Army is impressive, the related improvement in skills may not be in line with those results. The rigorous assessment regime associated with Functional Skills should help to clarify these issues and more significantly improve the underpinning skills of soldiers in the future.

Given the established and significant contribution of literacy and numeracy to professional development and operational effectiveness, **it is a priority to promote high standards of** literacy and numeracy **teaching and training, and to gather evidence on the impact of high quality interventions to the outcomes that are a priority for the Army**.

Context and time to learn

Much of the evidence on adult learning suggests that most learners require in excess of 100 hours of learning-related activity[129] if they are to make significant and durable learning gains. Much of the Army provision is much shorter than this. Three key points emerge:

- **The record on** literacy and numeracy **related qualifications is impressive, and pass rates are consistently high**. **The vast majority of trainees progress by at least one level of literacy and numeracy during their first phase educational provision (or during their first phase of literacy and numeracy provision)**. This is a significant achievement and fully in line with the Armed Forces Literacy and Numeracy Policy.

- At the same time, **there is a question about the extent to which achievement rates are accompanied by significant and functional learning gains.** Qualifications are not always a reliable indicator of long term improvements in learning, and it is a challenge to produce these improvements in a short period of time. The issue is one of balancing the priorities of achieving qualifications and promoting sustainable learning progress.

- The Army context has a large bearing on the effectiveness of provision. This context includes a close link between qualifications and promotion, and high expectations of trainees, who operate in an environment in which short and intensive training is the norm. An environment with these characteristics may have a significant and positive effect on the receptivity and ability to learn and make learning progress over a shorter period than otherwise. **It is a priority to gather**

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[129] This includes not only the hours spent formally training and teaching but also the time spent on tasks related to this in the context of self study, distance learning and ICT-supported learning.

further evidence on the impact of the Army context on durable and functional learning progress.

Context and functional skills

Evidence from this study confirms the importance of the organisational and cultural context in shaping the demands on literacy and numeracy provision and the extent to which it is treated as a priority. In the Army there are more urgent priorities than support for literacy and numeracy, and **effective provision must fit around the most pressing requirements of the organisation, including the training pipeline and the operational cycle.**

Organisational requirements include the need for skills that are functional in an operational context; many trainees learn best 'by doing', by learning and applying skills in contexts closely related to the demands of training and active service. In endorsing the introduction of Functional Skills, **it is recommended in particular that literacy and numeracy provision includes resources that support the use and practice of skills in operationally relevant contexts, and that the assessment system recognises these priorities.**

Speaking and listening

All elements of literacy are important for professional development and operational effectiveness, but, before all others, speaking and listening were consistently rated as essential by all personnel we took evidence from. Soldiers are frequently required to convey and absorb information accurately, which is often through the skills of speaking and listening. **This underlines the importance of promoting sound speaking and listening skills.** But literacy and numeracy skills and aptitudes are often related: soldiers who struggle with writing find it harder to listen when also note taking; soldiers who lack confidence in speaking before a large group find it difficult to speak well in that context. **Improving speaking and listening, therefore, requires the promotion of related literacy and numeracy skills and aptitudes, including writing, reading and confidence building.**

One general question is how far the current Skills for Life qualifications provide soldiers with a set of skills and competencies that the organisation most needs. Officers from the higher chain of command reported that there should be a greater concentration on 'critical thinking' and 'problem solving' in order to develop the Army's 'agile edge'. There is a widespread acknowledgement that Basic Skills and Key Skills provision has not provided *all* Service personnel (in this case, *all* soldiers) with sufficient skills to cope in their job roles. This is one reason why the Army is wholly committed to the introduction of Functional Skills, a qualification which is expected to provide individuals with a set of skills more closely aligned to the needs of the Army.

Employability

Some soldiers who possess sound literacy and numeracy skills may as a result be able to offer more to the Army, both because they are likely to require less in the way of training and support, and because they may be more flexible when it comes to the roles they are

expected to undertake. This suggests that some trainees may become more or less employable depending on the level and range of their literacy and numeracy skills.

Detailed conclusions and recommendations[130]

The sample of soldiers

The single most important feature of the profile of recruits is the large number who join with literacy and numeracy at EL3 or below. This distinguishes the Army from the RN and RAF.

Typical participants were British males aged between 16 and 20 with literacy and numeracy skills at EL3. 18% of trainees reported having at least one SpLD (typically dyslexia). Those most likely to report a SpLD were recruits with the lowest levels of literacy and numeracy, including 34% of recruits with EL1 or EL2 literacy. Many had left education with poor academic qualifications, with 30% of all participants having no GCSE at any grade. 11% had been permanently excluded from school.

Literacy and numeracy provision

The Army has made substantial progress in building its literacy and numeracy infrastructure. Educational staff in the Phase 1 training units reported that provision and resources had improved enormously over the last few years.

There were differences between the five training units in respect of entry requirements, length of military training and literacy and numeracy provision. Provision was generally intensive, taking place in the day and fitting around a busy training pipeline. Literacy and numeracy outcomes varied across the training units: for example, 80% of trainees at AFC(H) passed out with a L2 qualification in literacy and numeracy. This is an example of how the greater time available for literacy and numeracy education for those on the Junior Entry training programme allows for significant improvements in literacy and numeracy skills.

The organisation and timing of educational provision at the end of military Phase 1 and Phase 2 training at ITC(C) was such that it was a challenge to demonstrate to trainees the relevance and application of literacy and numeracy to their training.

It is recommended that trainees at ITC Catterick who already have literacy and numeracy qualifications at EL3 or equivalent should have the opportunity to take literacy and numeracy qualifications at L1[131]. Trainees who passed out would not then be at a disadvantage as compared with those from other training units, the majority of whom leave with literacy and numeracy qualifications at L1.

Note-taking is a widespread literacy practice and an element of operational effectiveness. However, there was little evidence from the qualitative study that note taking strategies were the subject of teaching and training. **It is recommended that these and related**

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[130] Recommendations in bold.
[131] Access to Level 1 qualifications will be achieved through the planned Apprenticeship.

literacy strategies are given a higher priority in the context of literacy and numeracy provision, and are formally taught during Phase 1 training.

When educational and military staff liaise effectively it provides them with insights into the needs and demands of their respective contexts. Liaison was particularly effective at AFC(H), where military trainers regularly visited educational classes to talk about their roles and responsibilities in the Army, and how this is related to trainees' literacy and numeracy abilities and progress. Acknowledging the challenge presented by the high turnover of military staff, **it is recommended that, where practicable, arrangements are put in place to support effective liaison arrangements**.

'Best books' were found particularly useful as sources of reference and for revision purposes. **There is the potential to make more use of these as an educational resource, in the context of the teaching of writing. It is recommended that the practice of 'best books' is continued, but that line managers are made aware of trainees who have very low levels of literacy or a SpLD**.

The main outcome of Basic Skills/Key Skills classes is to provide trainees with the chance to gain a national qualification, which also provides them with better opportunities for career development and better employment options in the civilian world. The quantitative study provides clear evidence that soldiers perceive an improvement in some skills, particularly reading, and some line managers felt that qualifications provide the underlying skills which enable soldiers to operate more effectively. Pass rates are impressive.

It is recommended that, on arrival at their regiments, soldiers are briefed about the educational opportunities available to them, in order that they can implement a learning plan in negotiation with their line manager. This will include the opportunities of where and when they can access further literacy or numeracy courses (including English and maths GCSEs at L2) leading to qualifications.

The practice of end-of-Phase discussions to provide a formative assessment of progress between trainees and Officers or SNCOs is widespread[132]**, and could become standardised across the Army**.

One option for consideration is that soldiers are required to gain literacy and numeracy qualifications at L1 when they are appointed Class 1 soldiers rather than, as at present, after 3 years. This would serve to simplify existing arrangements, which, in respect to the 3 year rule, may not always be complied with.

Understanding 'Operational Effectiveness'
Operational effectiveness is understood by all personnel as being able to do your job, wherever you are – both in barracks and deployed on operations.

Speaking and listening were consistently rated as most important amongst the literacy and numeracy skills for operational effectiveness.

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[132] It is done in all ARTD units, for instance.

Reading, writing and maths were rarely selected by respondents as among the three most important components of operational effectiveness; and in the qualitative sample, a minority of respondents – albeit a significant minority – identified literacy and numeracy as important attributes, with the exception of reading. This evidence should be taken seriously. However, at other points in this study, rather than ranking literacy and numeracy skills against a set of competing attributes, respondents were asked to consider on their own merits the likely contribution of basic skills to professional development and operational effectiveness. Respondents may regard literacy and numeracy skills as less important than other attributes that soldiers require, whilst also believing that basic skills make a significant contribution to operational effectiveness. The evidence from the report as a whole suggests that this represents the position of many respondents.

In addition, there is some suggestion that personnel may under-estimate the importance of literacy and numeracy; either by not recognising these skills for what they are, or by not understanding the role of literacy and numeracy in acquiring the attributes they *do* consider as important for operational effectiveness. Thinking quickly and working as part of a team, for example, both often require literacy or numeracy-related attributes.

The relationship between literacy and numeracy and operational effectiveness is seen as differing between each Arm or Service, and within each of the trades within them.

There is potential to raise awareness amongst trainees, soldiers, line managers and other personnel of the significance of literacy and numeracy skills in relation to operational effectiveness.

It is recommended that the Army continue to identify and support high quality literacy and numeracy provision as a contribution to ensuring that soldiers are operationally effective.

Changes in levels of literacy and numeracy

The evidence shows a significant improvement in literacy and numeracy levels between Stages 1 and 2, and in numeracy between Stages 2 and 3. There was no significant change in literacy levels between Stages 2 and 3. (The assessment instrument tested only reading and writing; not speaking and listening.) There is no evidence-based explanation as to why only numeracy levels increase after Stage 2[133]. Literacy and numeracy provision is associated with a particularly significant impact on those with the lowest levels of skills.

The increase in skill levels is not explained simply by attending provision; the organisation and delivery of provision varies across training units, and some training units were associated with larger increases than others. **It is recommended that assessments of classroom practice are undertaken at units associated with**

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[133] We can speculate that recruits are making more use of their numeracy skills in training and subsequent deployment, whereas in Phase 1 training, literacy elements were more prominent.

higher and lower rates of increases in skills, with a view to identifying effective practice.

30% of all respondents in the quantitative sample indicated they had not gained any national qualifications since joining the Army, but this is largely explained by the fact that the vast majority of infantry soldiers at ITC(C) were required to pass out with qualification at EL3, which most already held. The remaining 70% of all trainees reported gaining at least one type of qualification, most commonly Key Skills in Communication (43%). Of those who had gained at least one new qualification, 70% had attained more than one.

The study found evidence of an increase in self-confidence with individuals' improving literacy and numeracy skills; the largest improvements were observed among those with the lowest levels of literacy and numeracy skills.

Soldiers' views on literacy and numeracy

Throughout the three years of the study, literacy and numeracy were regarded as important by the vast majority of participants for an Army career and for doing their job as a soldier. All soldiers interviewed thought their own levels of literacy and numeracy were sufficient to be able to carry out their jobs effectively.

A clear majority of trainees in the quantitative study were satisfied with literacy and numeracy provision during Phase 1 (70%) and Phase 2 (67%), and only 6% of trainees reported dissatisfaction. Over half of trainees thought that their classes were relevant to their job in the Army. Two thirds of trainees reported that classes were helpful for Phase 2 trade training, and 85% reported that Phase 2 literacy and numeracy training was helpful for their work in the Field Army. Around half of trainees reported that classes had a positive impact on their reading (52%) and writing (49%), as well as on their confidence and their desire to learn further. Almost two thirds of trainees (63%) reported that their numeracy classes had helped to improve their skills.

Every soldier in the qualitative study said that their speaking and listening skills had developed since joining the Army and that these were the basic skills most commonly used in their everyday roles.

At Stage 3, 18% of soldiers reported that they needed to improve their reading, 31% their writing and 43% their maths. The group most likely to want to improve their literacy or numeracy were trainees assessed at EL1 or EL2 at IA. **It is recommended that the Army conduct an audit of skills needs following the completion of Stage 2 training, with a focus on trainees with the lowest levels of literacy and numeracy at Initial Assessment.**

Overall 73% of all trainees reported difficulties with at least one task in reading, writing and numeracy. 60% reported difficulties with writing – spelling in particular. During Phase 2, 23 of 53 trainees who filled in their Arm or Service as 'infantry' on a questionnaire spelt the word incorrectly.

Officers' and NCOs' views of literacy and numeracy

All interviewed Officers and NCOs reported that literacy and numeracy classes were sufficient for what the Army requires, and all were broadly supportive of the Army's literacy and numeracy provision. Line managers were fully supportive of soldiers who sought to take further literacy and numeracy qualifications, including GCSEs, and said they would attempt to make time for this within the busy working schedule. In general, line managers regarded further educational qualifications as a benefit for the individual, and therefore, the organisation.

NCOs and officers emphasised that basic skills are often learned *in situ* from line managers and peers. **This underlines the importance of designing literacy and numeracy provision that is contextualised to the Army's requirements and needs, and to the demands of trainees' jobs and roles.**

A significant number of Officers and NCOs, particularly from the infantry, did not appear to understand the impact of poor literacy and numeracy on soldiers' trainability and operational effectiveness. **This suggests a need to raise awareness amongst Officers and NCOs of how literacy and numeracy impacts on the ability of soldiers to benefit from training and to operate effectively on active service**. It is understood that literacy and numeracy awareness training should be carried out by AECs, but compliance with this policy may need to be re-enforced.

The ability to listen carefully and communicate clearly was regarded by all staff and trainees as an essential skill; speaking and listening were the only skills regarded as essential in all trades. However, many Officers and NCOs did not appear to regard speaking and listening as elements of literacy. **Whilst unequivocally recommending that the promotion of speaking and listening skills is considered a priority, there is an issue of their relation to literacy; in keeping with common usage in other contexts, some personnel may regard speaking and listening as elements of 'oracy'.**

The literacy and numeracy skills that proved most difficult for line managers to assess were maths, ICT, reading and writing. This suggests either that managers did not know how to recognise these skills, or that the majority of soldiers used these skills intermittently, or that the skills did not form a large part of the soldiers' job in these Arms or Services. **In the former case we would recommend an awareness-raising exercise amongst managers; in the latter cases we would recommend that trainees are provided with adequate opportunities to practice their basic skills in order that they are consolidated and improved.**

Literacy, numeracy and soldiers' careers

Line managers reported that the Army would look after and support a soldier's career, and that their role was that of 'career manager', offering guidance on career progression. Managers also emphasised that soldiers were expected to take the initiative.

By the final stage of the study 25% of soldiers wanted to leave the Army at the first opportunity. There were no differences between literacy or numeracy levels regarding the decision to stay in the Army, planned length of staying or career plans. There were higher

retention rates for those with GCSEs grade A*-C in Maths and English, and those with higher numeracy and literacy skills assessed at Stage 1. The contradiction between different assessment of literacy and numeracy and its impact on retention can be explained by differences between assessments measuring different aspects of the skills spectrum.[134]

In Stage 3, respondents gave significant evidence of ambition: around a sixth wanted to gain a commission as an Officer, to reach Warrant Officer 1 or 2 or to become a Staff Sergeant. A quarter aimed to reach at least Sergeant.

Most of the soldiers (94%) knew that they needed to have particular literacy or numeracy qualifications if they wanted to be promoted in the Army; however, just over 25% actually knew what that level is.

It was widely reported that the significance of literacy and numeracy skills increases with increasing levels of responsibility. 13 of the 14 soldiers in the qualitative sample, together with their line managers, reported that literacy and numeracy would become more important following promotion.

It is recommended that Corporals and other NCOs are used as role models, 'Literacy and Numeracy Ambassadors' or 'Literacy and Numeracy Champions' in order to promote the message that good levels of literacy and numeracy are necessary for professional development and operational effectiveness. The NCOs can give examples of how they use literacy and numeracy skills in their own roles and duties.

Assessments

A significant proportion of recruits are both initially assessed at Entry Level in literacy and numeracy and report having A*-C GCSE in English or maths. Some allowance should be made for errors associated with self-reporting, and for the fact that GCSE qualifications incorporate standards and purposes very different to those that apply to the process of Initial Assessment. Nevertheless, this raises a question about how far GCSE qualifications have led to literacy and numeracy gains, and how far these qualifications serve as a useful guide to the levels at which recruits are functioning on entry to the Army.

Record-keeping

The transfer of records of literacy and numeracy qualifications from Phase 1 to Phase 2 training was patchy and inconsistent, and records were seldom accessed by line managers.

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[134] There is a need to explain the apparent discrepancy between finding an association between GCSE qualifications and retention on the one hand, and yet no association between retention and literacy and numeracy levels on the other. We surmise that retention is unlikely to be related to literacy and numeracy levels, and that any relationship with GCSE's is likely to be explained by features of the GCSE profile unrelated to literacy and numeracy, including socio-economic status, school experience and so on. In addition, GCSE's and the literacy and numeracy assessments used for providing evidence for this study are not employing the same set of measures; in other words they are not all measuring exactly the same thing.

Although records of an individual soldier's literacy and numeracy qualifications are kept on the JPA, many line managers found it difficult to access the information. Some records examined on the Army's PROMIS software were found to be inaccurate. Few line managers had heard of the PROMIS database and they did not appear to have any direct access to it.

No interviewed officers and NCOs had looked at any education records in Phase 2 training or in the Field Army. In Stage 3 the majority paid little attention to soldiers' levels of literacy or numeracy unless a problem presented itself in the course of carrying out roles or duties, or when checking over records in the process of recommending a soldier for promotion.

It is recommended that the effective transfer of trainees' educational records between the Phases of training should become a consistent practice, and that records are accurate and accessible to line managers.

Funding national qualifications

In line with the Army Basic Skills Policy, all literacy and numeracy courses are delivered free to the individual soldier. Although there are costs involved, the Army has benefited from Government funding through the Skills for Life strategy. The Train to Gain service and the National Employers Service (NES) have encouraged delivery of literacy and numeracy in the workplace at minimum disruption to the employer. For the Army, the mapping of apprenticeships to the existing military training has allowed the Service to draw down funds to support the non-military education activities. To the extent that the needs of the Army and the priorities of Government remain aligned, the current funding regime has a positive impact on Army resourcing.

Policy implementation: local variations

Although Army policy on literacy and numeracy provision is clear, the study found two examples of 'local interpretations'. At one infantry unit, the NCO stated that all soldiers needed to gain L1 literacy and numeracy qualifications in order to be awarded a Class 1 trained soldier[135]. And at one RA unit the RCMO reported that, because of changing technical requirements, he expected all soldiers to gain an L2 qualification within three years of arriving or five years of enlistment. Although this is not official policy, it suggests that there may be a perception amongst some personnel that there is some (limited) scope for interpreting Army policy at a local level[136].

SpLDs

Soldiers are reluctant to inform their managers of SpLDs. In many cases this may be accounted for because soldiers do not believe that their SpLD affects their work.

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[135] Soldiers are graded from Classes 4 to 1. They normally leave Phase 2 training as Class 3 and then upgrade to Class 2 within the next 18 months, but this differs within individual regiments. For example, an infantryman is a Class 2 soldier when he arrives at his first appointment in the Field Army.
[136] Individual Arms & Service Directors can set a higher level if they wish; there is no scope to set a lower level.

It is possible for a trainee to be severely dyslexic and pass through both military and educational classes in Phase 1 without their SpLD being detected. On some occasions a SpLD was not picked up until Phase 2. There were cases of individuals who, despite having SpLD needs that affected their learning, did not receive additional support in Phase 1 or 2.

It is recommended that, in line with RAF policy, soldiers should inform their line managers of a SpLD when they arrive at their Phase 2 training establishment and their first appointments in the Field Army. In this way, line managers will have opportunities to provide them with greater levels of support.

It should be a priority for Officers and NCOs to become aware of how SpLDs can affect the ability of soldiers' to be operationally effective.

Chapter 6: Royal Navy

6.1 Introduction

This chapter reports the main findings of research into literacy and numeracy provision in the RN. The chapter begins with a summary of the sample of personnel involved in the study (6.2) followed by a profile of literacy and numeracy provision (6.3) and a review of the support offered by the RN to those with a SpLD (6.4). The chapter goes on to examine evidence showing how literacy and numeracy skills are used by personnel in their day-to-day job roles (6.5), and the contribution of literacy and numeracy skills to operational effectiveness (6.6). This is followed by a review of the career progression shown by the sample group (6.7) and their personal development (6.8). Finally, the chapter reviews the implementation of RN policy (6.9) and closes with conclusions and recommendations for RN policy and practice (6.10).

A number of themes emerge in this chapter:

- The very small number of personnel with low levels of literacy and numeracy, and the implications for the scale and content of provision.

- The impact of the replacement of Key Skills and Basic Skills with Functional Skills.

- The importance of sound literacy and numeracy skills to operational effectiveness.

- The importance of Speaking and Listening skills in all the branches and specialisations reviewed.

- The increased importance of literacy and numeracy skill levels after a first promotion.

- Concerns from those with severe SpLDs as to how they may be supported after promotion.

- The extent to which a policy focus on achievement of literacy and numeracy qualifications comes at the expense of coverage of the curricula.

- The very high success rates delivered by Learning Centres in gaining literacy and numeracy qualifications, and the rapidity of achievement.

- Improving the effectiveness of the delivery of on-board education.

As noted in Chapter 2, the entry profile of recruits to the Royal Navy (RN) is markedly different from that of the Army, and includes more entrants at Level (L2) than any other Service. Table 6.1 shows the literacy and numeracy Initial Assessment (IA) levels for all recruits on entry during 2010. These figures illustrate that almost all RN recruits already

have L1 qualifications. The major challenge for the Service is therefore to enable all recruits to reach L2 in literacy and numeracy before promotion to Petty Officer (PO) or Sergeant or within eight years of joining.[137]

Table 6.1: Literacy and numeracy levels of RN recruits on entry (2010)		
RN IN TOTAL	**Literacy at IA**	**Numeracy at IA**
EL1	-	-
EL2	-	-
EL3	1%	1%
L1	24%	24%
L2	75%	75%

The recent update to the Armed Forces Literacy and Numeracy Policy, designed to take account of the introduction of Functional Skills, uses the phrase 'literacy and numeracy' where it had previously used Basic Skills. As in the Army Chapter, we have retained use of Basic Skills in the context of defining the type of literacy and numeracy provision being provided, i.e. 'Basic Skills' is used to refer to the Certificates in Adult Literacy and Numeracy, and 'Key Skills' referring to the Key Skills Communication and Application of Number qualifications.

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[137] As outlined in the RN Basic Skills policy, see Chapter 2.

6.2 Sample

> **Main Findings**
>
> Very small numbers of individuals enter the RN with low levels of literacy and numeracy, and this conditions the extent and nature of literacy and numeracy provision in the RN.
>
> The attrition rate for the RM trainees included in our sample proved higher than expected. This was partly because we took trainees from Hunter Group which has a higher rate of attrition than those on mainstream training. Any further study of education provision for RMs would need to use a different methodology from that used for this study.

This section describes the profile of the sample of interviewees and identifies the distinguishing characteristics of each of the personnel who took part.

Fourteen men and women were interviewed in Stage 3 of the study: 12 AB ratings[138], one Marine and one Marine trainee. Whenever possible interviews with the ratings were conducted on board their ship, where it was easier to interview their line manager at the same time. This approach was successful, and interviews were secured with 10 line managers of the target group. However, practical considerations and world events were such that it became impossible to reach the entire sample in person. Of the 14 trainees, 10 were interviewed face to face; one submariner was interviewed by phone from Faslane, and three ratings completed electronic questionnaires on board ship.

The enquiry focused on the contribution made by literacy and numeracy skills to RN job roles and operational effectiveness, the introduction of Functional Skills and the provision of literacy and numeracy education while at sea. For this reason the majority of the educational interviews took place with education staff involved with the Apprenticeship programmes or with Naval Education and Training Service (NETS) officers, fully qualified teachers who deliver literacy and numeracy education on board ship. Senior officers responsible for education and training in the RN were also interviewed to gain an understanding of current policy priorities and development.

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[138] On completion of Phase 2 training the trainees joined the deployed strength as AB2 ratings. Once they have completed their task book and attained their Operational Performance Statement (OPS) they are promoted to AB1, also known as 'gaining their star'.

Table 6.2 provides a summary of who was interviewed in Stage 3 of the study and where:

Table 6.2: Summary of all personnel interviewed						
	AB Ratings	RM/ RM Trainee	Military staff	Education staff	Senior staff	Total
Portsmouth	3		3	1	5	12
Devonport	5		5	2		12
Arbroath		1		1		2
CTCRM		1	2	2		5
MWS				2		2
HMS Raleigh				3		3
Remote (telephone/email)	4		2	1		7
Total	12	2	12	12	5	43

Key: CTCRM - Commando Training Centre Royal Marines at Lympstone in Devon; MWS – Maritime Warfare School, at HMS Collingwood, Hampshire.

In common with the other Services, entrance to a particular branch or specialisation is dependent on an individual's Recruitment test (RT), a mixture of basic skills assessment and psychometric analysis. The range of branches covered by this study is therefore limited to those who accept personnel with relatively low levels of literacy and numeracy skills: Warfare and Seaman specialists, Communication and Information Systems (CIS) specialists, Writers and Chefs as well as the Royal Marines (RM).

Table 6.3: Summary of RN and RM trainees						
Trades	Male	Female	Age on 1 Jan 2011			Total
			Under 21	21-30	Over 30	
RM/RM Trainee	2		1	1		2
Warfare Specialist	7		3	3	1	7
CIS specialist	1	1	1	1		2
Writer[139]	1			1		1
Chef	1				1	1
Seaman Specialist		1			1	1
Total	12	2	6	6	3	14

During the Stage 2 research period, it proved impossible to gain access to most of the original subjects. The majority of the ratings were undertaking their first trip on board ship, while most of the initial RM trainees failed to pass initial training at CTCRM. In order, therefore, to continue to develop a sustained analysis of the progression of ratings'

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[139] In the Stage 2 report Writers were referred to as 'Personnel Logisticians'; their job title has now reverted to the original form of 'Writer'.

careers, 13 new subjects were selected for interview during Stage 2, each of whom had a similar educational background to the members of the original cohort.

During the final stage of the study (Stage 3), all remaining original trainees were targeted for interview together with all replacement RM trainees and two replacement ratings. Twelve of the 15 ratings who were targeted were interviewed. One subject was unwilling to cooperate, one submariner was not been available at any stage in the research window, and a further rating who had been on board Ark Royal was redeployed to another ship at very short notice.

Of the initial group of six Royal Marine trainees, only 2 successfully passed out[140]. One of these was sent on pre-Afghan training without notice leaving one interview with a fully trained marine, which was carried out immediately prior to his deployment to Afghanistan. One RM trainee was also interviewed prior to his voluntary discharge. As a result, it is clear that this study can offer little in the way of an analysis of the provision of education for marines once they enter the trained strength. A different approach to sample selection and follow up interviews will be required in any future attempt to study literacy and numeracy skills in the RM.

Table 6.4, Appendix A provides an overview of the trainees interviewed at each stage of the research.

Stage 3 face-to-face interviews were conducted with ratings on board HMS Daring, HMS Diamond, HMS Ocean, HMS Campbeltown and HMS Somerset. Other interviews took place at HMS Nelson, the Learning Centre at Devonport, the RN Museum in Devonport and at CTCRM and RM Condor, Arbroath.

A summary of the literacy and numeracy skills levels on entry of the trainees interviewed in Stage 3 at is shown in Table 6.5. In the following text trainees are identified by the numbers used in the following table.

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[140] The success rate for RM trainees is around 50%, but only about 27% in the 'standard' 32 weeks. This means that most trainees spend at least some time in a Hunter Company, from which the trainees for this study were selected.

Table 6.5: Summary of literacy and numeracy (proxy qualifications or IA) of RN and RM interviewees on entry						
Trainee No.	Branch/speciality	Literacy at IA	Numeracy at IA	Current Literacy qualification level	Current numeracy qualification level	Has SpLD
1	Logistician/Chef (submariner)	L2	EL3	L2	L2	
5	CIS (submariner)	EL3	L1	L1	L1	
7	Logistician/Writer	EL3	L1	L2	L1	
8	Warfare/AWT	EL3	L1	L2	L2	Dyslexia
9	Warfare/AWT	EL3	EL3	L2	L2	Dyslexia
10	Warfare/AWT	EL3	EL3	L2	L2	
11	Warfare/AWT	EL3	L1	L2	L2	
12	Warfare/EW	L1	EL3	L1	L2	
13	Warfare/EW	EL3	L1	L1	L1	
15	Warfare/EW	L1	L1	L2	L2	
21	RM (FPG)	L2	L1	L2	L1	Dyslexia
27	RM (trainee)	L2	L2	L2	L2	
32	CIS	EL3	EL3	L2	L2	MI
36	Seaman	L1	EL3	L2	L1	

Key: AWT – Above Water Tactical; EW – Electronic Warfare; CIS – Communication and Information Systems; FPG – Fleet Protection Group (based at Faslane); MI - Meares-Irlen Syndrome.

The military staff interviewed included the line managers and Divisional Officers (DOs) of the sample group. In the cases of the three ratings who completed questionnaires on board ship it proved impossible to gain a view of their progress from a line manager. We were also unable to obtain an interview with the line manager of the RM interviewed immediately before deployment to Afghanistan.

Table 6.6: Military staff interviewed			
Interviewee	Rank	Branch/ Specialisation	Location/ mode
A	Petty Officer	Warfare/EW	On ship
B	Sub Lieutenant	Warfare/EW	On ship
C	Petty Officer	CIS	Telephone
D	Lieutenant (DO)	CIS	Telephone
E	Sergeant	RM	CTCRM
F	Corporal	RM	CTCRM
H	Petty Officer	Logistician/Chef	Devonport
I	Chief Petty Officer	Seaman	Devonport
J	Leading hand	CIS	On ship
K	Petty Officer	Warfare/AWT	On ship
L	Leading hand	Logistician/Writer	Portsmouth
M	Chief Petty Officer	Warfare/AWT	On ship

Key: AWT – Above Water Tactical; CIS – Communication and Information Systems; EW – Electronic Warfare; CTCRM - Commando Training Centre Royal Marines at Lympstone in Devon

The majority of interviews with education staff included personnel concerned with the introduction of Functional Skills, or NETS staff delivering Basic Skills to personnel on board ship. Interviews were conducted at the Maritime Warfare School (MWS), HMS Raleigh, HMS Nelson, HMS Drake, CTCRM and RM Condor.

Table 6.7: Education staff interviewed	
Position	Location/Mode
BST	Telephone
NETS	Arbroath
Apprenticeship Manager	HMS Raleigh
BST	HMS Raleigh
BST	HMS Raleigh
Accreditation Manager	MWS
KS/FS Manager	MWS
BST	CTCRM
NETS	Devonport
RM Accreditation	Telephone
NETS	Portsmouth
NETS	Devonport

The senior officers interviewed had responsibilities for the provision of both Basic Skills and Key Skills/Functional Skills within apprenticeships and education policy. These interviews all took place at Naval Command Headquarters on Whale Island, Portsmouth.

Table 6.8: Senior staff interviewed

Rank/Position	Location/Mode
Commander	Portsmouth
Commander	Portsmouth
Lt. Commander	Portsmouth
Lt Cdr	Telephone
RN Education Policy & Coordination	Portsmouth

6.3 Characteristics of literacy and numeracy provision in the Royal Navy

Introduction

This section examines how literacy and numeracy provision is organised and delivered in the RN. It starts by outlining the policy development that saw the Naval Maths and English Test (NAMET) replaced by the LANTERN framework (Literacy and Numeracy Testing and Education in the RN), reviews Key Skills/Functional Skills provision as part of the apprenticeship frameworks, examines the role of the Learning Centres, and reviews delivery of education for ratings on board ship. Finally, this section reviews funding of literacy and numeracy and how literacy and numeracy records are kept.

The primary aim of the RN literacy and numeracy policy is to have all personnel operating at L1 within three years of joining up, and at L2 by the time they have served eight years in the RN. This is in line with the previous Government's policy[141], although senior officers spoken to reported that these levels of skill represent the minimum required for the modern seaman.

For new recruits this process is largely achieved though the provision of Key Skills or Functional Skills as part of the Apprenticeship programmes. For those who have served in the RN for a longer period this policy objective is achieved by encouraging personnel to take Basic Skills qualifications at one of the Naval Education Centres.

Provision of Basic Skills, as opposed to Key Skills or Functional Skills, falls under the NETS, which also organises the wider educational needs of servicemen and women. There are nine Basic Skills Tutors (BSTs) who have a specific responsibility for Basic Skills and Specific Learning Difficulties (SpLDs), and they work closely with the external ICT facilities[142] which operate in most of the Learning Centres. These are the main organisations which work with ratings and marines to help them achieve L2 Basic Skills qualifications outside of Phase 1 and Phase 2 training.

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[141] See discussion in Chapter 2
[142] The joint RN and Army Torch hub group accesses externally-provided ICT learning programmes.

Main Findings

The current priority for the RN is to offer opportunities to gain LANTERN qualifications to those who hold only NAMET qualifications.

Provision of literacy and numeracy, whether Key Skills or the Literacy and Numeracy Certificates, is very effective. Few fail and most achieve their qualifications very quickly. The sample group were full of praise for the ways in which Key Skills were delivered at both MWS and HMS Raleigh.

The pass rates and the short time taken for achievement should be explored further: on the one hand, qualification gain is not always a reliable indicator of sustainable learning progress; on the other, the ethos of the RN may be particularly conducive to promoting learning gains over a short and intensive period.

Being on board ship presents significant opportunities for ratings to undertake education, but the system of quality assurance should be reviewed. New ways of supporting literacy and numeracy learners on board are currently being trialled.

Line managers are not in general interested in accessing the education records of ratings under their management. Many were also unclear that they could obtain permission to view education records.

LANTERN & NAMET

The RN Basic Skills policy established the LANTERN framework for all recruits who joined after 2006, replacing the previous NAMET. The main effect has been the phasing out of NAMET courses and scoring, and its replacement with the Certificates in Adult Literacy and Numeracy. LANTERN qualifications are recognised in the civilian sector and considered more rigorous than the previous NAMET qualifications. Within the Service qualification, thresholds for promotion, which used to require specific NAMET scores, have been replaced with the more generally accepted education terminology of literacy and numeracy levels.

Although there has been no NAMET tuition or testing for some years, it is only in 2012 that the NAMET qualifications will cease to be recognised within the RN. Currently NETS officers are targeting around 2000 personnel who only have NAMET qualifications to support and encourage them to gain LANTERN qualifications. However, it is recognised that not all those sailors contacted will be willing to undertake further literacy and numeracy study and a small number may leave the Service with only NAMET qualifications to their name.

Key Skills, Functional Skills and Proxy Qualifications

All RN and RM trainees undertake an apprenticeship programme. For those involved in this study that apprenticeship is at L2 and includes a requirement to achieve Key Skills or Functional Skills at L1, or to provide evidence that they already hold proxy qualifications,

most usually a GCSE[143]. Key Skills are currently being phased out and replaced with Functional Skills.

All of the trainees interviewed undertook Key Skills at either MWS or HMS Raleigh. **None failed the level needed to gain their apprenticeship and several went on to achieve L2**, which is beyond the minimum level required. All paid tribute to the flexibility of Key Skills staff, both in allowing those who made rapid progress to finish and complete ahead of time, and for the patience and perseverance shown towards those who struggled.

At that time both the Phase 2 centres aimed to get as many trainees as possible through L2 Key Skills as well as the mandatory L1. L2 Key Skills are fully funded, and for the 90% of trainees who gain L2 Key Skills, no further literacy or numeracy qualifications will be required until they look for promotion to Warrant Officer[144]. However, with the introduction of Functional Skills, this will change, in the short term at least. The extra time required to deliver Functional Skills, the lower frequency of assessment windows and longer marking periods combine to make it inappropriate to attempt to get trainees through both levels in a fortnight. The view from most centres is that they cannot put at risk their first priority – trainees gaining their apprenticeships – by concentrating on trainees gaining L2 literacy and numeracy Functional Skills. Accordingly, the number of trainees at HMS Raleigh and MWS achieving L2 literacy and numeracy qualifications before completion of Phase 2 training is likely to fall. This will mean that, in the short term at least, more literacy and numeracy provision will be required for the first cohorts of trainees after Functional Skills replaces Key Skills entirely.

The provision of literacy and numeracy which was previously split between different sections of the RN has now been unified under one Commander. This should simplify and clarify the process of introducing Functional Skills.

Phase 2 Provision

The sample group all took Key Skills as part of their apprenticeships in Phase 2 either at MWS, HMS Raleigh or CTCRM. At MWS and HMS Raleigh trainees undertake a two week block of 'hard' Key Skills[145] at the very start of their training[146]. The Key Skills staff at both centres feel that this 'front loading' of Key Skills is the best way to structure classes, as they can brush up these enabling skills of trainees ready for the more formal classroom-based military training they are going to receive in Phase 2. It also gives staff an opportunity to identify those with significant weaknesses at an early stage, so giving them more time to work on their literacy and numeracy skills during Phase 2 training.

At the start of their 'KS fortnight', all trainees do an initial and diagnostic assessment and the results allow for provision to be personalised, allowing some trainees to fast track

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[143] Recruits to more technical trades may subsequently undertake a Level 3 apprenticeship which includes Level 2 Functional Skills or Key Skills.
[144] To be promoted to Warrant Officer, a candidate needs to have achieved two GCSE A*-C grades, one of which must be English.
[145] Application of Number (AoN), ICT and Communication Skills (CS).
[146] The flexibility of this provision is reflected in that this block might be ten very full days for learners with a lot of catching up to do but may be just a few days for those needing just a brush up.

through to the L2 programme, while identifying others who will need more tuition to achieve the L1 requirement.

Staff at HMS Collingwood explained that assessment for the Key Skills qualification comprises a portfolio and the national adult literacy and numeracy online tests. Tuition is given for the portfolio for which trainees complete an integrated assignment contextualised to their specialisation. Once the portfolio is assessed as meeting the required literacy/numeracy/ICT standards, they complete the online test. Tuition is given by qualified teachers, most of whom also have qualifications as assessors and verifiers.

At CTCRM, Key Skills tuition takes place at Week 9 of training and Key Skills must be completed by week 22. Anyone who has severe problems is referred to the BST for extra help. The BST works one-to-one with those who have problems using a blend of face-to-face, paper based activities and ICT-based resources.

At all three centres, the pass rate is around 100%.

The ABs interviewed were very positive about Key Skills provision, particularly at MWS. Several singled out tutors and teachers and praised their flexible attitude. This came both from those of good ability, allowed to take 'brush-up' programmes and to take their tests quickly, and those who were not confident of their abilities and needed one-to-one tuition. Despite several of the interviewees having had very poor experiences of (particularly) maths education at school, none reported suffering similar problems with their Key Skills.

Specific Learning Difficulties (SpLDs)

Every trainee is 'risk assessed' for SpLD in Phase 1 training at HMS Raleigh. Sometimes a SpLD is identified through the Key Skills initial and diagnostic assessment during Phase 2 training, and occasional instances of SpLD are detected when personnel access the Learning Centres. These instances are fed back to the Education Centres so trainees can be formally tested by the BSTs, who are trained to identify and administer SpLD diagnostic tests.

The Key Skills staff reported that every cohort of approximately 60 included a small number of trainees, perhaps two or three, with SpLDs. Once identified, SpLD learners are assessed and a record of their SpLD stays with them throughout their service and is shared with line managers. They are then given appropriate extra help and support during training[147]. All educational staff interviewed felt that military staff were now well aware of the problems of SpLDs, far more than they had been a few years ago. Some NETS staff thought that it was a mistake to go looking for SpLDs, and that the screening process artificially boosted the number of trainees thought to fall into this category.

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[147] For the relationship between basic skills and the most frequent SpLD, Dyslexia, see Rose, J. (2009) *Identifying and Teaching Children and Young People with Dyslexia and Literacy Difficulties*. London: Department for Children, Schools and Families. Available online at: https://www.education.gov.uk/publications/eOrderingDownload/00659-2009DOM-EN.pdf

Most of the education staff interviewed believed that having a SpLD did not prevent trainees from fulfilling most roles although there were felt to be a small number of jobs which would not be suitable.

The RM staff and trainees interviewed take the view that it is the training that makes a marine; 'if a SpLD prevents you from completing training, it is a problem, but if it doesn't then it isn't'[148]. BSTs working with the marines look for coping methods that will allow them to pass out of training successfully.

The Learning Centres

The RN and the Army use the software and facilities of an external funding provider to support literacy and numeracy provision in their e-learning centres. These facilities are available at the RN Learning Centres in Portsmouth, Devonport, Collingwood, Sultan, Raleigh, Lympstone, Faslane, Rosyth, Yeovilton and Culdrose. Together with the Army centres, these RN e-learning centres form the e-learning network referred to as the TORCH hub.

The majority of learners attending the Learning Centres need to gain a L2 qualification for promotion to PO or Sergeant, or are nearing the end of their careers. The former group comprises newer recruits who have only attained L1 literacy or numeracy qualification as well as longer term ratings who only hold NAMET qualifications. Similarly, those approaching resettlement have a mixture of lower qualifications in NAMET or none at all. Learners in both groups tend to be highly self-motivated, and the **centres report that almost everyone gains their intended qualification**, albeit not necessarily at the first attempt[149].

There is a question whether the Adult Basic Skills provision always takes all learners rigorously through the whole of the Adult literacy and numeracy core curricula. However, the approach **is designed to obtain successful results for learners** taking the adult literacy and numeracy tests; as previously noted, this is in line with the Armed Forces Literacy and Numeracy Policy which explicitly states that qualifications (rather than coverage of the curriculum or explicitly raised skill levels) are the main aim of the policy. It should also be noted that, whilst all of the tutors spoken to had a variety of teaching qualifications, very few had either a PGCE or DTTLS. There is therefore a question as to whether all those teaching literacy and numeracy in the RN (or Army) are strictly fully qualified to do so.

Learners with specific needs who are not going to benefit from undertaking an entire certificate course may be referred to the Basic Skills Tutor (BST). Each Learning Centre is run by a BST, a specialist in literacy and numeracy teaching who is able to produce personalised resources and courses of study for individual learners. **There appears to be no consistent response or relevant expertise generally available to assist ESOL learners**. The few examples we heard evidence of were treated on an individual basis.

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[148] The first Royal Marine trainee from the study to successfully pass out has a SpLD.
[149] Learning Centre staff interviewed throughout the study can give the names of the small number of learners who have not achieved their desired level.

Those learners who have, or are suspected of having, a SpLD or who need a programme that is more intense or personalised than those available from the external ICT provider, are referred to the regional BSTs. These are education professionals who are trained in giving SpLD screening, and who use a wide range of resources and teaching materials on a personalised basis[150].

Learners often achieve their Certificates in Adult Literacy and Numeracy in a very short time – four or five days is not uncommon, even for L2[151]. Thus the question arises: **how can someone who has habitually failed at maths or English not only achieve these qualifications, but do so in so short a time?** It was not always apparent to the learners themselves how they were able to succeed: they suggested that it was a product of **improved motivation, having a different attitude to learning, or having more respect for the tutors than they did for their school teachers.**

Some military staff suggest that the Service ethos is an important factor. All **trainees know that the training requirement is considerable; they are expected to train and study over extended periods, often intensively, and there is an expectation of success**. Literacy and numeracy provision is delivered in similar circumstances, and learners are expecting this approach and will become used to it.

Whatever the explanation, learners achieve their qualifications quickly and in high numbers. For some education staff this late flowering of educational achievement is a major motivating factor in itself:

> *...often at school it isn't the right time – particularly for boys, going through puberty – they don't want to learn at that time. And it doesn't mean they're not bright as a button, but it's just not the right time for one reason or another. So often when they come back in their 20s and 30s, that's the time. And we have people going out with retirement in their 40s who haven't had an education, we give them that education, and it's wonderful to see that. That's how it should be. So from that point of view, there's a lot of satisfaction.*

Provision of education on board

Education on board ship falls under the aegis of the Education and Resettlement Officer (ERO), while all mandated training is the responsibility of the Training Officer. The ERO is usually a junior seaman or warfare officer, will not be an educational specialist and education will be the least of a number of responsibilities.

It is the ERO's responsibility to be aware of the education qualifications of the ship's company. The ERO should know how many of the team hold qualifications at each level, and who requires further qualifications. The ERO should also encourage ratings to take up

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[150] For more on the support of SpLDs in the RN, see section 6.4.
[151] This evidence is detailed in the Stage 2 report.

opportunities for education and provide information and advice on education matters. The ERO may also organise education classes on board, usually for GCSE or 'A' levels.

Joint Services regulations allow anyone to teach a subject (apart from literacy and numeracy) on condition that he or she has a qualification at least one level higher than the qualification to be taught. For example, an officer with 'A' level maths might volunteer to run a GCSE maths class (though not a numeracy class); in return they receive a financial teaching allowance.

Most of the sample group reported that GCSE English and maths were offered on board their ships, and one enrolled for an English GCSE class. He had all his tuition on board and took his exam while still at sea. His positive experience illustrates the advantages of the scheme. A young rating can use the excess of 'free' time on board (time which it is hard to fill with much else) in order to study for and obtain a useful qualification. At the same time, there is evidence of insufficient quality control. A recent review into GCSE provision, both on board and alongside, found that **on board provision compares poorly with shore-based provision**. The success rate of those taking public exams on board is markedly lower, and the cost per head is at least twice what it would be either ashore or via a distance learning course.

The RN accepts that the teaching of adult literacy and numeracy is a specialist area, and in general those working on their literacy and numeracy skills on board will be doing so under their own initiative or with remote guidance from a NETS officer. Each ship is visited periodically by a small number of NETS officers. The aim is to visit each ship at least once every eighteen months, and ideally more often. Before sailing, the NETS team will obtain a list of the crew and their education qualifications from Joint Personnel Administration (JPA) and judge which individuals have priority literacy and numeracy needs, that is, those who need a further qualification before they become eligible for promotion to the next rank, or who still hold only NAMET qualifications.

The NETS team will then talk to crew members, ensure their JPA records are correct and up to date[152] and conduct Initial and/or diagnostic assessments[153] on those who wish to proceed with Basic Skills qualifications.

Teaching is not the primary aim for NETS officers when on board. The priority is to ensure that the cohort is assessed, but if crewmembers clearly appear to be at L2 and they only need to 'brush up' their skills, then the NETS officers will aim to have these crewmen take an exam[154] during the visit. They also leave workbooks with individuals who are aware of what they need to work on before getting ashore and taking the exam – most usually at a Waterfront Learning Centre. The success rate for this approach is close to 100%.

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[152] NETS staff suggest that on average JPA records are accurate in 85% of cases.
[153] NETS officers take their own laptops on board and conduct BKSB assessments.
[154] NETS officers will have appropriate paper-based Basic Skills exams with them which they are accredited to deliver on board.

The RN is currently conducting a trial[155] **on the use of volunteer Mentors to support those who are working towards a Basic Skills qualification on board**. A decision has yet to be made on whether this trial has been a success and whether the scheme should be extended to include a larger number of ships.

Funding literacy and numeracy education

There are a number of ways in which the provision of literacy and numeracy is funded. Since the LANTERN policy was adopted, the Government[156] has fully funded all literacy and numeracy qualifications for those not holding qualifications at L2 or higher, as part of its Skills for Life strategy, formerly through the LSC and now through the Skills Funding Agency. The vast **majority of the RN's Basic Skills qualifications are delivered by the Torch Hub e-learning centres and they draw down Agency funding**. This is the case even in the scenario outlined above, where additional training is provided by NETS staff on a course on board ship.

Functional Skills or Key Skills delivered as part of the Apprenticeship programme are funded directly by the Agency to the RN. This includes funding achievement at levels higher than those required by the framework.

Record keeping

The education records of all RN and RM personnel are held on JPA. The RN employs a civil servant as the single administrator and sole point of contact. This system, they feel, provides a high level of accuracy and consistency in the way in which information is recorded, and ensures that the records can be accessed as personnel move around the RN. Basic Skills, Key Skills and Functional Skills qualifications are captured on a specific field in the Competence area of JPA.

In general the information held on JPA was seen as reasonably accurate. When going on board NETS officers examine the education records of all personnel and although they uncover mistakes, they did not consider that accuracy was a significant issue.

Line managers interviewed had a range of responses to questions about their awareness of the education records of staff they were managing. Many at Leading Hand level claimed to not have the authority to access the records, having to go through a third party, usually the DO. None had actually done so, and so were unaware of the qualifications of the staff under their command. Some POs however, did have access to the relevant JPA information. **In general there was no great interest from line managers in accessing the educational qualifications of their staff**, and only one spoke enthusiastically of going through the records of all new staff to identify any gaps in their qualifications.

While access to the competencies area of JPA is restricted, line managers can gain permission by simply asking for it. It would appear that **not all line managers are aware of this requirement and assume they are simply unable to gain sufficient clearance.**

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[155] On HMS Manchester.
[156] Both the current coalition and the previous Labour administrations.

6.4 Support for SpLDs in the Royal Navy

Introduction

This section examines the experiences of personnel diagnosed as having a SpLD, and considers how this relates to policy and policy development.

Main Findings

The trainees from the sample felt that having a SpLD did not have a detrimental effect on their current job roles, but those with severe difficulties were concerned about how this might have an impact on their continuing career in the RN after a first promotion.

The RN is considering a policy which, rather than focusing only on identifying individuals with difficulties, would place emphasis on providing support for all trainees, using methods designed to assist those with a SpLD. The RN also plans to focus funds for providing career-long support rather than focussing exclusively on Phases 1 and 2.

The impact of SpLD on the sample group

Four of the Stage 3 sample have been diagnosed with an SpLD (see Table 6.5). Trainee 21 was diagnosed at primary school as severely dyslexic and entered the Service with a statement. The others (two with dyslexia one with Meares-Irlen syndrome[157]) were all diagnosed at HMS Raleigh. Trainee 32 makes use of a coloured overlay[158] which 'helps' but which is rarely used. The others have been provided with letters which allow them extra time when taking their examinations. None reported ever using the letter, though one did say he would 'keep it in my back pocket in case it ever becomes useful'. Only one of the trainees had informed their line manager of their SpLD, none had mentioned it to their peers and none reported that it held them back in their duties or compromised their operational effectiveness in any way.

One was clear on his reasons for not seeking help with his dyslexia, despite having a 'scribe' when at school. He felt this had made him too dependent on other people, while as a marine he needed to be entirely self-sufficient. As he put it: 'you can't have a scribe with you fighting in Afghanistan'. When at CTCRM he struggled to complete his Administration folder, but used a number of deceptions to ensure it was completed to his trainer's satisfaction. He was, however, reluctant to consider promotion as he felt his 'appalling spelling' would probably be an issue.

Trainee 9 was also concerned about how his dyslexia might affect his promotion and was aiming to gain English and maths GCSEs as soon as possible, in order that he would have 'ticked all the boxes'. **His line manager spoke of his worry that the trainee, whom he**

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[157] Also known as Scotopic Sensitivity Syndrome, Meares-Irlen Syndrome is a form of visual stress which leads to difficulties with fine vision tasks such as reading.
[158] The use of coloured overlays has been found to improve the reading of many individuals with both Dyslexia and Meares-Irlen Syndrome.

described as exceptionally able, might find his career held back if he was known to have a SpLD.

From this small sample it would appear that the **trainees do not feel that their SpLDs have a negative effect on their current roles**. However, those with more serious difficulties are concerned about how these may affect their current and future promotion opportunities. This view was shared by the military staff who reported that the impact of any SpLD would not become evident until promotion to PO or sergeant.

> *One thing that I wasn't aware of up until recently was the learning difficulties, dyslexia, and to be honest – because he doesn't have to write down lots of information, he doesn't have to write reports at his level, then it's something that I don't notice to be a problem. He is above the kerb and beyond his peers at his knowledge and his ability to work on the computer system and do his job. But if he were to go down the AWT route, or any route at the Leading Hand level and definitely at the senior rate level, you've got reports to write, etc. and I don't know if that would hamper him.*

SpLD diagnosis at Phase 1 Centres

There are two Phase 1 centres within the service, HMS Raleigh for the RN recruits and CTCRM for the Royal Marines. During the course of research they operated different approaches to diagnosing and managing SpLDs. However, the currently emerging RN SpLD policy will ensure that a common approach is taken in the future.

At HMS Raleigh, on the first Sunday evening, all new recruits are given a 20 question questionnaire and are asked to compose a piece of free writing. On the basis of these responses the BSTs interview those who may potentially have a SpLD later that week. These interviews may be quite short or extended depending on the nature of the concern. Interviewees are tested with colours and asked about any physical conditions suggestive of dyspraxia. Some of those interviewed will then be tested for Meares-Irlen, while others will do a DAST or Dyscalculia screening. On average 10% of any given cohort require some level of support for SpLD[159].

Interestingly, the diagnosis of Trainee 9 was recalled by another of the sample in these terms, back at the start of the study:

> *...there was this one lad, they didn't realise he was dyslexic at school and that, but as soon as he came they found out he was dyslexic, he was like, 'Oh, that's why they all thought I was thick at school!'*

At CTCRM there is no systematic attempt to search out those with difficulties, and staff are content to tackle issues as they arise in the course of training. Rather than focus on

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[159] The British dyslexia association estimates that 10% of the population have some degree of dyslexia. Four percent are severely affected. See British Dyslexia Association (1995) *The Dyslexia Handbook.*

diagnosing SpLDs, the ethic at CTCRM is concerned with looking at whether and how trainees cope with both the RM training and life as a marine.

Staff at **CTCRM have developed a series of 'study skills' sessions designed specifically to help those with a range of SpLDs, but which are applicable to all trainees**. These range from organisational processes through to the use of mind-mapping, as an alternative way of collating information and ideas. By concentrating on what techniques and strategies might assist those with difficulties, they are also giving valuable advice and support to those who would not fall into the SpLD range.

SpLDs and lost potential

Although the Armed Forces SpLD policy states that having SpLD needs should be no barrier to recruitment, it is also clear that some SpLDs will have an effect on the career of a Serviceman or woman. Those suffering from dyspraxia, for instance, are unlikely to pass weapon handling and may have problems with basic military techniques such as marching. Where a SpLD may have a negative impact on a specific career, a branch transfer may well be a suitable alternative.

There was a view at HMS Raleigh that some personnel may not realise their full potential if their SpLD is not diagnosed. For instance, some LHs who fail to progress further may be found to be suffering from a SpLD which has prevented them working more effectively in their role or from obtaining the qualifications necessary for further promotion. Other personnel are diagnosed with a SpLD when preparing for resettlement. It is quite possible that such staff have been underperforming for many years, and may have led more productive careers had support been available at an earlier stage.

A new approach

Research undertaken by headquarters' staff suggests that there are inconsistencies in the way naval establishments implement the tri-service SpLD policy, with the potential consequence of 'over' identification. The current policy, which limits funding of diagnosis and support to Phase 1 and Phase 2, also fails to support staff who are identified as having a SpLD during Phase 3 training, when they are called upon to operate at higher levels.

Staff at Headquarters report that there is **an opportunity to move from a 'diagnostic' to a 'preventative' paradigm**. Utilising the work at CTCRM, a series of four 'Learning/studying skills' workshops given to all recruits in Phase 1 will provide important and useful techniques which, although designed specifically for those with SpLDs, will also provide help to other personnel. Feedback from both groups of learners has been highly positive. The coaching service which has been trialled in Phase 1 centres is to be rolled out across Phase 2 centres as well.

Rather than withdrawing a specific cohort for specialised treatment, this approach is designed to help all recruits in coping with the demands of their training. The emphasis is on coping strategies for all rather than the diagnosis of a few. It is also an approach that will operate throughout the career of Service men and women, rather than being restricted to the first two phases.

Currently the diagnosis of scotopic sensitivity is a costly and inexact process. The RN has started a trial using a nationwide chain of opticians to diagnose potential scotopic sensitivity sufferers, which it is hoped will be both less expensive and more effective. If the trial is successful, this approach will be rolled out across the whole of the RN.

The RN SpLD policy is currently at a draft stage and the RN aim to have it agreed later this year.

SpLD Support and Funding

The Armed forces SpLD policy states that 'public funding for the provision of SpLD support may be provided for the provision of a specialist assessment only when the individual is in Phase 1 & Phase 2 training'. However, 'Additional support for SpLD needs may be provided, depending on operational conditions and budgetary limitations'. In practice this means that SpLD funding is primarily aimed at the Phase 1 and Phase 2 training centres and at recruits in their first months with the RN.

Senior staff are aware that there is another cohort of personnel whose SpLD needs become visible only when they are involved in training for higher promotions, particularly PO. These experienced staff, many of whom would benefit from extra support at a more advanced stage of their careers, tend to miss out on diagnosis and support, since funding is focused on Phase 1 and Phase 2 trainees. **By concentrating more on support strategies for all, and less on diagnosing entrants, the new RN policy (in its current draft form) seeks to redistribute SpLD funding more equitably between sailors across all career stages.**

6.5 Uses of literacy and numeracy skills required in branches

Introduction

This section presents evidence on the use of individual's literacy and numeracy skills in the current job roles of the RN sample group, and also how the ratings themselves, and their line managers, evaluate their literacy and numeracy skills.

Possessing high level literacy and numeracy skills underpins many aspects of professional life. This section maps out the literacy and numeracy skills which directly assist Servicemen and women in their day to day jobs. If a rating does **not** have good literacy and numeracy, what are they unable to do? What functions would they be unable to perform? How would it negatively impact on the RN command? By charting the activities trainees perform in their everyday jobs, it is possible to record the broad impact of literacy and numeracy skills in each of the branches and specialisations covered by the sample group. This brings the impact of good literacy and numeracy on operational effectiveness clearly into focus.

Main Findings

All branches and specialisations required competence in a number of literacy and numeracy skills in their day-to-day work. Every job role depended on good speaking and listening skills, most required competence in reading and writing, and some required ICT and maths skills. As the sample group progresses in their career, they will inevitably require higher levels of literacy and numeracy skills in order to carry out their jobs.

The trainees themselves accepted the need for good literacy and numeracy skills, and were positive about gaining further literacy, numeracy and ICT qualifications.

While all interviewees felt that they could improve their literacy and numeracy skills through using them in their job roles, line managers were largely of the opinion that literacy and numeracy education was necessary to provide the underpinning skills for all ratings.

Specific literacy and numeracy skills used in RN job roles

Although this study has examined the lives of ratings involved in only a small number of branches and specialisations, there is considerable variation in the skills required to operate effectively in different roles. It should be remembered that the job roles examined in this study are those open to ABs with the lowest educational profiles on entry, so it would be expected that other branches not covered here would place a greater reliance on literacy and numeracy skills in job requirements.

For the purposes of this study we asked participants to consider how the following skills were used in their professional job roles: speaking, listening, reading, writing, maths and ICT. These questions were also asked of all military staff interviewed, and the results were collated by branch.

Table 6.9 provides a summary of the skills researchers inferred from interviews which are vital, important or less important. Table 6.10, Appendix A presents the full data from which these inferences were made, and provides a detailed description of the applications of these skills to the specific trades covered by the sample group. **This evidence could be extended through further consultation with military trainers to form the basis for a set of trade-specific, literacy and numeracy skills.**

Table 6.9: Importance of specific literacy and numeracy skills to individual branches/specialisations						
Branch/ specialisation	Speaking	Listening	Reading	Writing	Maths	ICT
Warfare	Essential	Essential	Essential	Essential	Important	Important
Seaman specialist	Essential	Essential	Important	Important	Not very important	Important
CIS	Essential	Essential	Important	Not very important	Not very important	Essential
Chef	Essential	Essential	Essential	Essential	Essential	Important
Writer	Essential	Essential	Essential	Essential	Essential	Essential
Royal Marine	Essential	Essential	Important	Essential	Essential	Not very important

Similar questions asked of the trainees at the start of this study found almost no-one who felt literacy and numeracy skills would have any impact on their jobs. Experience has taught them differently. These results make it clear that speaking, listening and reading are important skills for every RN job role included in the sample group. Most of the job roles also required good levels of writing and ICT skills, but only half of the branches or specialisations investigated required good competencies in maths or numeracy.

These findings, of course, are derived from a small sample of individuals at the first stages of their career. Once RMs specialise in communications, for instance, they will require competence in ICT, and a CIS specialist on promotion to LH will need to be competent at writing, almost from the beginning.

Nonetheless, even at this first step in their career, it is clear that **for each branch or specialisation a number of literacy and numeracy skills are essential for operational effectiveness**. Good digital skills are also a necessary requirement for several job roles.

Ratings' own and line managers' assessments of literacy and numeracy skills

All trainees were asked about their own assessment of their literacy and numeracy skills, how much they used literacy and numeracy in their personal lives, whether they felt their literacy and numeracy skills had improved since joining the RN, whether they thought good literacy and numeracy skills were useful for their career and whether they were interested in gaining further skills or qualifications.

Their responses, summarised in Table 6.11, Appendix A, show that most of the sample group had thought carefully about their skills and whether they were sufficient for their intended career path. A number were aware of deficiencies – speaking and listening, numeracy, spelling and handwriting were all mentioned – but all felt they were able to cope with these problems. **Seven were positive about gaining further qualifications and only one clearly stated a lack of interest in doing so**.

Most striking were the responses to questions about how their literacy and numeracy skills had improved since joining the RN. **Ten respondents felt that at least some of their skills had improved.** They put this down to having to use and practise those skills more often than in the past. The need to make presentations was seen to have a particularly significant impact on the confidence and speaking levels of several participants. Clearly, there is a widespread view that literacy and numeracy skills are used as a normal part of daily life in the RN and that this in turn leads to improvements in literacy and numeracy levels.

Line managers were unable to discuss in depth specific strengths or weaknesses in trainees' literacy and numeracy skills levels. Unless a specific weakness became apparent, it was assumed that trainees were sufficiently competent. **The area most often commented on as in need of further improvement was speaking**, with some individuals identified as lacking confidence when talking to groups or senior officers. Managers agreed that reading and writing would become more important with promotion, but in most cases were not concerned at trainees' current levels of skill.

Line managers agreed that trainees were able to improve their literacy and numeracy skills 'on the job' simply by working in the RN. Nonetheless they generally endorsed the **need for undertaking education to provide the underpinning skills and knowledge**, a necessary prerequisite to applying the skills in their RN job roles.

6.6 Operational Effectiveness

Introduction

One objective for this study is to explore the links between the skills of speaking, listening, reading, writing, numeracy and ICT on the one hand, and the operational effectiveness of Service personnel on the other. This section describes the contribution to operational effectiveness made by various literacy and numeracy skills for specific branches and specialisations. It will also look at the evidence on whether SpLDs have an effect on rating's operational effectiveness.

Main Findings

RN personnel reported that teamwork, perseverance and being able to understand orders and instructions were the most important contributory factors for operational effectiveness in the trainees' branches and specialisations.

In respect of literacy and numeracy skills, speaking and listening were found to contribute to operational effectiveness in every RN trade; reading, writing and ICT to contribute to operational effectiveness in most trades and maths to about half of the trades. Chefs and Writers required all six literacy and numeracy skills in order to be operationally effective.

Respondents reported that the same factors contributed to operational effectiveness, whether they were alongside or at sea, on or off deployment.

Having a SpLD was not considered by the trainees or their line managers to have a bearing on any Serviceman or woman's current operational effectiveness.

Evidence from the initial stages of the study

In Stage 2 of the study, all interviewees were asked about the skills or attitudes needed to become 'operationally effective' in their role. Senior officers recognised that naval personnel generally work as part of a team and need high level communications skills; these will increasingly be 'virtual as well as verbal', and require good language and ICT skills, while the increasing dependence on high technology will continue to demand higher levels of numeracy. **The chain of command is clear that literacy, numeracy and ICT are core skills which enable operational effectiveness in the front line.**

The responses of the lower ranks could be summarised as focussing on training, experience, teamwork, communication and commitment.

RM, trainees, NCOs and Officers reported that the skills developed through training make a marine operationally effective. If marines have not completed the training, they will not be operationally effective, hence any skill required for operational effectiveness will be included in the training. As a result, every aspect of RM training is viewed as equally important for operational effectiveness, and competence in literacy and numeracy is seen as no more or less important than physical fitness.

The skills, attitudes and behaviours which contribute to operational effectiveness

For each branch, specialisation or job role, a combination of factors account for whether an individual has become 'operationally effective'. Those factors vary in content and relative importance according to each specific role.

Every trainee and NCO was asked about the factors that contribute to operational effectiveness. A check-list of attributes was prepared, including attributes such as being: mentally tough, determined to succeed, experienced in your trade, and determined to succeed. Some attributes were included which related directly to the basic skills of speaking, listening, reading, writing, maths and ICT, such as being confident at talking to all ranks or being competent at reading. Participants were asked which of these attributes they considered important for them to be considered operationally effective in their trade at their level. In this way it was possible to see how trainees and their line managers identified the nature and extent to which literacy and numeracy were seen as major components of being operationally effective. This same list was used for all ranks in all three Services allowing for comparison[160].

The full results for the RN, divided between trainees and NCOs/officers, show general agreement as to which factors are seen as most important. Nearly all those interviewed, regardless of trade, saw being determined to succeed, being flexible and able to think quickly, being committed to your team being a good listener, being able to understand orders and instructions as being vital for operational effectiveness. NCOs identified persistence and resilience, and ICT and maths skills as more important than the junior ratings, who in turn identified 'talking in front of groups' and 'being a good listener as more important'. Tables 6.12 and 6.13, Appendix A, provide the full results of this survey.

The only response which may seem surprising was the low importance given to trade training. One reason for this may be the number of interviews conducted with Warfare specialists on type 45 destroyers; these are new in service and much of the equipment is not yet available at the Phase 2 training centres. Both ratings and their line managers agree that in such cases a great deal of training takes place after the rating is on board. With the rapid pace of technological innovation, those working in more technical trades will find themselves re-training on a regular basis.

Overall, the findings from all stages of this study are reinforced: teamwork, experience, commitment and a positive attitude were highly valued, while reading, writing and ICT skills were not seen as of having the same level of importance. However, **speaking and listening skills were rated very highly by interviewees.**

Looking more closely at the contribution made by literacy and numeracy to operational effectiveness, and examining each branch or specialisation, it is clear that responses vary according to trade.

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[160] See Chapters 5 and 7.

Reading, writing and ICT skills are viewed by trainees and their line managers as the most important factors for CIS, Chefs and Writers while maths and mental arithmetic is seen a major component of operational effectiveness for marines, chefs and writers. On the other hand, talking in front of groups is not a major consideration for Chefs and Writers, who are also less concerned with having to pass on orders or instructions.

Some differences are quite extreme; while every CIS, Chef and Writer reported that competence with computers was vital, not a single marine agreed. And whilst 75% of marines regarded mental arithmetic as important, no Seaman specialists agreed. On the other hand, all branches consider confidence in talking to all ranks, being a good listener and understanding orders and instructions as very important for their roles.

Overall these responses suggest that literacy and numeracy skills as a whole are most important for CIS, Chefs and Writers, speaking and listening are most important for the Seaman branch, and communication and maths are most important for marines. Reading, writing and maths are deemed less important for Warfare specialists in their work.

These responses are summarised visually in Table 6.14.

Table 6.14: Most important literacy and numeracy factors contributing to operational effectiveness						
	Speaking	**Listening**	**Reading**	**Writing**	**Maths**	**ICT**
Warfare	Essential	Essential	Important	Important	Important	Essential
Seaman	Essential	Essential	Not very important	Not very important	Not very important	Not very important
CIS	Essential	Essential	Essential	Essential	Important	Essential
Chefs & Writers	Essential	Essential	Essential	Essential	Essential	Essential
Marines	Essential	Essential	Important	Important	Essential	Important

Speaking and listening skills are clearly viewed by all interviewees as making an important contribution to operational effectiveness. All branches viewed either reading, writing, maths or ICT as making a significant contribution to operational effectiveness, and ICT, reading, writing and maths were seen as being significant for half of the branches represented in the sample. These results suggest that at least some of these literacy and numeracy skills are recognised by every specialisation as being an important factor making them operationally effective at their level.

These responses are drawn from personnel at the AB level (or basic marine) only. Almost all interviewees agreed that literacy and numeracy skills became more important after promotion, even at the first level (Leading Hand or Corporal). The need to read and write reports was mentioned as the main reason why those literacy skills would become more important as an individual rises through the ranks.

Impact of SpLD on operational effectiveness

Although dedicated to diagnosing and supporting recruits for SpLD, staff are also aware that in some cases a SpLD will inevitably have a negative impact on their operational effectiveness. There are certain job roles which will always be incompatible with certain severe SpLDs.

However, **none of the trainees interviewed for this project felt that their SpLDs had a negative effect on their current operational effectiveness**. Similarly, none of their line managers thought their SpLD had an impact on their operational effectiveness. Nonetheless, **some had worries about how their SpLD would affect them as they went forward with their naval careers**. Trainee 9 is clearly not hampered by his learning difficulty at present, but has concerns as to his ability to keep on top of the increased report writing as he went through the ranks. As a rating he has high ability and aptitude, but it will become a challenge to ensure support is maintained to allow him to fulfil his full potential.

One trainee had a specific concern over how his bad writing could impact on his operational effectiveness once he is on active service. He has shown dedication to his training, and made a sustained effort to find his own coping mechanisms for use in operational conditions. At the same time he has extensive anxieties over his own operational effectiveness when *in extremis.* However, he remains convinced that he alone has the answers, and that no-one else can help him overcome his difficulties.

6.7 Career progression

Introduction

This section looks at career progression, including the role of appraisals, and the part played by literacy and numeracy and SpLDs in trainees' career development.

Although the sample group are at an early stage in their careers, there are already some indications of who is likely to progress further, or at least more quickly, than others. In this section we consider what impact their literacy and numeracy levels may have had on their career so far, and how they might have an impact in the future.

Main Findings

There was almost no evidence that a trainee's level of literacy and numeracy skills or having a SpLD made any significant impact on their career (trainee 21 may be an exception). From this small sample, injury or illness, or the amount of time spent on board ship had the greatest impact on early career progression.

The ratings felt supported by the appraisal structure and reported that the process was positive and helpful.

There was no great variance between ratings' accounts of their career progression and that of their line managers.

Appraisals

The first indication of the progress made by a junior rating is their formal appraisal. All the personnel interviewed had received at least one formal appraisal and all of the line managers interviewed had contributed to this process, although in only a minority of cases were they the first reporting officer, who takes the greatest responsibility in the process.

The appraisal process for ABs is a Single Joint Appraisal Report (S-JAR) and covers standing objectives (trade-related objectives) as well as personal objectives. The reporting officer gains feedback from other Chief Petty Officers (CPOs) and senior ratings on the subject's leadership skills, personal attributes, fitness, communication skills and other essential attributes and creates a list of personal objectives for the rating. The rating may then view the report and objectives on JPA, and will have an opportunity to add his own comments to the record. This then goes on to the second reporting officer, most usually a lieutenant, who will add their own comments. Although education qualifications may well be raised at some stage, they do not form part of the official criteria of the appraisal process.

There is a common reporting date for different ranks, and ABs' reporting date is June. While objectives are usually set a year before, this may vary according to when a rating joins a ship or other deployment. The appraisal may reaffirm the rating's status, or recommend promotion or suggest ways for the subject to further progress.

Most of the trainees who had received appraisals were positive about the process. Several reported that the appraisals had been 'helpful' and allowed them to look forward in a positive way. No-one interviewed reported any negativity towards the process.

Evaluations of trainees' progress

We asked all trainees how they felt their career was progressing, and how long they now thought that they would remain in the Service. Where possible, we attempted to gain an alternative view about the trainees' progress from their line manager or DO. The responses are shown in Table 6.15, Appendix A.

Broadly speaking, **the sample group has made a positive start to their careers**. Of the 14 trainees interviewed, nine thought that they were making good or very good progress, while two were non-committal and three somewhat negative. In general, line managers shared the trainees' self-evaluations.

Only in the case of Trainee 7 was there a significant difference between a self-reported assessment and the line manager's assessment. While Trainee 12 may have been realistic about his poor progress to date, his DO was negative and emphasised that he would need to improve significantly if he wished to stay in the RN. Trainee 10 is a difficult case. He sustained serious injuries in a traffic accident while at home, and had been medically downgraded for some months. He felt the Service did not appreciate what he had been through, and this has left him with a negative view of the RN. His temporary line manager, however, was quite positive and felt that he would probably be able to rebuild his career. The marine trainee, 27, has been voluntarily discharged as a result of injury. He remained positive and determined to return, and his trainers were equally positive about his prospects of completing his training once his body has had an opportunity to recover.

Despite this positive response from the trainees and their line managers, many are still reluctant to commit to spending a full term in the RN. This contrasts with the initial enthusiasm that saw almost the entire group reporting that they wanted to stay for 22 years in the first stage of interviews. The difference is that before passing out of training, the length of a subsequent career is a much more abstract and unknowable concept. The responses now are grounded and realistic; there is an acceptance that however well their career is going, things may change. Getting married or having children were recognised as life changing decisions which may make the ratings less keen to spend most of their life away at sea.

Part played by literacy and numeracy and SpLDs in a rating's career

None of the sample thought that their level of literacy and numeracy affected their ability to do their job, and no line manager thought that the current skills level of any trainee was a barrier to their immediate progression. This was also applied to personnel with SpLDs.

The trainee who entered the RN with perhaps the worst academic record in the sample (no GCSEs) was also singled out for most praise by his line manager, and may be the first of the sample to be promoted.

The experiences of this small group suggest that illness or injury has the greatest impact on the early careers of junior ratings and marines. Many ABs are in branches that require time at sea in order to complete their task book and demonstrate Operational Performance Statement (OPS); those fortunate enough to have an early deployment to a ship progressed more rapidly than those who have spent more time alongside, or who were on ships undergoing maintenance or other shore-based tasks.

It is clear, however, that several of the sample group will find it challenging to achieve further promotions. **There is universal agreement among those interviewed that once personnel reach LH, the requirement for 'paperwork' increases enormously**. Contributing to appraisals as well as reading and writing reports is demanded even at this first promotion level.

Many of the group who have not been diagnosed with a SpLD still consider their own writing or maths skills as poor, and that will become challenging when they seek to consolidate themselves as LHs and look to progress to PO.

6.8 Personal development and the RN

Introduction

Entering the Armed Forces remains a huge step for every new recruit, and perhaps more so for the younger trainees. This study has provided an opportunity to observe the personal as well as the professional development of trainees after they have left school and home, and established themselves in Service life.

This section examines the progress of trainees, their attitudes to life at sea and how they perceive their personal development. It also seeks their views on the importance of education in the life of RN personnel.

Main Findings

Despite being selected for their poor incoming levels of literacy and numeracy, the sample group are progressing well, with several already earmarked for promotion. Almost no one has found their literacy or numeracy skills to be a barrier to their work, or expects literacy and numeracy to be a barrier to gaining promotion (Trainee 21 may represent an exception).

The group were in general very positive about life at sea, which they generally preferred to time alongside.

The RN ethos of continuing education has changed the attitude of many of the sample group towards education. They were very positive about the education they had received and most were keen to gain further qualifications. There was a clear preference for gaining English and maths GCSEs rather than further Adult Certificates.

There remains a question as to how the two trainees with severe SpLDs will be supported as they go through their Service; they will require support and openness on all sides to ensure that they are able to fulfil their potential.

Individual Case Studies

In the final stage of the study we interviewed 11 AB ratings who had also been interviewed during the first stage.[161] A reasonable number of recruits, therefore, remained with the study across the entire period of research.

Despite poor qualifications or IA scores on recruitment, none found their level of literacy or numeracy a barrier to settling into their first job in the Service. All are confident that they can cope with their job role and any subsequent training they may be required to undertake. **Most are positive about the literacy and numeracy courses they have undertaken and do not question the need for good literacy and numeracy skills**. Those that have not taken or achieved L2 qualifications through Key Skills are

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[161] One of the initial trainees was contacted but refused to cooperate.

mostly anxious to do so, though **most see GCSE as the preferred route and qualification.** One of the group has already done so, undertaking an English course while on board HMS Lancaster.

Two of the sample group who appeared to have quite severe dyslexia[162], and they are far more concerned about their ability to move through the ranks. Trainee 9 appears to be one of the most successful trainees, very well thought of by senior ratings, and has been awarded for his performance on board. He is already being put forward for promotion and is clearly a natural AWT specialist. However, he has the worst academic record of the sample, with no GCSEs and a SpLD. It would be interesting to see how he continues to progress once he moves to LH, and **how he can be supported with his dyslexia to achieve his potential**.

He is not alone. Of the initial group, two others were spoken of as being ready for promotion.

In contrast, one AB was on a warning and clearly failing to make the expected grade. His DO was clear that his deficiencies had nothing to do with literacy and numeracy levels and everything to do with his attitude. Trainee 6, a Writer, was a lone dissenting voice in Stage 2. He felt he had been badly treated by the RN, and that his abilities had not been recognised. The two other trainees who did not receive such glowing reports had both been affected by illness or injury. As outlined in section 6.7, Trainee 10 was involved in a very serious traffic accident and has been recuperating for almost a year, while trainee 7 was taken ill when on board and had to be taken off. Both lacked motivation when interviewed, but there is every reason to believe that they will be as successful as their peers once they are recovered and back on board ship.

A total of **11 RM trainees have been interviewed** in Stage 1 and Stage 2 of this study, of which **just two have passed out.** Only one of the successful marines has been interviewed, the other was unexpectedly deployed after an interview date had been agreed. Despite exhilaration at passing out, he takes the view that his SpLD will hamper his chances of promotion.

Life in the RN, at sea and alongside

The vast majority of ratings interviewed were very positive about their experiences in the RN to date. Most have spent a great deal of time at sea, and it is this aspect of their role which was commented on in the most positive terms by nine of the sample. The most frequent responses were that **'at sea you were always busy', 'there was more variety in your work' and that 'time went very quickly'.** Only one negative comment was reported about the lack of personal space. All ratings interviewed were anxious to get back to sea and gain further experience. Those who had yet to gain their star were particularly keen, feeling that they needed sea experience to complete their logbooks.

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[162] One had a scribe to assist his school work, the other self reported severe difficulties which were confirmed by his line manager.

Time alongside was regarded as 'OK', more relaxed, and provided more time for study. Overall, ratings gave the impression that they enjoyed a rest alongside, but their real job was out at sea.

The only marine interviewed who had completed training was delighted to have passed out, and looked forward to his imminent deployment in Afghanistan.

Eight interviewees said they either had recommended or would recommend friends to join the Service.

Personal development

Only two interviewees did not feel that they had changed as a result of their time in the RN, whereas **ten claimed a positive impact**, largely attested to by parents, partners and friends. **Seven interviewees claimed to be more confident and four more mature, and three claimed better self-discipline**. Other changes cited were better motivation, fitness and even 'more intelligent'!

Most were very clear that it was the RN which had caused this change. Moreover, a majority reported that the discipline of training had had the greatest impact, though other features mentioned included spending time with other ranks and having to work closely with others.

Reading the transcripts of interviews conducted at the start of the project illustrates the growth in self-confidence that trainees reported in Stage 3. In the first round of interviews, one AB, who was, by the close of fieldwork, very confident and successful, reported that:

> My real father's always brought me down like and said, you know, 'you're useless at this, a loser and you'll achieve nothing' because I was crap at school... I always thought I was inadequate.

Ten interviewees also said they had met highly influential individuals who could be considered role models. These were largely LHs or POs, members of training teams or from specialised units such as Special Forces. One Chef had another AB as a role model, a chef who in civilian life had worked in a Michelin starred restaurant.

Education and the RN

There was a **clear perception that the RN was extremely supportive towards education,** and several interviewees talked about the support and encouragement to attend on-board education classes. Nine of those interviewed were aware of classes on board, mostly maths and English GCSE, and one took English GCSE and passed whilst at sea. Trainees talked about the fact that there were always education opportunities but that they had to be asked for. **Six trainees expressed interest in further study** of GCSE English and maths, and also vocational training such as the Fork Lift Training qualification; one intended to study Psychology if an opportunity arose.

Research by headquarters' staff suggest that **at any one time there are between 7,000 and 10,000 people in the Navy undergoing some form of formal education**. This

represents between a quarter and a third of the trained strength. While some aspects of provision are mandatory – becoming educationally qualified for promotion for instance – the remainder is entirely voluntary; that is, opportunities are provided through learning credits; learning is encouraged by the chain of command; and personnel have the opportunity to take up education offered at all education centres. This alone is a testament to the ethos of self education and lifelong learning instilled in its staff by the RN.

6.9 Implementation of literacy and numeracy policy

Introduction

The RN Basic Skills policy framework is set out in Chapter 2 of this report. This research has provided the opportunity to examine how the policy works on the ground from the perspective of initial recruits, and in this section we draw some conclusions as to the efficacy of the RN Basic Skills policy.

This study has had the opportunity to investigate whether policy objectives are working at the AB level. In particular, the study found evidence relating to the phasing out of NAMET, the knowledge and understanding of the literacy and numeracy criteria for promotion, the policy on literacy and numeracy levels to be attained after three and eight years, and the provision of literacy and numeracy to all RN personnel.

Policy does not stand still however, and this section also outlines some of the new directions currently emerging from Government and Service policymakers.

Main Findings

The RN policy on literacy and numeracy has had, and continues to have, a widespread impact on all its personnel. The attitudes towards literacy and numeracy shown both by the sample group and their line managers as well as the evidence of senior officers and education staff all testifies to an organisation that is wholly committed to improving the standards of literacy and numeracy for its entire staff.

The areas which need attention are largely already well understood. Provision of education at sea is an important opportunity for providing education, but senior officers are aware that the standard of teaching of GCSE English and maths is not as good as its shore-based equivalent. Provision of literacy and numeracy on board is lacking in resources and new and innovative ways of supporting learners on board are being trialled.

The promotion criteria linking levels of literacy and numeracy to different ranks is both well known and understood at all levels, and acts as a great spur to staff to improve their own literacy and numeracy. Although line managers may not be overly concerned with trainees' education levels in general, once promotion is a possibility they make it clear to individuals what is required of them.

While the RN, unlike the other Services, seems content with JPA as a system for storing education achievements, some line managers seemed to think they were not authorised to access the education records of their staff.

The great majority of recruits in general, and all of those in the sample group, will achieve at least a L1 qualification in literacy and numeracy as part of their trade apprenticeship. They are also complying with the policy aim of all staff achieving L1 within three years of joining the Service. There remains a small group who do not complete their apprenticeship and who, unless looking for early promotion, are likely to pass the three year mark without the required level of qualification. It is impossible from our evidence to quantify how many might fall into this group.

The policy initiative of requiring everyone to attain L2 after eight years service, as opposed to prior to promotion to PO, is not at the moment being enacted. There is no knowledge of this policy at AB, LH or PO level, no mechanism for enforcing it. The likelihood is that this policy will be refined in the near future.

Application of RN policy

The central elements of the RN Basic Skills Policy are that:

- The NAMET qualifications be replaced by LANTERN (adult literacy and numeracy qualifications).

- That all personnel should gain at least L1 literacy and numeracy qualifications within three years of joining the RN or on promotion to LH or Corporal.

- That all personnel should gain at least L2 literacy and numeracy qualifications within eight years of joining the RN or before promotion to PO or Sergeant.

- All personnel will have access to literacy and numeracy support, including those serving in Fleet and RM units.

- Literacy and numeracy achievements will be captured on JPA.

LANTERN replacement of NAMET

The younger recruits who form the sample group all appeared to know and understand LANTERN, how it worked and the requirements for promotion. Older staff, mostly LH and POs, were also aware of the phasing out of NAMET accreditation but were much less convinced of the need to do anything about it. **Although aware that NAMET has no acceptance in civilian life, many were unconvinced of the need to hold commonly recognised qualifications**, taking the view that their practical experience should be enough to obtain employment in the civilian world.

The NETS officers, Deployed Education and Unit Education officers are specifically targeting those staff who hold only NAMET qualifications, and no other Literacy and Numeracy qualification. They are intelligently prioritising those with the greatest need and report that, although most are prepared to embark on obtaining literacy and numeracy qualifications prior to resettlement, there remains a core who do not accept the advantages of taking this path.

The three year rule

The RN Basic Skills Policy states that all recruits should attain L1 in literacy and numeracy within three years of joining. The principle mechanism for achieving this is the requirement of all entrants to obtain an Apprenticeship qualification which includes a minimum of L1 literacy and numeracy. In our sample all ratings and marines achieved these mandatory minimum standards.

However, the pass rate for the Apprenticeships is not 100% but around 91%, after allowing for those who leave the Service prematurely for any reason. Since completion of the apprenticeship is not a naval requirement, **there remain a number of ratings and marines who are considered to have TPS capability despite non-achievement of the Apprenticeship, and who will therefore enter the trained strength without necessarily achieving L1 literacy and/or numeracy.** It is not currently possible to know what these numbers are; although about 100 or so fail to complete the Apprenticeship each year, some of these will have the requisite literacy and numeracy qualifications. **There is currently no mechanism for identifying these individuals until they apply for promotion to LH**.

Promotion criteria

The primary lever for encouraging personnel to obtain higher levels of literacy and numeracy is their use as a promotion criterion. Our evidence is that **almost all ratings were aware of the promotion criteria and were aware of any requirement to achieve**

higher levels to progress. Similarly, line managers were aware of the criteria, and also concerned that the staff they managed had sufficient literacy and numeracy qualifications for the next level of promotion. NETS officers systematically search out staff who need literacy and numeracy qualifications to be eligible for promotion when they visit ships, and learning centre staff thought that learners were particularly motivated because of the need to acquire qualifications. **As a mechanism, linking promotion to acquiring specific levels of literacy and numeracy qualifications is an efficient process**. As one NETS officer put it:

> I doubt if we'd gone in and said, 'Education's good for you, guys! It will mean something outside, and it's in everybody's best interest.' I doubt we'd have had many people through our door. The fact that we said, 'If you don't sit my class, you won't get promoted,' [means] there's a big line outside the door.

It was harder to judge levels of awareness amongst marines of the literacy and numeracy requirement for promotion. Whereas all the ratings in the sample were already looking ahead, the small number of marines interviewed were still looking towards proving themselves through completing training or undertaking their first tour. Ideas of promotion and even specialisation are not priorities for marines at this stage of their careers.

The eight year rule

While almost every rating or NCO was aware of the literacy and numeracy requirement for promotion, **none was aware of the policy requiring all staff to attain L2 numeracy and literacy within eight years of joining the Service**. At present there is no mechanism in place for enforcing this policy and no decision has yet been made on how it might be implemented.

Provision of literacy and numeracy for all staff

The educational facilities available at the principal UK naval bases of Portsmouth and Devonport are well known, busy and deliver a large number of literacy and numeracy achievements each year. All staff interviewed knew of the centres and where they were even if they had not visited them. The same can be said at CTCRM where the learning centre is at the heart of the training establishment.

For most ratings, their principal area of deployment is the ship. Once again there was universal awareness of the education offered on board, particularly of English and maths GCSEs. The 'flying provision' offered by NETS staff was also understood. It is difficult for this study to come to any conclusions on the quality of the provision offered. The GCSE delivery was largely without a formal quality assurance system during the research period; whilst it undoubtedly can be successful – as it was with the one rating from the sample who completed his English on board – it seems likely that teaching quality will be variable. This is an area which the RN is currently addressing.

The free time available for ratings on board, and the positive ethos towards education provided by the Service, makes on-board education a significant opportunity for everyone. However, **further work needs to be done to ensure that the**

quality of teaching delivered meets the high standards expected in the RN. In the civilian sector all those teaching English or maths at any level are required to hold subject specific teaching qualifications. The CTTLS[163] qualification was designed with the Services in mind, and it may be that further research needs to be carried out to see how widely held this qualification is, and whether it has had any impact on the effectiveness of teaching.

There is plenty of anecdotal evidence of the benefits of the NETS visits to ships, and they undoubtedly deliver a large number of initial and final assessments. However, even if the current mentoring trial is extended, and with periodic communications to COs reminding them of the importance of identifying individuals within their command who are not LANTERN qualified, with each ship currently visited on average once every 18 months, many ratings are missed as they move around the fleet.

Given the time it takes for the trainee marines to pass out of training, and the high rate of discharge, it is not possible at this stage to address the issue of further educational support for marines in the field.

Policy development

Inevitably, the policy agenda has shifted throughout the length of this study, and at the time of writing there are many potential changes to policy and practice.

Strategic Defence Review

The current reassessment of RN assets and personnel in the light of the Coalition Government's announced spending cuts shapes the new context for all naval policy. The scrapping of major ships such as Ark Royal and a **projected cut in manpower over the next few years will have an impact on the provision of literacy and numeracy within the RN**. The financial requirement to 'do more with less' will be a policy necessity for the coming period.

The Strategic Defence and Security Review did, however, include a recommitment to education and training for Service staff. The review **specifies the need for highly capable and motivated personnel with specialist skills, including cultural understanding; strategic communications to influence and persuade; and the agility, training and education to operate effectively in an increasingly complex environment**[164]**.** Accordingly, the demands of economic austerity will need to be balanced by this continued focus on the vocational and academic training of Service personnel.

Impact of Royal Navy Basic Skills policy

There is considerable anecdotal evidence from the chain of command and from the NETSs officers that the POs who are qualified to L2 literacy and numeracy are performing

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[163] Certificate in Teaching in the Lifelong Learning Sector.
[164] HM Government (2010) *Securing Britain in an Age of Uncertainty: The Strategic Defence and Security Review*, Part 2, p. 17

much better than those who qualified under NAMET. This suggests both that **the LANTERN framework provides for a better skill level than NAMET and that improving those skills has an impact on the work of a PO**.

COs on board ship provide very favourable feedback to the NETS service about the impact the literacy and numeracy provision they provide. As well as providing the qualifications ratings need for promotion, it was reported that there is a benefit to the ship's company which can be seen in terms of morale, mental well-being and professional and personal development. Few senior officers remain sceptical about the impact of good literacy and numeracy on ratings; they are aware that having capable report writers – for those who are first reporting officers, for example, – puts less pressure on the system to have to administer reports. Therefore time is freed up for personnel further up the chain of command.

A senior NETS officer had recently received some unsolicited feedback when interviewed:

> *Individual COs – I never get a bad comment back. And that ranges from a lieutenant-commander who is a CO of a small ship, right through to a captain of an aircraft carrier or a big amphibious ship. They all comment back to me, on the NETSOs visits, that we've done a good job. I'm interested in what they think of the products we've delivered, particularly Basic Skills because that is our measure of how we can not only develop our people, but then act as a gauge as suitably qualified for promotion. Only yesterday I got an email from the fleet capability surface stream manager, he commented back to me completely unsolicited and cold, that he was extremely pleased that having observed what we do over the last 18 month period, we were getting it right. So for the capability manager to say that he values what we bring I think that's endorsement, and from a very, very operationally focused warfare perspective, to comment that the educational support services we're providing are fit for purpose means a lot to me.*

6.10 Conclusions and recommendations

Introduction

The scale and nature of literacy and numeracy provision provided by the RN needs to be seen in the light of the profile of current RN entrants, which shows very low numbers recruited with literacy or numeracy at Entry level. The structure and mechanisms put in place by the RN are, therefore, testament to the position of senior officers that education is a core value of the RN, and that providing education provision at all levels, is a duty the RN is determined to uphold.

The RN Basic Skills Policy

In most respects, the research found that the RN Basic Skills policy is being successfully carried out. There is widespread knowledge and understanding of the LANTERN approach and that NAMET is nearing its end. The need for ratings to have L1 literacy and numeracy qualifications before promotion to LH and L2 before promotion to PO or Sergeant is also widely known and understood. The process whereby personnel have to study literacy and numeracy if they want to advance is familiar and accepted at all levels of the organisation. Record keeping on JPA does not cause problems and, while there remain some questions about the most effective way of delivering literacy and numeracy for ratings on board ship, approaches are not only in place, but are being scrutinised and reformed.

A weakness that remains a concern is the time-limit criteria, that eight years after recruitment all ratings should achieve L2 literacy and numeracy qualifications. These appear not to be widely known and there is at present no mechanism to ensure the implementation of this policy.

Although the number missing these targets is small, there are several ratings each year who enter the trained strength without completing their apprenticeship and who may therefore not have L1 literacy and numeracy qualifications. Unless they are promoted or interested in promotion they could remain at a level below L1 for their entire career. Rather more will not aim to achieve L2 if they are not looking for promotion beyond LH.

Delivery of literacy and numeracy on board ship

Most of the sample ratings were interested in pursuing further educational opportunities while at sea. The attraction is that, being away from home and from other distractions, they can use free time to gain some qualifications. The RN is aware of this, and has expanded their education provision to meet this demand.

Delivery of literacy and numeracy on board is a complicated and logistically challenging process. The feedback from ships visited by the NETs officers is positive, but their interventions are sporadic, may not be sufficiently frequent and are short in duration. If NETS staff were able to visit more regularly, spend longer on board and have more dedicated facilities, it is likely that more ratings would achieve the required standards. However, in the current context, increased resources are unlikely to be forthcoming. The mentoring trials are a creative and positive attempt to give greater support to learners on

board at minimal cost, but a decision on this initiative will have to await the completion of the trial process.

Delivery of English and maths GCSE courses on board is widespread and well publicised. Concerns expressed by headquarters staff about the low success rate suggest that not enough mechanisms are put in place to assure the quality of the process. Delivery by officers with a higher level qualification (usually 'A' level) and a military 'Train the Trainer' certificate would not be seen by education professionals as sufficient preparation for taking those with low prior performance through to success at GCSEs; they would be unlikely to have up-to-date knowledge of either literacy or numeracy pedagogies, particularly those most effective with learners at lower levels. In the current economic circumstances efficient use of resources is an important requirement and the current review of this process is welcome.

Accessing education records

All those interviewed felt that the records kept on JPA were sufficiently accurate and reliable for most purposes. However, access to the competencies area of JPA, where education records are stored, is restricted. Line managers can gain permission to view this area, but it was apparent that not all line managers are aware that they could easily gain permission to access the records of the personnel serving under them.

Delivery of literacy and numeracy

There can be little argument that the shore-based Learning Centres deliver high numbers of Certificates in Adult Literacy and Numeracy with a very high degree of success. Most staff spoken to could count those who had not succeeded on the fingers of one hand. There is, however, a question of how much sustainable learning progress can be expected as a result of these short courses. At the same time, the ethos and culture of the RN may make a significant contribution to learners' receptivity and ability to learn, and, clearly, the Centres deliver the achievements required by the RN and Armed Forces literacy and numeracy policy.

The TORCH Hub e-learning centres have proved their worth in delivery of the adult literacy and numeracy test. These are available on demand, provide instant feedback and can be undertaken in their entirety on a computer. The literacy test at L1 and L2 are essentially only tests of reading, and are easily and efficiently administered. The advent of Functional Skills will lead to a very different teaching environment. They will require more tuition of skills and knowledge, and they will have more demanding assessment criteria. This may have delivery implications for Torch Hub provision.

Functional Skills

The RN, along with the other Services, is planning to change its literacy and numeracy delivery to encompass Functional Skills. This will require large changes to staff training, learning resources, assessment regimes and so on. The complexities of introducing Functional Skills for all literacy and numeracy learners suggest that the unification of all literacy and numeracy provision under one Commander is timely and helpful to the process.

Funding

Over the past few years the RN has benefited from Government funding of literacy and numeracy. The previous Train to Gain service and the National Employers Service (NES) encouraged delivery in the workplace at minimum disruption to the employer, and at no cost to the learner.

All delivery of literacy and numeracy undertaken by or on behalf of the RN is fully funded by government. In this case the needs and requirements of the RN are paid for by government, because their aims are identical to the Service's. The challenge for the RN arises if and when their respective priorities diverge. An analysis of the costs to the Service of 'Fully funded' provision would help to inform future policy decisions on the nature of literacy and numeracy provision.

Future entry requirements

Despite the funding provided to the RN by the Skills Funding Agency, and the relatively low numbers of current recruits entering with literacy and numeracy below L1, providing the infrastructure to deliver literacy and numeracy education to all RN staff remains a drain on scarce resources. In the context of a shrinking Service, and at a time when civilian society continues to move towards more demanding educational standards, a policy which required all recruits to hold L1 literacy and numeracy or even L2 literacy and numeracy on entry would certainly be financially beneficial. The traditional argument, that it would restrict the pool of potential recruits, is perhaps less persuasive in the light of the fact that 70% or more are already entering with L2 qualifications. Such a policy would lead to literacy and numeracy delivery and support being restricted to a diminishing legacy only role.

RN Ratings and SpLD support

As previously noted, a RN SpLD policy is being prepared, but is not available to this study at the time of writing. It is understood, however, that it will require a shift in focus and resources from diagnosing SpLD to supporting all with SpLD issues at every stage of their career.

Evidence from this study tends to confirm that a SpLD is no barrier to working at the AB level, but it will become so following promotion. It is beyond the scope of this study to explore this further, since it arises when those who are severely dyslexic or Scotopicly sensitive are settling into their first promotions and perhaps looking for their next. An effective policy will see these ratings succeed and prosper despite their SpLDs. It is by the future careers of these sailors that any new RN SPLD policy needs to be judged.

Literacy and numeracy used in RN job roles

The study leaves no room to doubt the importance of speaking, listening, reading, writing, numeracy and ICT in the day to day job roles of AB level ratings and marines.

Every one of these skills was used by at least one trade represented in the sample on a regular basis. Speaking and listening were a vital part of every single branch and

specialisation. The list of tasks requiring careful and accurate listening by anyone working in the Operations Room environment was particularly striking. Reading was only marginally less central to all branches, and only the CIS ratings felt writing was not very important. Numeracy was central for marines, Writers and Chefs and ICT for Chefs and CIS.

Given that these findings derive from individuals at the first stages of their career, the list of tasks requiring good levels of literacy and numeracy can only increase as personnel progress in their careers.

That the respondents themselves were unaware how much of their role required good levels of skills is unsurprising. Many of these tasks are carried out without conscious thought as to the underpinning skills needed. But there is no doubt that literacy and numeracy do contribute significantly to every branch and specialisation in the RN.

Part played by literacy and numeracy in operational effectiveness

Close questioning of the sample group and their line managers reveal the qualities deemed most important for operational effectiveness. Teamwork, experience, commitment and a positive attitude are key attributes for operational effectiveness. Speaking and listening were also key across all branches in the RN.

When looking at the responses from different job roles, speaking and listening emerge as a central skill for all; reading and writing for most; and numeracy and ICT for some. While literacy and numeracy skills are not the only factors in making ratings operationally effective, some literacy and numeracy skills are essential for all roles, and most literacy and numeracy skills are essential for Chefs, Writers, CIS and Seaman specialists.

Progress of the sample cohort

Overall the progress of the sample group has been positive. Ten of those interviewed felt they were making satisfactory progress and were enjoying their roles. Only two were feeling negative about their career choice, and one of those was the result of a civilian accident.

It is clear that none of the sample have been hampered by their lack of good literacy and numeracy skills or having a SpLD and they, along with their line managers, are happy that their literacy and numeracy skills do not compromise their operational effectiveness in any way.

The RN's positive attitude towards education made an impact on the trainee group. Most are now interested in attaining further literacy and numeracy qualifications, and other academic and non-academic qualifications. Not one of the group questioned the use or reasons for undertaking further literacy or numeracy qualifications. For these trainees it was obvious why the best possible literacy and numeracy skills were needed for a job in the modern Navy.

Recommendations

In many respects this study is closing just at the point when the careers of the sample group are developing in ways which will further test their levels of literacy and numeracy skills. Any impact poor literacy and numeracy skills will only really be seen as they settle into LH job roles and begin working towards PO. It would be valuable to understand how the RN will be able to support the two very able trainees with severe SpLDs into higher level roles. Further research would provide yet more useful and illuminating information on the effect of poor literacy and numeracy skills or severe SpLDs on career prospects of ratings.

This study has not been able to probe continuing literacy and numeracy education in the RM. A longitudinal design, of the type used in this study, is entirely unsuitable for this purpose. If further insights are required concerning marines in the field, a study would need to be constructed starting with fully trained marines so as to minimise attrition.

There is an opportunity with the introduction of Functional Skills to reconsider the policy of 'exemptions'. Those without a maths or English qualification which specifically includes an element of 'functionality' should not be exempted, to ensure that the whole cohort has the same level of functional skill. The success or otherwise of this attempt to improve the 'trainability' of recruits would need to be subsequently evaluated and reviewed.

Whilst the use of e-learning on its own has been effective in delivering certificates in adult literacy and numeracy, its application in the teaching and support of Functional Skills programmes will require further consideration.

A mechanism needs to be put in place to ensure that all new recruits do achieve L1 literacy and numeracy after three years and L2 literacy and numeracy after eight years.

The current entry cohort shows that 99% of current recruits already have literacy and numeracy of at least L1 and around 70% have L2 in literacy and numeracy. Given this profile, there is an option to increase the minimum entry to at least L1 for literacy and numeracy. Lifting entry levels to L2 may also be a realistic option in the current climate.

Further examination is needed of how Adult Literacy and Numeracy and GCSE English and maths can be most efficiently delivered on board ship. Exploration of the civilian teaching qualifications PTTLS[165] and CTTLS for any RN personnel teaching English or maths at any level should be considered.[166] GCSEs represent the qualification with most credibility for ABs, LHs and POs, and all ABs should be encouraged to obtain an A*-C in English and maths if at all possible. This will equip them for life both within and outside of the RN.

The appraisal system was well received by all interviewees. However, there was a variety of approaches towards examining the education qualifications of the ABs. It should be considered whether further guidance for line managers as to their responsibilities towards

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[165] Award in Preparing to Teach in the Lifelong Learning Sector
[166] The RN GCSE policy is currently under revision, and this recommendation is understood to be included.

encouraging ABs to attain literacy and numeracy qualifications is required. Similarly, further guidance on how to gain access to education records on JPA should be considered.

This study has not had an opportunity to investigate the impact of the proposed new RN policy on supporting SpLD. However, a factor in determining its success will be the impact the policy has on the continuing careers of trainees such as Trainees 9 and 21.

The study has started the process of mapping tasks required in RN branches and specialisms to speaking, listening, reading, writing, numeracy and ICT. Similarly it has started to identify the contribution made to operational effectiveness by the different literacy and numeracy skills. This work needs to be brought to the attention of military as well as academic trainers, and further mapping done to illustrate the crucial importance of adequate literacy and numeracy skills for RN job roles.

It is absolutely clear that speaking and listening are key skills for all the ratings' job roles. At present there appears to be no provision available to ratings or marines which would enable a rating to specifically improve these fundamentally important skills. Similarly, there is not clear strategy or approach to those who have ESOL requirements, which in general are centred on speaking and listening.

Chapter 7: The RAF

7.1 Introduction

The 2011 RAF Literacy and Numeracy Policy states that sound literacy and numeracy skills help RAF personnel 'to assimilate training more effectively, cope more readily with the demands of their specific roles, and to take full advantage of career opportunities'. The policy implies that 'sound' levels are, at a minimum, equivalent to Level 1 (L1), and the policy re-iterates that the minimum literacy and numeracy entry requirement is a qualification at L1[167].

This chapter provides a profile of literacy and numeracy levels and provision in the RAF and their impact on the operational effectiveness and professional and personal development of Service personnel.

The chapter begins with a summary of the number of recruits with low levels of literacy and numeracy (7.2) and a description of the sample of recruits involved in the third and final stage of the study (7.3). The next sections provide a profile of Basic Skills/Key Skills/Functional Skills provision (7.4), before examining methods of literacy and numeracy skills assessment and record-keeping (7.5), and airmen's views on literacy and numeracy provision (7.6). This is followed by an examination of airmen's levels of literacy and numeracy and their application to particular trades (7.7). Section 7.8 looks at the scale of Specific Learning Difficulties (SpLDs) in the RAF, and section 7.9 at the impact of literacy and numeracy and SpLD on operational effectiveness. This is followed by an assessment of the role of literacy, numeracy and SpLD in an airman's career (7.10), and the chapter closes with conclusions and recommendations for RAF policy and practice (7.11).

A number of themes emerge in this chapter:

- The very small number of personnel with low levels of literacy and numeracy, and the implications for the scale and content of provision.

- The importance of sound literacy and numeracy to operational effectiveness and employability within the RAF, especially speaking and listening skills.

- The relationship between seniority and the importance of literacy and numeracy levels.

- The mixed evidence on the contribution of literacy and numeracy provision to a sustained improvement in skill levels.

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[167] In exceptional cases applicants are admitted on the basis of aptitude alone.

- The highly supportive culture of training and development.

- The high levels of support for SpLD.

- The adoption of Functional Skills qualifications to support sustainable literacy and numeracy skills development.

7.2 Incidence of low levels of literacy and numeracy in the RAF

The incidence of airmen with poor levels of literacy and numeracy is very low and the scale and nature of literacy and numeracy provision discussed in this report should be considered with this fact in mind: in 2010, 99% of recruits were assessed at IA as having L1 or above in literacy, and 97% as having L1 or above in numeracy[168] (see Table 7.1[169]). **No airmen entered the RAF with BS below Entry Level 3 (EL3)**[170]**,** and the numbers of recruits at EL3 were also very small.

Table 7.1: BS level of RAF recruits on entry by IA (2010)				
RAF IN TOTAL	**Literacy at IA**		**Numeracy at IA**	
	N	%	N	%
EL1	1	0	0	0
EL2	0	0	0	0
EL3	5	1	23	3
L1	544	56	409	44
L2	426	44	490	53

Although the number of airmen at Entry Level is very low (29 having Entry Level literacy and numeracy for the whole of 2010), a larger number may require remedial support with their literacy and numeracy at the two RAF Phase 1 training centres. This is likely to be because airmen who gained L1 or Level 2 (L2) qualifications prior to joining the RAF may have experienced 'skills fade' (a loss of skills over time) and consequently will be operating at a lower level than their qualifications suggest. Any loss of skills should be detected during the process of Initial Assessment.

The RAF has a much larger group of entrants at L1 than the RN: 56% in literacy and 44% in numeracy, compared with RN figures of 24% in literacy and 23% in numeracy.[171] This suggests that the RAF may have a larger challenge than the RN in raising literacy and numeracy skills to L2.

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[168] Data are from HQ 22 Training Group. These figures, and those in Table 7.1 and Table 7.2, are rounded up to the nearest whole number.
[169] Table 7.2, Appendix A provides a breakdown of these figures by RAF training centre.
[170] One individual entered the RAF with literacy at EL1. We have assumed that this is a unique case.
[171] These data are based on scores at Initial Assessment.

7.3 Sample

This section describes the profile of the sample of interviewees at Stage 3 and identifies the characteristics of each of the personnel who took part.

The sample size and effort required to sign up a sufficient number of recruits with low level literacy and numeracy skills is a reflection of the RAF skills profile; it should therefore be emphasised that the evidence from this study is focused on the profile, needs and operational effectiveness of individuals whose levels of literacy and numeracy are lower than the vast majority of RAF recruits.[172]

Sample at final stage of study

Interviews with the original sample of 29 trainees recruited began in December 2008. By the beginning of Stage 2 (February 2010) eight of the original sample had been discharged from the Service leaving a total of 21; however, a further six of these were deployed out of area during the Stage 2 fieldwork, and as a result 15 airmen from the Stage 1 sample were available for interview at Stage 2[173]. Thirteen of the 15 were interviewed for a third and final time in Stage 3.

During Stage 3 (December 2010 and April 2011) a total of 33 RAF personnel were interviewed: the 13 airmen (11 Senior Aircraftmen [SACs] and two acting corporals in the RAF police); ten military staff[174] (who were the airmen's line managers) eight educational staff;[175] and two staff officers. Interviews were generally face-to-face, although several were conducted by telephone. A summary of the RAF Stations visited in Stage 3, and the trades of those in the sample group, is shown in Table 7.3, Appendix A[176].

The Stage 3 cohort of 13 airmen comprises two groups: seven Trades Personnel, who trained at RAF Halton, and six RAF Regimental Gunners, who trained at RAF Honington. The recruits' levels of BS were arrived at in different ways at each Station: at RAF Halton in 2009 there were no Pre-Recruitment Training Courses (RTCs), as there are now, and the airmen in the original research sample took a literacy and numeracy diagnostic assessment during their first week. At RAF Honington, literacy and numeracy levels were based on an IA taken during the Potential Gunners Awareness Course (PGAC)[177] and before training commenced.

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[172] The sample, therefore, is not representative of all trades and branches.
[173] This number was, nevertheless, judged sufficient for the purposes of the study. .
[174] These included: three Corporals, three Sergeants, one Flight Sergeant, one Pilot Officer, one Flying Officer and one Acting Flight Commander.
[175] Some educational staff also held a military rank. Four were Personal Learning Advisors (PLAs); two were Key Skills instructors; one was a Station Development Officer (STDO) and one was the SpLD advisor for Phase 1 Training. Educational staff were interviewed from Station Education Centres at RAF Halton, RAF Honington, RAF Odiham and RAF Wittering.
[176] There are 87 trades in the RAF organised under 20 Trade groups.
[177] This course is now called the Potential Gunners Selection Course (PGSC).

At RAF Halton in 2009 only trainees assessed as having literacy and numeracy at EL2 or below received literacy and numeracy provision[178]. Out of the 13 trainees (original Stage 1 sample) who attended RAF Halton at Stage 1, six received remedial literacy and numeracy provision; out of the 10 who attended at Stage 2, three received provision; and out of the seven who attended RAF Halton at Stage 3, three received provision. All of the original (Stage 1) sample of 16 at RAF Honington undertook Key Skills and gained qualifications in literacy and numeracy at L1 as part of their apprenticeship in Public Services

Whereas all six of the RAF Regimental Gunners in the Stage 3 sample took Key Skills around Week 32 of the training programme at RAF Honington[179], and gained an Apprenticeship in Public Services, only three of the Ground Trades Personnel at RAF Halton did so during Phase 1 training. Therefore a total of nine of the 13 airmen had received Basic Skills (or Key Skills) provision in their early training. However, by the end of Phase 2 training, all but one of the Ground Trades Personnel had gained an Apprenticeship, and had Key Skills qualifications at a minimum of L1. No airmen had taken any further educational provision in productive service by the time the fieldwork for this study was completed in April 2011.

Table 7.4 provides an overview of the 13 airman in the final stage of this study, including information on where their Phase 1 training took place, their literacy and numeracy levels at Initial Assessment, whether or not they participated in Basic Skills or Key Skills provision, and the type and level of any SpLDs airmen reported to researchers. The table shows that four of the ground trades personnel were dyslexic, two severely, and that four of six Regimental gunners were dyslexic, one severely. Overall eight of 13 airmen in the Stage 3 sample reported having dyslexia. The incidence of SpLD amongst recruits has implications for RAF SpLD policy and provision, and these are considered in section 7.8.

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[178] Trainees at EL3 would be expected to gain their L1 BS qualifications as part of their KS gained during apprenticeship training in Phase 2. Literacy and Numeracy provision at RAF Halton is now almost exclusively for trainees with BS at EL3.
[179] Although instructors referred to this time period as 'Phase 3', it was technically pre-employment training.

Airman number	Phase 1 training	Station during Stage 3	Level at IA or diagnosed score in literacy	Level at IA or diagnosed score in numeracy	Lit on leaving early training	Num on leaving early training	Self-reported SpLD***
1	RAF Halton	RAF Marham MT Driver	EL3	EL3	EL3	EL3	**Dyslexic: mild
2	Halton	RAF Wittering MT Driver	EL2	EL3	EL3	EL3	No
3*	Halton	RAF Marham RAF Police	EL3	EL3	EL3	EL3	**Dyspraxia: mild
4	Halton	RAF St Athan RAF Police	EL3	EL2	EL3	EL3	Dyslexic: severe
5	Halton	RAF Halton Medical Assistant	L2	EL3	L2	EL3	No
6	Halton	RAF Lyneham Logistics Movement	EL3	EL3	EL3	EL3	Dyslexic* mild
7	Halton	RAF Lyneham Supply	EL1	EL3	EL3	EL3	Dyslexic: severe
8	Honington	RAF Wittering	L1	EL3	L1	L1	Dyslexic: mild

Table 7.4: Summary of trainees' levels of literacy and numeracy and self-reported SpLD

9	Honington	RAF Wittering	EL3	L1	L1	L1	Dyslexic: mild
10	Honington	RAF Honington	L1	EL3	L1	L1	No
11**	Honington	RAF Honington	EL3	EL3	L1	L1	Dyslexic: severe
12	Honington	RAF Honington	L1	EL3	L1	L1	Dyslexic: mild
13	Honington	RAF Honington	L1	L1	L1	L1	No

Key:
* Airman did not inform their line manager about SpLD.
** Airman had intensive one-to-one help with a SpLD tutor for several weeks when he was injured.
*** For RAF gunners, the level of SpLD is self-reported; self-reported SpLD levels of Ground Trades Personnel were generally confirmed by line managers.

7.4 The characteristics of literacy and numeracy provision

Introduction

The main objective of literacy and numeracy classes is to equip personnel with the knowledge and skills that enable them to function effectively in an operational environment. In this sense, the emphasis is on training recruits rather than on providing them with an education, and this should be seen as part of the context in which literacy and numeracy is delivered in the RAF.

This section describes the literacy and numeracy provision at RAF Halton and the key skills provision at RAF Honington, as observed during the period of study; it also considers apprenticeships, personalised provision, further opportunities for basic skills education and the introduction of Functional Skills.

As with the other Services, RAF provision of literacy and numeracy will be substantially modified in 2011, particularly with the introduction of Functional Skills from September 2011 at the two Phase 1 training schools.

Main Findings

The main objective of literacy and numeracy classes is to equip personnel with the knowledge and skills that enable them to function effectively in an operational environment. In this sense, the emphasis is on training recruits rather than on providing them with an education, and this should be seen as part of the context in which literacy and numeracy is delivered in the RAF.

The RAF is highly successful in ensuring that airmen acquire nationally recognised qualifications, and pass rates are high. At the same time the introduction of Functional Skills suggests that more can and has been done to improve the extent to which literacy and numeracy-related qualifications support personnel in becoming functionally equipped to perform their jobs.

The small number of recruits with low levels of literacy and numeracy skills places restrictions on the viability of some externally funded options for provision; this applies, in some cases, to face to face, discrete personalised provision (when individuals are 'out of area' for example), although recruits do have access to local educational provision.

The culture of training and development includes an expectation of provision that is often short and intensive, and an expectation that training will be completed successfully. High, focused and managed expectations are known to be part of a positive learning environment and the evidence elsewhere in this report points to the benefits for recruits of training in an environment of this kind.

Literacy and numeracy provision in the RAF

Basic Skills and Key Skills provision in Phase 1 at RAF Halton and RAF Honington

Provision at RAF Halton for the Ground Trades Personnel was offered for **two hours per week – 14 hours in total – over a nine-week programme for each of literacy and numeracy**[180].

During the earlier stages of the study, **Phase 1 and 2 military training at RAF Honington for the RAF Regimental Gunners were combined and lasted for 24 weeks**. Whereas previously Key Skills provision[181], lasting approximately 25 hours, was scheduled to take place in week 32, during the final stage of the study it was re-scheduled to take place in week 24 – that is, within Phase 2.

Both RAF Halton and RAF Honington have been piloting Functional Skills since autumn 2010; these are now to be 'front-loaded' and will feature at the beginning of the training programme[182]. This will amount to a substantial revision to existing literacy and numeracy provision[183].

Apprenticeships

Ground Trades Personnel leaving RAF Halton move on to Phase 2 training units to undergo specialist trade training and to begin a trade-specific apprenticeship at L2 for example, those working in Supply take an apprenticeship in 'Warehouse and Distribution'). The apprenticeships are portfolio based and should be completed during the first appointment in productive service[184]. The largest element within the apprenticeship is the NVQ; this is an assessment of competency in the workplace, evaluated by means of continual assessment, embedded into the trade tasks, and regarded by the airmen as part of their job[185].

Regimental Gunners at RAF Honington undertake an apprenticeship in Public Services at L2, which includes two wider Key Skills – Working with Others (WWO) and Improving Own Learning and Performance (IOLP) – which are both at L2 and assessed by a written portfolio, as well as an NVQ Diploma in Public Services[186]. The future aim is for the Regimental Gunners to begin work on the apprenticeship early in Phase 1 training and to complete this within one year.

As with RAF Halton, the expectation is that, once Functional Skills are introduced in September 2011, all airmen will have Functional Skills at L1 as soon as practicably possible, and the objective is that 100% of airmen should have a minimum standard of

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[180] There were no Basic Skills classes in week one or week nine (the week of the test).

[181] Key Skills provision consisted of Application of Number (AoN) and Communication Skills (CS).

[182] There is as yet no information on the number of teaching hours for each Functional Skills at RAF Halton or RAF Honington.

[183] See Chapter 2 for further discussion.

[184] In keeping with the requirement of Phase 2 trade training, one SAC said she had completed 80% of her NVQ in Airport Operations during Phase 2.

[185] The assessors are generally part of the airman's training team.

[186] This is the same apprenticeship that is taken by the Royal Marines.

Functional Skills at L1 by the time they begin their apprenticeship in Phase 2. L1 is regarded as the level that enables individuals to be *functional* in relation to Phase 2 specialist trade training and, following that, productive service in the course of carrying out their duties.

Almost all (96%) RAF personnel undertake an apprenticeship during Phase 2 training, and this is delivered almost entirely in-house by a combination of civilian and military instructors. For the 65-70% of airmen who take one of three advanced apprenticeships it is a requirement that they gain Functional Skills at L2 before leaving Phase 1.

There are 15 types of apprenticeship, three of which are advanced, and they are run at 15 centres[187]. Unlike literacy and numeracy provision at RAF Halton and RAF Honington, the apprenticeships are not mandatory; however, as the tasks are embedded into everyday duties, airmen conclude that it is beneficial to their careers to gain the qualification[188]. **Pass rates are high – only 12% of the intake for 2010 (2776) failed to complete their apprenticeships**[189] – a figure which compares favourably with the other Services.

Like all Service personnel, **airmen are under pressure to assimilate a great deal of information from the start of military training, and the principal basic skills needed are speaking and listening**. Sound reading and writing skills are required when reading slides and making notes in military classes, which can be challenging for airmen with a severe SpLD or low levels of literacy and numeracy skills.

At RAF Honington, notes from military classes are copied out into 'best books', which can be used for revision purposes and serve as a point of reference. This practice is also linked to the disciplinary system; they are inspected periodically by NCOs and there are sanctions for books judged not to be at a sufficiently high standard[190]. Those trainee airmen with SpLDs, or weak literacy skills, generally take considerable longer than those with higher levels. For instance, one trainee (Airman 11, see Table 7.4) with dyslexia who had very poor writing skills was unable to take notes quickly enough during class time and spent most nights copying them up from other trainees. He also formed the view that not all NCOs had an understanding of the difficulties he faced.

Remedial literacy and numeracy provision at RAF Halton takes place in the evening, and one trainee who attended these classes spoke of how tiring this was, taking place after a full day's training, and before having to carry out admin[191] tasks along with the rest of his peers for the next day.

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[187] Around 65% of apprenticeships are undertaken at RAF Cosford, the biggest centre and the RAF's school of engineering.
[188] Aircraft Engineers cannot gain the operational performance standard without successfully completing their apprenticeship.
[189] All but one have left the Service.
[190] This does not apply to those identified with a recognised SpLD.
[191] Admin in this context refers to general domestic duties – keeping one's room and personal appearance tidy.

Personalised Provision

As a result of the very low number of airmen with low levels of literacy and numeracy skills it is not viable for RAF staff to run face-to-face discrete, personalised provision in literacy and numeracy. However, Personal Learning Advisors (PLAs) have strong links with many local providers and they facilitate appropriate courses for airmen, which may be funded through the use of Standard Learning Credits (SLCs). There is also guidance for personalised forms of learning on the Defence Learning Portal,[192] although researchers did not identify any airman or NCO who was aware of this[193].

One possible gap in provision is for a course that focuses on study skills, offering strategies on note taking (the most common literacy practice in the RAF).

Further opportunities for BS education for airmen in productive service

Once airmen reach productive service they are supported to develop their literacy and numeracy skills at Station Education Centres, through courses such as the International GCSE (IGCSE).

Airmen can either improve their Basic Skills or Key Skills qualifications from L1 to L2 or take an IGCSE/GCSE. Although none of the airmen in our final sample had taken any further provision, several spoke of their intention to do so in the future. PLAs and STDOs reported that courses are generally run on a supply and demand basis. Educational staff at a number of Stations, including RAF Marham and RAF St Athan, reported that their target **population is not large enough to justify the provision of regular in-house courses** and, instead, make arrangements with local providers (usually Further Education Colleges) as and when this is warranted by the numbers of airmen seeking literacy and numeracy courses (usually not fewer than 10).

Other Stations, including RAF Odiham, run GCSE classes in maths and English twice a year to coincide with the examination dates in May and November. They require a minimum of eight learners for a viable class. Provision is offered for two hours a week for each subject: English is offered over 18 weeks (=36 hours), maths over 14 weeks (=28 hours), and the PLA estimated that 80% of the learners attending were SACs.

This model of provision is not always suitable for airmen involved in shift work, overnight stays, or who are away for long periods of time. **For some of these personnel a more intensive model may be more appropriate**. At other Stations, such as RAF Brize Norton, IGCSEs are taken over one week at three points during the year[194].

In the view of one PLA and a Training Officer at RAF Lyneham, Education Centres were generally under-used.[195] A Station Training and Development Officer (STDO) thought that

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[192] Some PLAs refer airmen to the BBC Skillswise website. .
[193] Although the Defence Writing Course is face-to-face, and although it considers areas of literacy such as spelling and grammar, the main objective is to induct airmen into the military style and conventions of writing.
[194] IGCSEs and GCSEs are promoted at all stations.
[195] This may partly be explained by operational tempo, along with an increase in the use of web-based provision.

the most frequent visitors to the Education Centres were Corporals attending a Defence Writing Course, who needed to improve their levels of Service related literacy when writing became a more important part of their job.

In the RAF there is limited literacy and numeracy provision for airmen deployed to distant or isolated locations, but this should be seen in the context of the speed at which airmen are deployed as well as the length of deployment. There are, however, Training Officers on operational deployment in Kabul and there is a permanent Station Training and Development Officer in the Falkland Islands.

Improving the qualifications

The RAF is highly successful in ensuring airmen acquire a set of nationally recognised qualifications. Pass rates are high – in excess of 95% in Basic Skills – and anecdotal evidence suggests that no airmen fail in Key Skills. **The vast majority of Service personnel progress by at least one level of literacy or numeracy in 20 hours of provision or less**.

This said, one reason for the support given to the introduction of Functional Skills is an acknowledgement across all three Services that **Basic Skills and Key Skills provision has not been providing *all* Service personnel with a sufficient level of skills to become operationally effective in their trades**[196]. There is some evidence of this in the RAF. As one Officer from the higher chain of command remarked:

> *Phase 2 training schools and the instructors have gone 'I can't even work with these individuals', [and are] having to put extra in just to get them at the entry standard that they need to be able to do this. [...] We've had a lot of complaints [...] from Phase 2 Schools, saying input level isn't good enough, and we are spending far greater time on subject matter, which is below the level which we would be expecting.*

It appears possible that not all airmen arrive in Phase 2 with the requisite 'level of functionality' in literacy or numeracy. If this is the case, it may suggest that the Basic Skills and Key Skills qualifications are not suitable for all personnel, or that sufficient time is not provided on programmes to develop and improve sustainable skills.

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[196] Functional Skills are replacing Key Skills as a mandatory element of the apprenticeship framework.

7.5 Methods of assessment and record keeping

Introduction

This section describes forms of assessment and record-keeping in respect of both literacy and numeracy and SpLD.

Main Findings

The RAF provides extensive and sustained support to airmen whose SpLD have been identified.

The new RAF SpLD policy stipulates that individuals with SpLD are required to identify themselves to Line Managers, Instructors and SpLD Advisors on arrival at a new station. This enables them to receive extra support from line managers and is a practice that the other Services might benefit from adopting in their own contexts.

Line managers were generally unaware of the eight-year rule (whereby airmen needed to gain literacy and numeracy qualifications at L2 within eight years of joining the Service). This suggests that some policies are not always effectively transmitted to those working at the ground level.

Line managers would benefit from knowing airmen's literacy and numeracy qualifications so that they are in a position to organise provision for those who need it.

Assessments of literacy and numeracy, and screening for SpLD

On their arrival at RAF Halton and RAF Honington for Phase 1 training, all **newly recruited trainees, whatever their qualifications, are given a diagnostic assessment** using the Basic and Key Skills Builder (BKSB) with its additional facility to indicate a possible SpLD. The test takes approximately one hour (40 minutes for maths and 20 minutes for English) and all recruits are also required to produce a piece of free writing and complete a spelling test. The SpLD advisor at RAF Halton and a Key Skills instructor at RAF Honington reported that the tool is useful in picking up problems with syntax, handwriting, punctuation and grammar, and also visual disturbance for people with scotopic sensitivity syndrome such as Meares-Irlen syndrome.

National literacy assessment presents a challenge to all three Services: **tests were multiple choice and computer based, and personnel are therefore able to gain a Basic Skills literacy qualification at both L1 and L2 without being tested on their writing**. In the RAF writing becomes a core skill as airmen are promoted and assume greater responsibilities, and in some trades, writing is an essential part of the job from the point of entry[197]. There is also a measure of writing involved when personnel complete an NVQ portfolio as part of their apprenticeship.

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[197] Evidence from NCOs.

Record keeping

BS records

Educational records showing literacy and numeracy levels from Phase 1 are emailed to Phase 2 training officers. Two hard copies are also sent, one set to be picked up by the individual airmen and kept in their personal development folders, the other to be kept for archive purposes at the learning centre. This process is repeated when airmen move to productive service or are posted to new Stations or units.

During the research period, promotion in the RAF was not linked to academic qualifications, and aptitude and competences gained through trade-related qualifications were given priority over academic qualifications such as GCSEs and BS/KS qualifications. However, from April 2012 line managers will need to know the level of an airman's educational qualifications because, under the new RAF policy, airmen will require L2 in Literacy, Numeracy, and Speaking and Listening[198] prior to attendance at a course for promotion to Corporal (the Junior Management Leadership Course [JMLC])[199].

One line manager spoke of how he conducted an 'Arrivals' interview:

> *I will always do an arrivals interview. You've got quite a full arrivals form you do when you get posted to the police, and all your educational and vocational qualifications and everything are all put on that. They fill it in with all their next of kin details, all their personal qualifications, and what they've done in their career. And they've got boxes on there for, you know, do you have any weaknesses or anything you'd like to work with?*

This type of interview is an example of good practice. There is no requirement on line managers to be aware of literacy and numeracy skills levels amongst the wider population; however, those managers seeking information about Basic Skills records on the Joint Personnel Administration system (JPA) described difficulties in the way of accessing information. Whilst the JPA has information on individual airmen's Basic Skills qualifications, managers suggested that it is not always possible to find out how many airmen have passed Key Skills or possess qualifications at L1 or L2 throughout the organisation.

SpLD records
A record of any indicators of SpLD, along with any coping strategies, moves with the airman from Station to Station and from post to post during training and across productive service, and these are updated on each occasion as a new Individual Learning Plan (ILP) is drawn up.

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[198] Mechanisms have yet to be agreed on how airmen's speaking and listening will be assessed at L2 in order to fulfil the entry requirement to JMLC.

[199] Until recently airmen were required to list their academic qualifications as part of the appraisal process. Once the process changed to the SJAR this was no longer required as academic achievements are listed on the Joint Personnel Administrative (JPA) system.

Although these records are passed on to Squadron Training Officers in productive service[200], joint service policy stipulates that it is a matter of individual discretion whether to disclose this information on reaching productive service, and during the research period airmen were under no compulsion to reveal their SpLDs to managers. However, **the new RAF SpLD policy stipulates that individuals with an SpLD are required to identify themselves to Line Managers, Instructors and SpLD Advisors on arrival at a new Station**, and before they commence their training. Line managers that we spoke to reported that disclosure would help in accounting for an airman's poor performance, and would allow the option of further support and training.

Airmen's literacy and numeracy skills and SpLD: line managers' awareness

Training staff and PLAs receive training in recognising SpLD, whilst line managers are given the option of receiving training in becoming aware of SpLD. **The principal responsibility of an NCO is not to recognise an SpLD as such; it is, rather, to recognise whether someone is either failing in training or not performing to the standard required by their job**.

Of the nine Line Managers who were asked if they felt confident about being able to identify an airman with a SpLD, five said they would be unable to, whilst the remaining four thought that they would be able to identify dyslexia, mainly because they had previous experience of an individual with SpLD.

Since all airmen now pass out from RAF Halton[201] and RAF Honington with a minimum qualification at L1 in both literacy and numeracy, there is a tendency amongst line managers interviewed on this study to assume that none will need further support in Phase 2 training or in productive service.[202]

None of the line managers interviewed during the second stage of the study were aware of any records of an individual's literacy or numeracy qualifications. Eight of the 11 line managers interviewed in Stage 3 said they had no awareness of either the literacy and numeracy qualifications or SpLDs of the airmen under their command because, as far as they were concerned, no issues connected to literacy or numeracy had arisen in the course of airmen undertaking their roles and duties.

Three managers (two in charge of the same airman) became aware of two airmen's literacy and numeracy skills or SpLD because the associated problems were having a significant impact on performance. Another line manager became aware of an airmen's difficulty after he had returned from tour, having subsequently discovered that the airmen (an RAF Regimental Gunner) had experienced difficulties with writing when recording information from the radio. He reported that, had he been aware of this before the tour, he would not have assigned him to work with radios.

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[200] Any reports from Educational Psychologists are kept in a sealed envelope.
[201] At the time of the fieldwork a number of trainee airmen passed out of RAF Halton with qualification in literacy and/or numeracy at EL3. They would gain L1 qualifications in Phase 2, as part of their Apprenticeships.
[202] The RAF policy is to provide support for BS and SpLD at all points in a recruit's career.

Whilst Line Managers do not have a formal responsibility to identify SpLDs it is now acknowledged that it would be valuable if they had more information than previously. For example, airmen without equivalent qualifications are required to obtain a L2 qualification in both literacy and numeracy within eight years of joining the Service[203]; line managers would benefit from knowing an airman's literacy and numeracy qualifications in order that, if necessary, further provision can be organised around job commitments. This is one reason for the adoption of the **new RAF policy on SpLD, which requires that individuals with SpLD identify themselves to Line Managers, Instructors and SpLD Advisors on arrival at a new station**.

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[203] Or, following the 2011 RAF policy on literacy and numeracy, 'when practicable in their career'.

7.6 Airmen's views on literacy and numeracy

Introduction

This section presents airmen's view on educational provision and on any improvements in their literacy and numeracy.

Main Findings

The most frequently mentioned benefit of Basic Skills and Key Skills provision was improved confidence, particularly speaking in front of groups. Given the importance of speaking and listening as core, basic skills in the military context it is worthwhile to look at how much scope there is for airmen to enhance their speaking and listening in front of large groups of fellow airmen. This would improve their personal development and the increase in confidence and effectiveness would also be beneficial to the organisation as a whole.

Some airmen receive provision that meets their needs; others may not, and it is worth exploring how far provision is geared towards meeting individual's needs.

Generally, airmen thought that their literacy and numeracy had improved since joining the RAF not as a result of provision but rather as a result of using and practising these skills. This suggests that the introduction of Functional Skills, with its strong emphasis on the use and application of skills, will more closely respond to what airmen need and benefit from. But it is also worth emphasising that respondents tend to under-report and misrepresent their use of literacy and numeracy; and, further, the efficacy of using and practising skills may itself depend in part on recruits having first acquired some literacy and numeracy skills in the context of formal literacy and numeracy provision.

Educational provision

About half (six) of the airmen thought that the Basic Skills/Key Skills provision had helped them in their personal and professional lives. **The most frequently cited benefit was the confidence that trainees gained through delivering presentations to small groups as part of their Key Skills classes.** This improved their speaking skills and contributed to the ability of recruits to make more effective presentations.

> *The presentation was good, because I have never been on stage, I've never done anything like that, and I like to talk... but to get up in front of all those people and read off the board, you know, it sort of brings a little bit more out in you… that bit definitely helped me.*

For three airmen, **gaining a qualification had improved their confidence** and made them feel they would be more employable when they leave the organisation.

One airman both affirmed the benefits of giving presentations and mentioned other gains related to numeracy and literacy.

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> *Subtracting numbers, adding numbers, I just do it in my head, I never used to do it; the key skills helped me a little bit, and now I'm just reading books back at the house. Reading loads of like thick, really thick books.*

Two RAF Regimental Gunners spoke of having learned strategies for mental calculation which were useful for their roles, particularly when dealing with quantities of ammunition. However, six airmen spoke about the provision in negative terms, finding it 'pointless' and 'something to get through'. They did not consider that it had helped them in their personal development or to carry out their job more effectively. Two airmen saw the provision as a refresher course, or a course to top-up their existing skills, and one made the point that provision is generally too short to make much of a difference.

Improvements in literacy and numeracy

Eleven of the airmen considered that at least some of their literacy and numeracy skills had improved since joining the RAF, although only one put this down to the educational provision. Generally it was thought that **literacy and numeracy developed as a result of using and practising these skills**. Nine airmen mentioned that their **speaking and listening skills had improved the most**, probably because oral communication is such a central feature of their everyday life. One airman joined the Service with only a minimal level of literacy: 'I'll tell you honestly, when I left school I couldn't read at all, and now I can actually read'. His reading significantly improved during a period when he was injured, having received intensive one-to-one sessions with the Station's SpLD advisor. This is evidence of effective provision for recruits with low levels of literacy and a high level of need for targeted support.

Most of those who did not report making use of the other literacy and numeracy skills to any great extent (including reading, writing, numeracy and ICT) did not consider that these skills had much improved. Two airmen who experienced particular difficulties with writing were frustrated by their lack of progress, and in one case this was despite having received a great deal of support and guidance from line managers.

Gaining qualifications

Of those who spoke positively about their provision, **five said they were proud of gaining a qualification in the RAF**, whether a Basic Skills or Key Skills qualification, or an Apprenticeship. All of these airmen were dyslexic. **Five airmen reported that they were not proud of the qualifications they had gained** and the remaining three were indifferent – 'not really bothered either way'.

It is striking that most airmen could not remember the qualifications they had gained, including their apprenticeships. All of the RAF Regimental Gunners took an apprenticeship in Public Services while they were at RAF Honington, although none could recall details. Only two of the Ground Trades Personnel could name the title of the Apprenticeship taken during Phase 2 and completed during productive service, and four were unsure or could not remember the title. One airman recalled that he was not even aware he was taking an Apprenticeship until the certificate arrived in the post. This suggests that many airmen do not attach a great deal of importance to these qualifications, and regard them as being 'all part of their job', alongside the trade-related qualifications they gain.

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Seeking further educational qualifications

During their early time in productive service, gaining additional Basic Skills or educational qualifications was a low priority for the airmen, particularly in the absence of any requirement to gain a L2 qualification for promotion. Whilst none of the airmen were looking to take any further educational qualifications at the time of interview, all 13 wanted to gain more professional qualifications related to their trade. These qualifications were viewed as beneficial to competency and effectiveness in that trade by the airmen and their line managers. Throughout the study every line manager reported that they would fully support any airman who requested to take further literacy and numeracy qualifications (whether a GCSE or L2 Adult literacy or numeracy test), and would attempt to make time for this within the busy working schedule. Line managers generally took the view that further qualifications would benefit the individual, and therefore, the organisation.

However, 10 of the airmen stated that they would like to gain more and higher Basic Skills qualifications if the opportunity arose later in their careers[204]. Eight reported that would like to gain a GCSE in both English and maths. Others expressed doubts as to whether there would be sufficient time to undertake a GCSE course given their intensive training pipeline, including preparation for, and actually being deployed out of area.

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[204] When the airmen were asked if they would like to take further Basic Skills qualifications 'within the near future', only four replied that they would and nine said that they would either take them at an unspecified later date or not at all.

7.7 Levels and uses of airmen's literacy and numeracy skills

Introduction

This section presents evidence of the perceptions of airmen and their line managers on airmen's literacy and numeracy skills, and of the use of these skills in trades.

Main Findings

There was a significant correspondence between the assessment by airmen and line managers of airmen's basic skill competencies, although line managers found it difficult to form an assessment about maths in particular, and also ICT, reading and writing. The degree of correspondence would suggest that the observations of both airmen and line manages are governed by similar criteria.

All line managers agreed that Speaking and Listening were the two most important skills, and these were also the skills that, alone amongst the literacy and numeracy skills, were regarded as essential or important by airmen in all trades. This provides further evidence that communication is central to operational effectiveness, and points towards the benefits that might follow from reviewing and expanding opportunities for recruits to improve their speaking and listening skills.

Assessments of airmen's literacy and numeracy skills

During interviews the 13 airmen and their line managers were asked to judge the levels of the airmen's literacy and numeracy using a points system (Excellent = 4; Good = 3; OK = 2; and Poor = 1). Although these judgements are subjective and provide only a rough estimation of competencies and capabilities, the exercise highlights what are regarded as strengths and weaknesses within airmen's literacy and numeracy, and points towards those in need of development. It also reveals which literacy and numeracy skills were most commonly and most rarely used in the airmen's jobs.

Line managers found it difficult to make an accurate judgement about airmen's levels of maths, and, to a lesser extent, their reading and writing, because these were not often observed in the context of airmen carrying out daily jobs. Skills such as listening were difficult to grade because they are not so obviously 'visible' as others such as writing.

As Table 7.5 illustrates, Speaking, Listening and ICT were the skills in which the airmen in this sample[205] rated themselves most highly.

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[205] It should be emphasised that the sample is not representative of all the RAF trades, and, in particular, includes a significant number of recruits from the Regimental Gunners

Table 7.5: Airmen's assessment of their literacy and numeracy competencies

Grade	Speaking	Listening	Reading	Writing	Maths	ICT
Excellent	2 (8 points)	3 (12 points)	1 (4 points)	1 (4 points)	0 (0 points)	1 (4 points)
Good	7 (21 points)	4 (12 points)	5 (15 points)	2 (6 points)	3 (9 points)	7 (21 points)
OK	4 (8 points)	6 (12 points)	4 (8 points)	6 (12 points)	6 (12 points)	5 (10 points)
Poor	0	0	3 (3 points)	4 (4 points)	4 (4 points)	0 (0 points)
Total points	37	36	30	26	25	35

Speaking and listening were most highly rated (37 and 36 points respectively), followed by ICT (35), Reading (30), Writing (26) and Maths (25).

Line managers for 11 of the 13 airmen evaluated the airmen's skills. As Table 7.6 demonstrates, there was **a high correspondence between the responses of airmen and line managers. Speaking and listening were ranked highest** (30 and 29 points respectively) and maths was rated lowest (9), although 7 of the 11 managers had insufficient evidence of airmen's use of maths to be able to make a judgement.

Table 7.6: Line managers' assessment of airmen's BS competencies

Grade	Speaking	Listening	Reading	Writing	Maths	ICT
Excellent	2 (8 points)	2 (8 points)	1 (4 points)	0	0	1 (4 points)
Good	4 (12 points)	5 (15 points)	3 (9 points)	2 (6 points)	1 (3 points)	3 (9 points)
OK	5 (10 points)	3 (6 points)	3 (6 points)	3 (6 points)	3 (6 points)	2 (4 points)
Poor	0	0	0	2 (2 points)	0	0
Total points	30	29	19	14	9	17

The literacy and numeracy skills that managers found most difficult to assess were maths, ICT, reading and writing, suggesting that the majority of airmen in this sample used these skills intermittently or rarely, or that they did not form a significant part of their jobs, or that, if they did, they were less easily identified.

All line managers emphasised that Speaking and Listening were the two most important skills. As one Officer put it: 'Communication is the key to everything that we do.'

Uses of literacy and numeracy in trades

Airmen and their line managers were also asked how important each basic skill was in each RAF trade. **Speaking and Listening were the only skills regarded as essential or important by all trades represented in the sample, whilst reading and writing were regarded as not very important by airmen in four trades** (Table 7.7, Appendix A).

This exercise identified what may be significant differences in literacy and numeracy demands within trades: for example, two MT Drivers, one working as a 'blue' (administrative side) and one as a 'green' (military side) rated the importance of literacy and numeracy skills differently as their roles, duties and responsibilities required a different set of basic skills[206]. It should also be emphasised that the profile presented here is a 'snapshot'; the basic skills that are important for one airman today, working on one trade, may be less important tomorrow, after moving to another trade. This suggests that, to the extent that this is practicable, provision should be responsive to the variety of literacy and numeracy demands as these vary by trade and rank.

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[206] For example, the 'green' driver said he needed to write pre-task reports on the computer and work out the weight of military equipment to be transported around the country. The 'blue' drivers had more of a 'chauffeuring' role. This is not to suggest that both trades do not require sound literacy and numeracy skills.

7.8 Scale and support for SpLD

Introduction

This section explores the scale and assessment of SpLD, dyslexia in particular, and the response of the RAF.

The RAF policy on SpLDs is that SpLD are not regarded by the Service as an impediment to an airman's career. Individuals identified as being at risk of having one of four SpLD are offered immediate support[207]. Trained Service personnel will interview and test for dyslexia, using the DAST. Depending on the result of this test, individuals are referred to an Educational Psychologist for a diagnosis, as required by tri-Service policy[208].

There are no internationally accepted screening tests for dyscalculia or dyspraxia. Although Meares-Irlen syndrome has a screening test, it is expensive and does not always yield conclusive results[209].

Although the majority of airmen with SpLD receive support in Phase 1, some cases are not identified until Phase 2 or productive service. This may be because airmen's coping strategies are sufficient for the demands placed upon them during the earlier stages of training, and that it is not until the later stages in their career that these strategies cease to be adequate for operational effectiveness. There is also the possibility, however, that the tests used cannot be guaranteed to provide an accurate diagnosis of a SpLD in every case without exception.

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[207] Dyslexia, dyscalculia, dyspraxia and Meares-Irlen syndrome.

[208] The cost was reported as about £450.

[209] It was stressed that there are limited funds available for this, and the RAF use Colorimeter testing rather than Meares-Irlen as a cost saving measure.

Main Findings

It is clear that, as an organisation, the RAF is extremely tolerant and understanding of dyslexia, and provides airmen with first class support. We identified many examples, including a line manager who, though severely dyslexic himself, had received a great deal of support and reached the rank of Corporal a few years ahead of the norm, providing evidence of the RAF position that SpLD should not be an impediment to a career in the organisation.

There might, however, be a point at which dyslexia can represent a barrier to further promotion for some individuals. In the same case reported here, the line manager of the Corporal reported that he thought it unlikely that she would rise any further through the ranks because 'she would not have enough time to write reports when she reached the rank of Sergeant.' Whether or not the line manager is correct, the question arises about the circumstances, if any, in which dyslexia or any other SpLD becomes an obstacle to further promotion.

Armed Forces policy states that SpLDs and literacy and numeracy skills should be treated and addressed as separate issues, a position endorsed by the RAF. Clearly, when the cause of a difficulty is a SpLD, then, even if the outcome is a poor level of basic skills, the priority is to respond to the cause and to provide strategies that enable individuals to become operationally effective. But equally, since, especially amongst those with very low levels of literacy and numeracy, there is likely to be a close relationship between some SpLD – e.g. dyslexia – and some basic skills – e.g. literacy – there is a question about the rationale of treating SpLD and literacy and numeracy skills as wholly separate and discrete.

The scale of SpLD

Taken as a whole, **there is a comparatively low incidence of dyslexia in the RAF**. Data suggest that fewer than 5% of entrants are identified by an Educational Psychologist as requiring SpLD support, as outlined in the tri-Service and RAF policy[210]. (However, there is also prima facie evidence of an increase in the number of airmen from RAF Halton with SpLDs:[211] in the opinion of one source, an estimated 30% increase in the number of airmen referred to her turned out to be dyslexic in the last year – 80% of those she tested (using the DAST) turned out to be dyslexic[212].)

In the sample for the final stage of the study, **eight of the 13 airmen had some form of dyslexia, ranging from mild to severe** (three airmen). Five airmen reported that their

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[210]Data from HQ 22 Training Group, using the DAST test. There are, however, a number of entrants who are tested for dyslexia, but who do not meet the criteria required for a report from an Educational Psychologist; these entrants are supported by the SpLD Advisors within the Service. In this connection, it is worth noting the views of one specialist tutor at RAF Halton, that 15% of the intake was dyslexic, and two Key Skills instructors at RAF Honington, that the incidence of dyslexia was between 15% and 20%.

[211] This may be explained by the increasing efficiency of the system of identification.

[212] A PLA, who had been working for 3.5 years and had seen more in the last year than in her previous 2.5 years. Whilst not based at Halton, she was receiving recruits who had previously been located there. (The PLA would only see personnel outside the training system.)

SpLD had been diagnosed prior to joining the RAF. Of the remaining three, the dyslexia of the RAF Regimental Gunner was confirmed during Phase 1 training when he reported having literacy problems during educational provision. The other two airmen had passed through RAF Halton without their dyslexia being picked up; in one case (Airman 4) dyslexia came to light during Phase 2, and in the other (Airman 7) dyslexia was not diagnosed until the airmen began to struggle with his administrative duties during productive service. Although Airman 4's line manager reported that he could not record a statement in written form, the airman had passed Key Skills in Communication Skills at L1. Although an Educational Psychologist diagnosed Airman 7's reading age as 7.5 during his productive service, he had gained Basic Skills Literacy at L1 at RAF Halton[213].

Once dyslexia had been formally diagnosed, **all airmen received in-depth and ongoing support**: in the case of Airman 11, from the SpLD adviser at RAF Honington, and from peers once in productive service; for Airman 4, in Phase 2 and whilst in productive service; and for Airman 7 support was readily given as soon as his dyslexia became apparent[214]. One airman with dyslexia and poor writing skills described the extensive help he both required and received:

> *The instructors were aware of my dyslexia, so any time I did write, if they didn't understand the answer to a question that I'd written, they would come back to me and say I don't understand what you are meaning by this, can you explain it to me? And I'd say what I meant by this...Right, I've got you now, that is correct. And they'd go back and mark it. So even though, you know, the writing and everything was different it didn't affect [the grade] at all.*

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[213] Both Airman 4 and 11 had passed Key Skills in Communication Skills at L1.
[214] The line manager of Airman 7 in Stage 2 revealed that he had only recently picked up learning and training issues on the morning that the interview was scheduled, and was unaware that these might be related to dyslexia.

7.9 Operational Effectiveness

Introduction

One objective for this study is to explore the relationship between literacy, numeracy and the operational effectiveness of Service personnel. This section describes the perceptions of operational effectiveness on the part of the sample of airmen and their line manages, and identifies the impact on operational effectiveness of literacy, numeracy and SpLD.

12 of the sample of airmen in this study were regarded by the RAF as operationally effective, having completed their Trade-Ability Tests (TATs)[215]. TATs are awarded before an airman reaches the rank of SAC, and individuals who are successful are deemed to have achieved the operational standards laid down for their particular trade. What follows is a detailed exploration of judgements about operational effectiveness, and the extent to which the requirements of operational effectiveness differ within and between trades.

Main Findings

The evidence from the sample of interviewees suggests that literacy and numeracy skills are regarded as at least as important – if not more important – to operational effectiveness in the RAF as compared with the other two Services.

Speaking and listening again feature as the literacy and numeracy skills most commonly valued by airmen and as most important for operational effectiveness. Reading and writing were also frequently singled out.

One reason why SpLD and poor basic skills are relevant to operational effectiveness is that they can impede the scope for acting independently and without supervision. This raises the question of how far airmen can expect to rise in the ranks without their SpLD or poor basic skills becoming an obstacle to further promotion. At the same time, RAF policy stipulates that all reasonable adjustments and coping strategies should be supplied with the requirements of operational effectiveness and safety taken into account. If these requirements are unmet the adjustments and strategies are not considered reasonable and cannot be used. This suggests an alternative understanding of the issue as being less about promotion as such and more about whether the policy is correctly implemented by Line Managers and Training Schools.

General findings

Trainees and line managers were asked about their perceptions of the importance to operational effectiveness across the three Services of a range of attributes and skills. (Extended findings from the 13 airmen and their line managers are presented in Table 7.8, Appendix A.) Looking first at general attributes and skills less closely related to literacy and numeracy, **those judged as most important for operational effectiveness in the RAF,**

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[215] One airmen had voluntarily withdrawn from their Apprenticeship and is currently attempting to re-take his TATs.

and also ranked more highly in the RAF than in the other two Services, were, in order:

1 Confidence
2 =   Having passed their trade training
2 =   Flexibility and thinking quickly
4   Mental toughness.[216]

Looking at the 10 categories of literacy and numeracy skills, those most valued and judged necessary to be operationally effective in the RAF, and also ranked more highly than in the RN and Army, were, in order:

1   Be able to understand orders and instructions
2=   Be able to learn quickly
2=   Competent at writing
2=   Competent at reading
5   Competent at maths/numbers

This suggests that, for some trainees and line managers in the RAF, the majority of literacy and numeracy are perceived as being more important for operational effectiveness than they are in the other two Services. The four most frequently mentioned literacy and numeracy skills in the RAF were Speaking, Listening (including comprehension), Reading and Writing. And out of the 15 airmen and line managers asked about the part played by basic skills in operational effectiveness, 11 judged that they played a large part, whilst four judged that they played a relatively minor part (see also Table 7.7, Appendix A).

There was **a high degree of congruence between line managers and airmen, in their judgements of the key components of operational effectiveness** (see Table 7.9, Appendix A). Looking at the categories less closely related to basic skills, responses from line managers and airmen varied by more than 15 percentage points in four cases:

- being mentally tough (line managers had lower evaluations than airmen)
- determined to succeed (line managers had lower evaluations than airmen)
- committed to your team (line managers had lower evaluations than airmen)
- and being experienced in own trade (line managers had higher evaluations than airmen).

On literacy and numeracy skills[217], line managers gave greater weight than airmen to competence in reading, writing and maths, ICT, and 'being able to understand

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[216] TATs are not included in this list, being unique to the RAF; but all personnel must pass TATs if they are to be considered operationally effective in the RAF.
[217] The literacy and numeracy skills elements were: 'be competent at writing'; 'be competent at reading'; 'be competent at maths/numbers'; 'be competent at mental arithmetic'; 'be competent with computers'; 'be confident at talking to all ranks'; 'be able to talk in front of groups'; 'be a good listener'; 'be able to understand orders and instructions'; 'be able to give and pass on orders and instructions'.

instructions'. On the other hand, airmen judged 'confident to talk to all ranks', 'ability to talk to groups' and 'ability to give and pass on orders and instructions' as being more important than their line managers did. This suggests that airmen place greater emphasis on oral communication as compared with Officers and NCOs, and less on other areas of literacy and numeracy, including listening.

The four literacy and numeracy skills most commonly thought to contribute to an airman's operational effectiveness were speaking, listening, reading and writing. The extract, which follows, from an interview with the line manager of Airman 7 who worked in Supply, provides an example of how poor skills in speaking and listening can compromise operational effectiveness:

> *It's [his speaking and listening] very hit and miss. He could answer the phone and get that message correct, and then the next time he answers it he will get it totally wrong. There is a clear problem... If he took a phone call for you, you would have the basic details of the person's name or telephone number missing. If you ask him to demand something he could put in the wrong section ref. So it's the total wrong item.*

Table 7.10, Appendix A, gives details of perceptions of attributes and skills involved in operational effectiveness on the part of RAF Regimental Gunners and Ground Trades Personnel.

As might be expected, RAF Regimental Gunners were more likely to identify the general attributes of physical fitness and mental toughness, resilience, determination and commitment as important for operational effectiveness than were airmen working in ground trades. Ground Trades personnel more commonly rated reading, writing and maths as important for operational effectiveness than members of the RAF Regiment.

Both sets of airmen thought that sound speaking and listening skills were particularly important for operational effectiveness; indeed, listening was the most frequently cited literacy and numeracy skills by the RAF Regimental Gunners (both trainees and line managers) and most commonly regarded as important for operational effectiveness.

Turning to consider how these attributes and skills are regarded in relation to operational effectiveness, by the two trades of RAF Police and Medical Assistant on the one hand, and, on the other, the three ground trades (MT driver, movement and logistics and supply), this study found that literacy and numeracy skills were particularly important to the two trades of RAF Police and Medical Assistant. Nevertheless it should be still be noted that there are many specialisms within these trades, and that the literacy and numeracy skills required will vary according to context (see Table 7.11, Appendix A)[218].

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[218] For example, the role of RAF Police Dog handler has a specification and set of basic skills demands very different from those that apply to a Policeman specialising in forensics or counter intelligence.

Although **speaking and listening, together with reading and writing, were regarded as important to operational effectiveness** maths was of lesser importance for RAF Police and Medical Personnel compared to how it is perceived by the other three grounds trades.

All interviewees were asked if there were any attributes or skills not included on the list that they considered elements of operational effectiveness. The most frequently mentioned attribute was common sense (15 responses from a total of 24 airmen and Officer or NCOs). Two line managers also identified the ability to perform tasks without supervision, which includes the competence, preparedness and ability to act effectively without having to be supported or checked up:

> *[Being operationally effective] means that [an airman] can go into a theatre, like Afghanistan, and work on his own, and not be checked up on, and having one to one, because you are down to your bare minimum manning when you are in those operations.*

Judgements of airmen's OE: airmen and line managers

Six of the 11 Officers and NCOs[219] unequivocally evaluated the airmen's literacy and numeracy skills as good enough to carry out their roles and duties effectively and, although the line managers of Airmen 4 and 11 were less definitive, they nevertheless judged them to be operationally effective as long as they continued to receive support. The line manager of Airman 8 stated that although this RAF Regimental Gunner was not currently technically operationally, he would be once a few minor points were 'ironed out'. Only one airman, Airman 7, was considered by two line managers to be not operationally effective, despite the fact that he had passed his TATs. Both managers put this down to SpLD or weak literacy and numeracy skills, but a further reason was a **lack of independence**:

> *Well I would say, especially if you are going out of area, which you can do in a war zone situation, people in those places have not got the time to afford what I'd say we've afforded [name of airman], by trying to have constant one on ones with him. By going out of area you cannot afford that one on one situation.*

Twelve of the 13 airman (including Airmen 4, 7 and 11) thought that their level of literacy and numeracy skills was good enough to carry out their current roles and duties effectively, although Airmen 4 and 11 acknowledged that this was only because of the support they received for their weak literacy skills, and they both realised that their literacy skills would have to improve considerably if they were to gain promotion. Airman 8 was the only participant to report that his basic skills were not good enough to carry out his duties.

In summary, 12 of the 13 airmen reported that they were operationally effective. Line managers, on the other hand, considered that nine were clearly operationally effective; two were close to the borderline (4 and 11); one would first need to make a number of minor improvements (8); and one (7) was clearly not operationally effective.

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[219] Two line managers were commenting on Airman 7.

Impact of SpLD and basic skills on operational effectiveness

In this section we give examples of the impact of SpLD and literacy and numeracy skills on operational effectiveness, using the cases of airmen 4 and 11.

Airman 4 (RAF Policeman)

Airman 4 worked as an RAF policeman and was severely dyslexic. Despite three line managers reporting that he had many of the qualities to make an excellent policeman, his writing skills were weak, and as a result he needed a lot of support. When having to submit a handwritten report from his notes, he would first write on a computer, where he could use the spell-check facility. He would also enlist the help of colleagues, before submitting it to his line manager, who would then send it back with corrections (a process that might be repeated more than once). These are all considered to be reasonable remediations under the SpLD policy; at the same time the airman reported – and the line managers agreed – that recording information in the daily occurrence book would take him far longer, and require more assistance, than other policemen.

All of this was excessively time consuming, and the airman realised that it was unsustainable in the long term, and would have an effect on his promotion prospects. Although he received a great deal of understanding and support, he was unable to develop sufficient coping strategies, and one of his line managers spoke of difficulties when it came to taking personal statements, especially when deployed out of area and not always having recourse to a computer.

This raises the question of whether and how far the airmen can be considered operationally effective; with reasonable support he is, but without it, and without access to computing facilities his effectiveness is in some doubt.

Airman 11 (RAF Regimental Gunner)

Airman 11 was an RAF Regimental Gunner. As with Airman 4, his line manager reported that he possessed many of the attributes that could eventually make him a first class Airman. Indeed, his Officer predicted that he would be recommended for promotion to Lance Corporal within a year. However, like Airman 4, he is severely dyslexic and this had a significant impact on his literacy skills. He admitted that he had struggled to read when he joined the Service, but following intensive one-to-one sessions with the SpLD advisor at RAF Honington he was taught to read elementary texts, although he was not able to write more than a few lines. At the time of interview he had signed up for a sniper's course but was anxious that he would not be able to record written information accurately in a log. He also reported that weak writing skills would lead him to record vehicle registration plates inaccurately. Before deployment his line manager was unaware of his SpLD or literacy and numeracy needs, but during operational deployment he discovered the low level of writing:

> An example is he was on listening to the radio, and he would often ask one of the other lads to write something for him. Now there's no issue in that, he's effective in doing that, however he won't always be in a position where he's got a lad to write stuff down for him, so in that sense he is struggling.

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Nevertheless, his line manager judged this airman to be operationally effective:

> *Put it like this, he was operationally effective out in theatre, everything I asked him to do he did, that's why I'm saying he's operationally effective. However, there are situations where he won't have someone with him, and it may be an issue in the future.*

As with Airman 4 a question arises about Airman 11's operational effectiveness. This is not in doubt when he has the option of support, and there is a line manager present who recognises and is responsive to any literacy needs. But when these conditions are not in place, and Airman 11 would have to act independently, he may not always be able to carry out writing-related tasks in a manner consistent with operational effectiveness. The question is therefore whether and how far the capacity to act independently is a condition of operational effectiveness.

7.10 Career progression

Introduction

This section looks at career progression, including the role of basic skills and SpLD, the views of airmen and line managers, the relationship between basic skills and seniority, and the impact of a career in the RAF on personal development.

> ### Main Findings
>
> All line managers considered literacy and numeracy skills important to operational effectiveness and for making a career in the RAF. With the partial exception of those with severe dyslexia, the airmen did not consider that their literacy and numeracy skills had an effect on their careers, in the sense that they considered their existing skills levels as sufficient for their roles and responsibilities.
>
> The RAF is highly supportive of staff with SpLD throughout their careers. At the same time, it remains an absolute requirement that all individuals must be operationally effective in all roles and at all ranks, and there is some evidence that, with increasing seniority, this can become more difficult for those with severe SpLD or literacy and numeracy needs.
>
> This chapter provides further evidence on how skills are related: low levels of literacy and numeracy can constrain the ability to act independently and without supervision; poor writing can affect the capacity to listen which in turn can affect confidence. This suggests the importance of a range of sound basic skills, including speaking and listening, as amongst the prerequisites for confident and independent airmen.

Making a career in the RAF

Recruits initially sign up for nine years of service, and this can be extended to 12 years, subject to satisfactory performance[220]. However, airmen can also leave the Service early by mutual consent, for instance, on compassionate grounds.

At the final stage of this study, all recruits had reached the rank of SAC or higher[221].

There are numerous pathways or trajectories that an airman can pursue in the RAF and many trades offer a variety of specialist options. Two airmen could be in the same trade and yet pursue two quite different careers.

All line managers reported their role as facilitating career development, but also stressed that, in order to make a career in the RAF, the individual has to take the initiative and put themselves forward, including those who need to improve their educational qualifications.

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[220] This can be followed by a further 3 years extension, depending on acceptable performance and promotion.
[221] Promotion in the RAF Regiment is usually automatic unless a recruit has been formally warned or charged. In the trades-related professions, recruits have to pass a Trade-Ability Test (TAT) before being awarded the rank of SAC.

In keeping with the **highly transient population that is a characteristic across all the Services**, the majority of airmen are expected to move Station every two or three years[222].

Appraisals

The formal time and space within each Service for career evaluation is the mid-term (i.e. six-month) and full annual, appraisal. Every line manager confirmed that this was an important event in the life of an airman, providing him/her with a formal opportunity to review their career in the RAF, and their line manager with an opportunity to provide career advice and guidance[223] [224].

Educational courses and qualifications are seldom mentioned during an appraisal, and only when a particular issue arises or airmen mention that they would like to pursue a further qualification such as a GCSE. The appraisal process, however, is perhaps an appropriate point at which to review airmen's educational qualifications, particularly as from April 2012, they will be required to have gained Basic Skills qualifications at L2 before they can attend a course for promotion to Corporal (Junior Management and Leadership Course [JMCL]).

The impact of SpLDs on career progression

The RAF Policy on Support for SpLD (2011) states that it is written 'against a background of **SpLD needs being no impediment to a career in the RAF**' (Section 5). All recruits are screened on entry for SpLD, and if airmen are found to have a SpLD it is explained that 'it will not stop them having a career'[225]. While **the RAF is tolerant, accommodating and supportive to personnel with a SpLD** it was also stressed that:

> *We [the RAF] are extremely firm in the respect that if the individual, due to their SpLD, cannot meet operational, cannot operate effectively, then you may retrain them to a branch or trade where they can operate effectively, or a case may be made for dismissal from the service.*

The RAF Literacy and Numeracy Policy (2011, section 1) states that 'sound literacy and numeracy skills help airmen, amongst other things to "take advantage of career opportunities"'. This may be taken to imply that weak or poor literacy and numeracy skills can hinder career development.

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[222] Although this is trade related.

[223] Most annual appraisals for SACs are carried out by sergeants, who act as the first reporting officer (RO), and the flight sergeant who acts as the second RO. Corporals, who know the airmen on a more intimate basis, are usually asked to supply the first RO with a short written summary. The six-month report is more informal and formative, while the annual appraisal is summative, with the information included on the airman's JPA under the headings of 'performance' and 'potential'. In essence, the six-month appraisal identifies the airman's strengths and suggests ways of improving any weaknesses, and the annual appraisal reports on what progress has been made.

[224] Five airmen reported having a mid-term appraisal; five had received an annual appraisal and three were unsure or could not remember. Those who had received a full appraisal, with a face-to-face interview, said that they found it extremely helpful, particularly when targets were set on how to improve their performance. However, some of them had had an appraisal whilst on deployment and this was less useful if the NCO did not know them particularly well.

[225] POC interview in April 2011.

Airmen's views

Nine airmen reported that their literacy and numeracy skills had had no effect on their careers, in the sense that they considered that their **skills were already at a level that was sufficient for their roles and responsibilities**. However, **the three airmen with severe dyslexia and weak literacy and numeracy skills (Nos. 4, 7 and 11) were concerned about the effect on their career and promotion prospects**. They emphasised weaknesses in literacy, seen as compromising their ability to carry out present roles to an adequate standard. They considered that they may not be able to carry out their duties effectively if they gained promotion unless they continued to receive current levels of support, and they were unsure whether this would happen, especially if deployed out of area.

The three airmen were also aware that they would need to develop more effective coping strategies, but we could not find any evidence to suggest that they had managed to improve these during the time of their involvement in the study. The airmen themselves, for example, did not consider that their writing had improved, and this included Airman 4 (RAF Policeman) who had received extensive support from his peers and line managers.

Airman 11 (RAF Regimental Gunner) had poor writing skills and dyslexia, and he was particularly pessimistic about his chances of progressing beyond the rank of Corporal: 'I'll never make it to sergeant... It is all admin on computers... It's going to hold me back so much.'

Line managers' views

All 11 line managers said that literacy and numeracy skills were an important part of an overall package of skills, both for operational effectiveness and for airmen making a career in the RAF. Weak skills were seen as a likely obstacle to promotion. As one NCO said:

> *If your Basic Skills are there you'll do better in your job and basically you'll get promoted better. On write-ups you'll stand out better if you've got better skills... and the ones who are lacking some, I think they will stand out a little bit, because they'll struggle in their job a tiny bit.*

The line manager of Airman 4 thought he would struggle if he ever made it to the rank of Sergeant because 'you've got to be able to oversee other people's paperwork, and if you can't do it yourself it's going to affect him.'

Many Officers and NCOs stressed that good communication skills – and particularly oral communication – were of the first importance from the earliest stages. And an NCO could himself lose respect of those under his command if he showed poor levels of literacy and numeracy skills: 'He could lose credibility with the lads if he's gone up a rank and then his paperwork is not good.'

One NCO made the point that the ability to learn quickly[226] had a 'snowball effect'; that is, individuals would be trusted with more duties and responsibilities, and would gain experience at a faster rate, as compared with those who lacked this ability.

> The faster you learn stuff, the more experience you get and the more jobs you get, and the more jobs you get put on, the more experience you get and the quicker it is.

Effects of poor writing on listening skills

Poor writing (whilst note-taking, for example) may have an effect on other skills, including listening. This may arise if the effort given over to concentrating on the act of writing makes it more difficult to absorb information at the same time. Airman 11 commented:

> The biggest problem I've got is when I'm in a lesson and they'll be talking away, and writing on the board, and I'm writing that fast, and I am really slow... but when I actually look back on it I can't read any of it. If someone tells me something normally I remember it, but with this though, it's like I'm writing away and not listening to it, so I'm losing out both ends.

The same airman spoke of his difficulties with simultaneous writing and listening whilst on tour; his peers were often a great help but there may be occasions when he would have to work independently and without supervision.

Employability

Some airmen who possess sound literacy and numeracy skills may as a result be able to offer more to the Service, both because they are likely to require less in the way of training and support, and because they may be more flexible when it comes to the roles they are expected to undertake. The converse also applies, and the evidence suggests that some airmen within the sample were not offered particular jobs owing to their weak literacy and numeracy skills. In one example, in Logistics Movement, an airman was not asked to copy out manifests (orders) because it was judged that, with his poor writing skills, it would have taken him too long. And a line manager reported of a Regimental Gunner that he would in future not be assigned to work with signals or radios, again because of his poor writing.

What this suggests is that some recruits may become more or less employable depending on the level and range of their literacy and numeracy skills.

Literacy and numeracy skills and seniority

All airmen asked about the link between literacy, numeracy and promotion reported that **basic skills became increasingly important with increasing seniority**. This view was shared by line managers, who explained that with seniority airmen are required to assume higher levels of responsibility, to possess good administrative and communication skills,

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[226] One of the criteria discussed in relation to operational effectiveness.

including independent writing, and to undertake a wider range of mathematical calculations[227].

Three of the 11 airmen emphasised that good basic skills were necessary from the beginning of an RAF career. Three judged that their importance was most evident for those reaching the rank of Lance Corporal for RAF Regimental Gunners, and, in relation to Trades Personnel, four took a similar view for those promoted to the rank of Corporal. One line manager reported that it was at the rank of Sergeant that the significance of literacy and numeracy skills became especially apparent[228].

Career progression: an evaluation

The 13 airmen and their line managers were asked to evaluate how the airmen's careers were progressing. Table 7.12, Appendix A, summarises their responses.

Five airmen perceived that they were making excellent progress in their RAF career[229]; six, that they were making good progress, and two, that were making poor progress. Of these last two: the view of airman 10 should be seen in the context of his request to leave the Service on compassionate grounds; he otherwise appeared to be doing well, including when re-deployed. The second had experienced a disciplinary problem.

Of the line managers, five considered that the airmen under their command were making excellent progress, three reported good progress and three that it was poor.

With the exception of Airman 8 (injured at the time), all the RAF Regimental Gunners had been deployed on active service to Afghanistan, and Airman 9 had been on two tours. All were judged to have performed well.

Line managers commented on 11 airmen. Six were judged to have clear potential for promotion. One airman's career was 'on hold' owing to disciplinary issues and one airman was likely to be discharged within the year. The careers of the remaining three airmen (4, 7 and 11) were likely to be affected by dyslexia. Airmen 4 and 11 had the skills required to carry out their roles and duties; however, unless they adopted coping strategies in response to the literacy and numeracy skills-related features of their jobs, it was considered likely that the prospects for promotion of Airmen 4 and 11 would be limited. Airman 7 was judged by his two line managers to have weak literacy and numeracy skills, causing him to underperform in his job, and not to be operationally effective[230].

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[227] Depending on the trade.
[228] Trade: MT Driver.
[229] During the Stage 2 fieldwork, five airmen spoke of how they 'loved' their life in the RAF, and they appeared to regard their work as more of a vocation than a job.
[230] At the time of interview, he had withdrawn from his apprenticeship.

Personal development

All 13 airmen thought that they had undergone extensive personal development, attributing this to their experience in the RAF. The most frequently mentioned change was in levels of confidence,[231] especially relating to the ability to talk in front of large groups and communicate with a wide range of personnel – the latter in particular, an element of operational effectiveness. Other changes included having a more positive attitude, and becoming better organised, more independent, and more mature and responsible. Two RAF Regimental Gunners spoke of how much they changed during their deployment, with another saying that the RAF had made a man of him. Airman 11, an RAF Regimental Gunner, reported gaining an enthusiasm for life and a determination to succeed.

> *I've also changed in myself, as well, grown up, and I've had so many experiences now like, when I go back home you meet friends and they are still wearing the same trainers... when I go home tomorrow I'll be up at eight o'clock, and that's not me. My mum's like – what's going...?... I've learnt that if things knock you back, then… I've learnt so much, because you are in that military background you are not going to be beaten. Especially with 2 Squadron, they hammer it into you; they absolutely hammer it into you. And you do believe it, and it's such a good thing to have because there are so many people that are on the dole, and they don't have that, just that get up and go.*

There is some evidence from this study on how SpLD can affect confidence. Airman 7 considered that SpLD was a cause of loss of confidence, confidence being a key attribute of operational effectiveness. Another airman reported that dyslexia had affected his self-esteem and sense of worth; however, the sense of achievement stemming from his Key Skills provision, and the qualifications he gained, appeared to act as a catalyst for becoming determined to change himself.

> *Ever since I've had dyslexia I've always, I've always like downgraded myself, put myself down a bit. My mum was always saying it of me. And then from then on, when I passed out and done my key skills, from then on I thought well, I can do something about it, and I got a load of books and start reading.*

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[231] 10 of the 13 airman mentioned 'growth in confidence'; one of those who did not mention this explained that he was confident in the first place.

7.11 Conclusions and recommendations

In reaching the following conclusions it must be re-emphasised that the number of individuals joining the RAF with low levels of literacy and numeracy skills is extremely low, especially when compared with the number and proportion of recruits joining the Army with skills at Entry levels.

Conclusions

Literacy and numeracy provision

Basic Skills/Key Skills classes were highly successful at preparing airmen for the national Skills for Life and Key Skills assessments. The pass rates from this provision are impressive and usually over 95%.

The main objective of literacy and numeracy classes is to equip personnel with the knowledge and skills that enable them to function effectively in an operational environment. In this sense, the emphasis is on training recruits rather than on providing them with an education, and this should be seen as part of the context in which literacy and numeracy is delivered in the RAF.

Qualifications

There is some evidence that the qualifications gained by airmen do not always provide an accurate picture of their capabilities or functionality. However, Functional Skills will be fully introduced in September 2011, and it is widely thought that this will represent an improvement over existing Basic Skills and Key Skills provision, in respect of equipping airmen with more sustainable and transferable skills.

Linking Basic Skills qualifications to promotion acts to motivate personnel to acquire these qualifications, a link made in the RN and Army, but not in the RAF, excepting the requirement (being phased in) that personnel are required to have a minimum L2 literacy and numeracy qualification before joining the Junior Management Leadership Course (JMLC). This may help to explain why the RAF personnel included in this study were less concerned about taking Basic Skills and Key Skills provision and gaining qualifications than personnel in the other services.

During the initial phases of productive service, thoughts of gaining additional literacy and numeracy educational qualifications were a low priority for airmen, who were more interested in attending military professional courses to enhance their careers. However, without appropriate literacy and numeracy skills, attendance and good performance on these courses can be a challenge for some individuals. This is recognised by the RAF.

Skills gain and the Service environment

The vast majority of Service personnel progress by at least one level of literacy or numeracy in less than 20 hours of provision. Whilst the conditions for literacy and numeracy provision in the RAF are highly distinctive, duration is a key theme that arises for all provision that is short and intensive, no matter in what context it is delivered.

Previous evidence from the US and UK has suggested that learners typically require in excess of 100 hours of learning related activity[232] [233] in order to make significant learning progress. A key question then arises as to whether provision under 20 hours can suffice for significant and sustained learning progress for all learners? That question applies to all provision of this duration. But there are also a series of important questions arising from the RAF context, in particular: are the conditions that characterise the culture and context of the RAF especially supportive of literacy and numeracy learning over short and intensive periods? Are levels of recruits' motivation and commitment unusually high and conducive to learning that is both intensive and sustainable? It would be valuable to explore further the impact on learners' receptivity and readiness to learn of such factors as: the high expectations of recruits, an organisation that prioritises training and development, and a universal expectation of training that is intensive and demanding.

Impact of provision and changes in levels of literacy and numeracy

About half of the airmen reported that Basic Skills/Key Skills provision had helped them in their personal and professional lives, whilst the remaining half reported their experience of provision in negative terms.

The most frequently mentioned benefit of the airmen's educational provision was the confidence gained in speaking by giving presentations as part of their Key Skills' classes.

Eleven airmen considered that their literacy and numeracy skills had improved during their time in the RAF, although only one put this down to their educational provision. Most attributed any development in literacy and numeracy skills to their use and practice in the course of undertaking their roles and duties. This suggests that the most effective means of learning and improving basic skills happens 'on the job'.

Line managers' support

Line managers became interested in an airman's literacy and numeracy skills only if a problem relating to these skills presented itself. However they were fully supportive of airmen who sought to take further literacy and numeracy qualifications, and would attempt to make time for this within the busy working schedule. In general, line managers regarded further educational qualifications as a benefit for the individual, and therefore, the organisation.

The 'eight year rule'

Line managers were generally unaware of the eight-year rule, whereby airmen were required to gain literacy and numeracy qualifications at L2 within eight years of joining the Service. This suggests that some policies are not always effectively conveyed to those working on the ground.

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[232] 'Learning related activity' includes time spent in a formal learning environment (a classroom, for example) together with time spent on planned activities related to the provision – self study for example.
[233] Studies from the US suggest that 100 hours of *instruction* is the minimum required to progress by one General Education Development (GED) Test level (the American high-school equivalency test).

Operational Effectiveness

The literacy and numeracy skills required for operational effectiveness vary between and within trades. Nevertheless, and in line with the RAF policy, sound levels of literacy and numeracy were clearly found to contribute to the capacity of airmen to cope with the demands of their roles.

Of the ten literacy and numeracy elements discussed in this report those judged as most important in making airman operationally effective were: speaking, listening, reading and writing. Listening was regarded as the most important of these; this perhaps reflects on the junior status of the sample, since speaking becomes more important when personnel assume a command or supervisory role.

The evidence suggests that the airmen and line managers interviewed in this study perceive that literacy and numeracy skills in the RAF play a more important role in operational effectiveness than in the other two Services, particularly the Army. This may be because the trades in this sample required relatively higher levels of literacy and numeracy, even though there are significant variations between and within them.

Both airmen and their line managers rated Speaking and Listening as the most important and widely used basic skills. Maths was perceived as the least used basic skill in the early stages of an airman's career in the particular trades within the sample.

Good and improving levels of literacy and numeracy ensure that personnel are more likely to be operationally effective and employable within the organisation, providing some of the skills that underpin and support the qualities and competencies assessed in the Aptitude tests.

Employability

Some airmen who possess sound literacy and numeracy skills may as a result be able to offer more to the Service, both because they are likely to require less in the way of training and support, and because they may be more flexible when it comes to the roles they are expected to undertake. This suggests is that some staff may become more or less employable depending on the level and range of their literacy and numeracy skills.

SpLD

Eight of the sample of 13 airmen were dyslexic and three were severely dyslexic.

As an organisation, the RAF is highly tolerant and understanding of airmen with SpLD, and consistently provided excellent support.

There is a question about the usefulness of regarding literacy and numeracy skills and SpLD as entirely separate. There are cases in which, whilst SpLD may be the cause, weak basic skills may also be the outcome, as when an airman with dyslexia struggles with writing, or with writing and listening simultaneously.

SpLD and/or weak literacy and numeracy may compromise an airman's ability to become operationally effective, although RAF policy stipulates that all reasonable adjustments and coping strategies should be supplied with the requirements of operational effectiveness and safety taken into account.

Careers

The importance of sound literacy and numeracy skills increases as personnel are promoted. Most line managers reported that the rank of Corporal represented a point at which the need for good literacy and numeracy skills became more evident.

SpLD and/or weak literacy and numeracy skills may represent an obstacle to career progression.

Best Books

At RAF Honington there appears to be disproportionate effect on trainees with SpLD and/or weak literacy and numeracy when it comes to copying notes from military classes into 'best books'. This is because it can take these trainees far longer than others to complete the task.

Record keeping

Record keeping of literacy and numeracy skills needs to be improved. Many in the RAF reported that the JPA is too inaccessible and not a suitable system on which to store airmen's basic skills qualifications[234]. At the present time, however, the JPA is the only vehicle available to the RAF.

Recommendations

Support for SpLDs

Whilst all Services provide effective support for recruits with SpLDs, the RAF in particular provides a model of good practice in how to support SpLDs, and this should serve as an example to other large employers with a workforce that includes a significant incidence of SpLDs.

Qualifications and promotion

Whilst it is essential to understand the different contexts in which the RAF and the RN operate, the skills profiles of recruits are sufficiently similar to allow for a further examination of the comparative effects of their respective approaches to promotion. This should be undertaken in order to assess the merits or otherwise of the RAF policy of not always linking qualifications to promotion.

Study skills

Many airmen would benefit from courses on Study Skills, including how to organise and structure activities, such as the portfolio assignments for NVQs. Currently, trainees with Specific Learning Difficulties are presented with strategies relevant to study skills, and

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[234] In comparison, the RN were happy with the way they used JPA as a record of sailor's education qualifications.

some of these are likely to be beneficial to other trainees. This offer could be integrated into general Functional Skills provision, or provided at Education Centres.

A further option is a course providing strategies on how take notes, the most commonly mentioned literacy practice in the RAF. It appears that guidance is currently offered on an informal basis, although no airmen or NCOs reported being aware of the existence of a note-taking course.

Awareness of Learning Centres

A number of PLAs reported that better communications were needed to enable airmen to learn about the educational opportunities available on each station, and on the Defence Learning Portal. Whilst it is the job of the PLA to promote the Learning Centres and the provision provided by them, there is evidence that they can do more than they do currently.

Written assessments

When recruits first arrive at RAF Halton and RAF Honington they are required to complete a short piece of free writing, which educational tutors find useful for assessing literacy levels, and for gaining insights into potential SpLD. This process was repeated in some trades when airmen reach productive service. Line managers reported how useful this is, and it is recommended that this practice is extended across all trades.

Leaving interviews

Some airmen reported on how useful it was to have a formal end-of-phase discussion with their line manager about their performance during Phase 2 training. Areas discussed included the individual's strengths and weaknesses and career pathways. The RAF might consider the option of extending this practice more widely.

Line managers' awareness of L2 qualifications

From 2012 airmen will be required to attain L2 qualifications prior to attendance at JMLC, and promotion boards therefore need to know about the qualifications held by any potential Corporal.

Presentations

The ability to communicate clearly is a core skill in the RAF, and one of the principal benefits from Key Skills provision is learning presentation skills. If practical and resource constraints permit, the RAF might consider providing SACs with opportunities to give talks and presentations to other members of their section or flight, with a view to improving their speaking and listening skills and to help prepare them for promotion[235].

Role models

Data from the Army suggests that NCOs can play a significant role in influencing recruits' attitudes towards basic skills provision. RAF research in Stage 2 found that 12 out of the 15 airmen in the sample had a role model, and we believe that there is the potential for

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[235] Similar to the system used in the trade of Medical Assistant at RAF Halton, and the RAF Police.

significant benefits if respected NCOs are invited to give a formal talk to recruits about the importance of literacy and numeracy skills, and their use of these skills in their professional lives in the RAF.

Dispensations for airmen with poor literacy, numeracy and/or SpLD

At RAF Honington, trainees' with an identified SpLD may be given special, but limited, dispensation with writing up notes into 'best books'. Trainees at RAF Halton, who are required to attend evening classes in literacy and numeracy skills, might be relieved of some other 'admin' duties on these particular nights.

Chapter 8: Key Findings and Recommendations

8.1 Introduction

This chapter provides a summary of the key findings and recommendations that apply to all three Armed Forces.

Section 8.2 presents the key findings, and section 8.3 presents the recommendations. Findings and recommendations specific to each of the Services can be found in chapters 5-7.

8.2 Key Findings

Effectiveness of the Armed Forces Literacy and Numeracy Policy

In general, the Armed Forces Literacy and Numeracy Policy is successfully adhered to, and it has produced highly significant gains for individual Servicemen and women and the Services as a whole. The Armed Forces annually deliver a large number of nationally recognised literacy and numeracy qualifications, and the success rates are consistently high. There are structures for delivering literacy and numeracy to Service personnel at every stage of their career, and there is an effective whole organisation commitment to the implementation of the policy.

During the research period, all Services required personnel to attain literacy and numeracy levels of Entry Level 3 (EL3) before the start of Phase 2 training, Level 1 (L1) after three years in the Service and Level 2 (L2) by eight years in the Service. Although the rules relating to EL3 were understood, the qualification requirements for three years and eight years service were not widely known or implemented in any of the three Services. While the overwhelming majority of personnel do attain L1 qualifications inside three years, largely through training programmes, there was little evidence that soldiers, ratings or airman or their line managers were aware of the 'eight year' requirement, and the Services do not yet have a mechanism for enforcing it.

There remains a small but significant number of line managers who appear not to have wholly accepted the importance of literacy and numeracy skills for the personnel they are responsible for. Whilst examples are largely to be found in the Army Infantry, the importance of sound literacy and numeracy skills for all Service personnel is a message that continues to need to be widely communicated.

New recruits: profile and entry requirements

The Army has a far greater number of recruits with low levels of literacy and numeracy than either the RN or RAF; this helps to explain the differences in the scale of engagement and many of the distinctive features of provision that become apparent in any comparison between the three Services.

In 2010, 45% (about 3650 recruits, literacy) and 42% (about 3400 recruits, numeracy) of all new Army recruits were assessed at or below Entry Level 3 (EL3); the corresponding figures for the RN were 1% and 1% (approximately 25 recruits), and for the RAF 1% and 3% (about 30 and 90 recruits respectively)[236]. The RN has less than 100 recruits, and the RAF only 29, who are operating below Level 1 (L1) in both literacy and numeracy on entry, while for the Army the figure is in the region of 5,000.

The Armed Services have the capacity to recruit men and women with low levels of literacy and numeracy, and to develop their skills and talents to the point that they are both operationally effective and (more) employable within Service and other contexts. The Services demonstrate how a large employer can successfully fulfil this vital professional and socio-economic function, and the evidence confirms the merit of continuing (selectively) to recruit entrants with low level skills.

At the same time junior recruits are increasingly expected to make use of technical equipment and operate in environments that make demands on their management and decision making abilities. The question arises whether there is a case for *selectively* raising the minimum entry requirements in response to the extensive technical demands of some trades, particularly as these arise in the RN and RAF, but also where these feature in the Army.

A significant proportion of recruits are both initially assessed at Entry Level in literacy and numeracy and report having A*-C GCSE in English or maths. Some allowance should be made for errors associated with self-reporting, and for the fact that GCSE qualifications incorporate standards and purposes very different to those that apply to the process of Initial Assessment. Nevertheless, this raises a question about how far GCSE qualifications have led to literacy and numeracy gains, and how far these qualifications serve as a useful guide to the levels at which recruits are functioning on entry to the Army.

Characteristics of literacy and numeracy provision

Literacy and numeracy provision demonstrates how the Services have responded to the demands of national and Armed Forces policy on the one hand, and their own contexts and requirements on the other. These do not all pull in the same direction, and there is some evidence that Service and training requirements sometimes take precedence over what would best serve the learning related needs of recruits. Nevertheless, within the constraints that the Services are operating within, they provide a very largely positive example of literacy and numeracy provision in environments that are often intensely pressurised and uncongenial to education.

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[236] See Part 1 of this report, Ch. 3, Figure 3.1.

The different contexts for each Service lead to very different initial training regimes and the provision of literacy and numeracy qualifications after initial training is highly context specific. At the same time, all Services consider education as part of their 'duty of care' and ensure that recruits continue to have good access to literacy and numeracy provision throughout their careers in the Services.

Line managers across all Services were fully supportive of personnel who sought to take further literacy and numeracy qualifications, including GCSEs, and would attempt to make time for this within the busy working schedule. In general, line managers regarded further educational qualifications as a benefit for both the individual the organisation.

Impact of literacy and numeracy

There is conclusive evidence of the importance of literacy and numeracy for professional development and operational effectiveness, and the significance of these skills increases as soldiers are promoted and assume higher level responsibilities.

Literacy and numeracy provision is effective in supporting trainees to gain national qualifications, and this also provides opportunities for employment and career development both within the military and in the civilian world.

Pass rates in literacy and numeracy in all Services are impressive, whether in Basic Skills, Key Skills or Functional Skills. The vast majority of Service personnel progress by at least one level of literacy or numeracy, generally after a short period of time (often less than 20 hours).

Evidence on adult learning suggests that most learners require in excess of 100 hours of learning-related activity if they are to make significant and durable learning gains. Much of the Army, RN and RAF provision is much shorter than this. There is therefore a question about the extent to which achievement rates are accompanied by significant and functional learning gains. Qualifications are not always a reliable indicator of long term improvements in skills, and it is a challenge to produce these improvements in a short period of time. The issue is one of balancing the priorities of achieving qualifications and promoting sustainable learning progress.

The Services context has a large bearing on the effectiveness of provision. This context includes a close link between qualifications and promotion, and high expectations and levels of motivation amongst trainees, who operate in an environment in which short and intensive training is the norm. Evidence from this study suggests that an environment with these characteristics is likely to have a significant and positive effect on the receptivity and ability to learn and make learning progress over a shorter period than otherwise.

Qualifications: funding and promotion

Funding

In line with national policy, all literacy and numeracy courses are delivered free to all personnel. Although there are costs to the Services, they have also benefited from Government funding through the Skills for Life strategy. The previous service Train to Gain and the National Employers Service (NES) encouraged the delivery of literacy and numeracy in the workplace with minimum disruption to the employer.

The principal challenge for the Services will arise if and when the priorities of Government funding and the needs of the Services were to significantly diverge.

Promotion

In the Army and RN (and from April 2012 in the RAF), promotion is linked to trainees gaining specific levels of literacy and numeracy qualifications. This policy is well understood in both Services by soldiers, ratings and marines, together with their NCOs and line managers. There were a few exceptions: some Army recruits, particularly those serving in the Infantry, were not clear about the details of the levels of literacy and numeracy required for each rank; and some Royal Marines were focused on completing their training and their first deployment rather than any subsequent promotion.

Linking literacy and numeracy qualifications to promotion acts as a significant and effective incentive for personnel to achieve those qualifications. The link also serves to encourage line managers to support staff in pursuing these and further literacy and numeracy qualifications.

During the period of this study this link was not made in the RAF[237], which may help to explain why the RAF personnel included in this study were less concerned about taking Basic Skills and Key Skills provision and gaining qualifications than personnel in the other services. However, the emphasis in the RAF is on the psychometric testing of individuals' aptitudes in the context of assessing their ability to perform at the level required by their role and rank. It is the RAF position that, if qualifications are treated as a necessary condition of promotion, this could lead to the under-utilisation of some personnel; though lacking qualifications, they may possess the attributes and experience required by the role or rank for which they are to be considered. The tests, therefore, are designed to identify recruits' potential to perform at the operational level required, whether or not they possess the qualifications that would otherwise be expected of them.

There are similarities between the skills profiles of recruits in the RN and the RAF but also significant differences between their approaches to promotion.
Whilst it is essential to understand the different contexts in which the RN and the RAF operate, and any corresponding differences in the criteria for promotion, there are lessons to be learned from a comparison of the effects of their respective approaches.

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[237] There is one exception: the RAF is moving towards the requirement that personnel are required to have a minimum Level 2 literacy and numeracy qualification before joining the Junior Management Leadership Course (JMLC). Successful completion of the JMLC is a requirement for promotion to JNCO.

The Wolf Report regards the attainment of GCSE A*-C in maths and English as fundamental to employment and education prospects. By implication, the Report presents a significant challenge to all major employers, including the Services, in respect of the qualifications and literacy and numeracy levels their employees are – or should be - expected to attain. The Services have their own evidence of the suitability of the requirements set out in the Armed Forces Literacy and Numeracy Policy; for example, the L1 and L2 requirements in the Army stem from an extensive mapping of literacy and numeracy levels to the generic skills and tasks expected of Junior and Senior NCOs. This has been done with a focus on application to real-life scenarios & functionality. The wider scope of the GCSEs and theoretical nature of some areas of the maths GCSE course are beyond the Army requirements for specific jobs.

Changes in levels of literacy and numeracy

Over the course of the study, levels of literacy and numeracy amongst the sampled group significantly improved, and there were positive changes in how they reported on their skills and difficulties.

It remains unclear how far improvements in literacy and numeracy are the product of educational provision. Nevertheless, the evidence clearly suggests that the experience of serving in the Armed Forces makes a distinctive and positive contribution to improving the basic skills of recruits.

The largest improvements in numeracy levels were often found amongst those whose initial levels were lowest. A commonly reported benefit was the confidence to speak with and in front of a wide range of personnel. Irrespective of how far these developments are the direct result of literacy and numeracy provision, they are significant examples of positive developments that fully accord with the objectives of the Armed Forces Literacy and Numeracy policy.

Trainees reported on the 'wider' benefits of provision, such as writing a letter, completing a form, or reading a book for pleasure. This underlines the importance of practices such as these, and their contribution to improving performance in more formal professional and examination settings.

The rate of change was not always in one direction, as when the numeracy self evaluation amongst Army participants first improved between Stages 1 and 2 of the study before declining in Stage 3, by which time the sample were testing their skills in the Field Army. This illustrates how the results of tests are often sensitive to context, and confirms the importance, for the Services and other employers, of assessments that will prove accurate and reliable in practical and job related contexts.

Operational Effectiveness

Operational effectiveness is understood by all personnel as being able to do your job, wherever you are – both at home and when deployed on operations.

The evidence clearly suggests that good and improving levels of literacy and numeracy ensure that personnel are more likely to be operationally effective within their organisation.

Soldiers, ratings, airmen and their line managers were asked about the qualities deemed most important for operational effectiveness. The literacy and numeracy skills required for operational effectiveness were found to vary between Services and between and within trades. Nevertheless, sound levels of literacy and numeracy were consistently reported as contributing significantly to the capacity of all personnel to cope with the demands of their roles.

Speaking and listening were uniformly rated as making an important contribution to operational effectiveness across all Services and all trades, while reading, writing and maths were less frequently rated in these terms. However each of these skills was identified as making an important contribution in some of the trades in each of the Services.

Airmen and their line managers rated basic skills as having a more important role in operational effectiveness as compared with the other Services, particularly the Army. This may be accounted for by the relatively high level of literacy and numeracy skills required by the trades featured in the RAF sample.

There is some suggestion that personnel may under-estimate the importance of literacy and numeracy; either by not recognising these skills for what they are, or by not understanding the role of literacy and numeracy in acquiring the attributes they *do* consider as important for operational effectiveness. Thinking quickly and working as part of a team, for example, both often require literacy or numeracy-related attributes.

Neither low levels of literacy and numeracy, nor the presence of a SpLD, were judged as an impediment to operational effectiveness amongst the more junior Servicemen and women (a view endorsed by line managers). This is evidence of significant levels of support for trainees provided by the Services. However if frequent support for routine operations is time consuming for line managers – as SNCOs report – this may detract from the operational efficiency of Service units. In that case there is likely to be a (limited) trade off between unit efficiency and the provision of effective support for staff with low level skills. This further implies that higher levels of literacy and numeracy skills enhance the utility of personnel for the Services.

Active service may require the performance of tasks demanding higher level skills in circumstances when support is less readily on offer. In these cases there is a question whether and how far personnel can be said to be operationally effective in the absence of the support they have received previously.

Job roles and careers

Employability

Service personnel who possess sound literacy and numeracy skills may as a result be able to offer more to the Armed Forces, both because they are likely to require less in the way of training and support, and because they may be more flexible when it comes to the roles they are expected to undertake. This suggests that some staff may become more or less employable depending on the level and range of their literacy and numeracy skills.

Job roles

The evidence demonstrates the importance of speaking, listening, reading, writing, numeracy and ICT in the day to day job roles of soldiers, ratings, airmen and marines included in this study.

All elements of literacy are important for professional development and operational effectiveness, but speaking and listening were consistently rated as essential by all personnel we took evidence from. This is to be expected, since all servicemen and women are frequently required to convey and absorb information accurately.

Reading was regarded as only marginally less central than speaking and listening to most branches. Numeracy was a central skill for a wide range of job roles including RN writers, soldiers in the Royal Artillery and RAF Logistic Movements, as was ICT for RN communications specialists, Royal Medical Corps and RAF Medical assistants. Writing is important for those who need to compile reports, such as the RAF Police.

These findings derive from individuals at the first stages of their career; it is practically certain that the number and complexity of literacy and numeracy related demands will increase following their first and subsequent promotions.

Officers from the Army higher chain of command reported that there should be a greater concentration on 'critical thinking' and 'problem solving' in order to develop the Army's 'agile edge'. And one of the reasons for the introduction of Functional Skills is a widespread acknowledgement that Basic Skills and Key Skills provision has not provided *all* Service personnel with the skills required to perform effectively in their employment roles.

Careers

Whilst sample members were rarely hampered in their capacity to be operationally effective during the earliest stages of their careers, it was widely reported in all Services that the significance of literacy and numeracy skills increases with increasing levels of responsibility. Many suggested this would be a factor after a first promotion, and almost all agreed that literacy and numeracy assume even greater importance after a second promotion.

In general, and from a policy standpoint, it is therefore reasonable to regard sound levels of literacy and numeracy as a central component in the foundational skills that are required to progress a Service career.

Personnel often provided testimony about their role models, usually NCOs, who they looked up to and respected. Consideration could be given to the use of NCOs as role models or 'Literacy and Numeracy Champions' in order to promote the message that good levels of literacy and numeracy are necessary for professional development.

Specific Learning Difficulties (SpLDs)

In line with Armed Forces policy the Services provide appropriate and coherent support to recruits with SpLDs. The RAF in particular provides an effective model of supporting SpLD throughout a serviceman's career.

The Services provide a notable example of how employees can be supported to undertake demanding jobs despite having a SpLD.

Even with the levels of support available in the Services, it is possible for recruits to pass through training without having their SpLD diagnosed, demonstrating how difficult it is for any employer to pick up all cases of SpLD without exception.

The RN and RAF screen all entrants, however, the RN is discussing the option of redistributing resources to allow more support to personnel with SpLDs during later stages in their career, an option that is now standard RAF practice.

Evidence from this study tends to confirm that a SpLD is no barrier to working in the Services during the initial stages of a career, but that it may become so following a first and subsequent promotion.

Record-keeping

Education records for all soldiers, ratings, marines and airmen should be kept on the Joint Personnel Administration database (JPA). All Services reported concerns about the accuracy and consistency of record keeping and the transfer of details as personnel move from job and place to another. However, views about the effectiveness and accessibility of the JPA varied between the Services: the RN appeared more satisfied than either the Army or the RAF, but even here, many RN line managers do not use it and are unaware that they are able to find out information on ratings' literacy and numeracy skills qualifications if they are prepared to ask.

Most line managers in all Services did not attempt to access education records, either because they thought that they did not have permission, or because they did not know how to gain access.

Functional skills

The comprehensive introduction of Functional Skills will take place only once this study is completed. But it is a major development that bears directly on one of the principal concerns of this research, for it is expected to lead to qualifications that are better suited to the Services and to the needs of recruits.

If the promise of Functional Skills is even largely realised, this should go a long way towards improving the impact of literacy and numeracy provision on skills' levels, a key point on which this study was unable to provide as much evidence as initially hoped for.

Given what this study has been able to show – the central importance of literacy and numeracy for operational effectiveness and employability – a significant increase in the demonstrable impact of provision will represent a positive development of the first importance.

This will first require, however, that a wide range of administrative, organisational, and pedagogic challenges are overcome that would otherwise limit or prevent the effective implementation of Functional Skills.

8.3 Recommendations

Literacy and numeracy policy and provision in the Services represents a model of national significance, with lessons and implications for large organisations in non-military contexts. It should be a priority to share good practice in the Services with employers in other sectors, together with providers of prison education and large apprenticeship schemes.

Literacy and numeracy provision in the military context also represents a site of the first importance for policy and research communities. Above all it should be a priority to better understand the impact on skills development of an environment that includes several conditions known to be conducive to significant learning progress: high expectations, high levels of motivation, an effective whole organisation commitment to raising literacy and numeracy levels and a close link between qualifications and promotion.

There is a continuing need in all Services to promote throughout the chain of command the benefits of sound literacy and numeracy skills to all personnel. This remains an essential and on-going requirement of literacy and numeracy implementation across the Armed Forces, especially given the high turnover of personnel and changes in appointments associated with the military postings system. Continuity and consistency of the message must be maintained. All opportunities to re-enforce these messages through literacy and numeracy awareness training should be exploited.

It is a priority to promote high standards of literacy and numeracy teaching and training, and to gather evidence of the impact of high quality interventions on job performance and career opportunities.

The Wolf Report recommends that individuals who do not have GCSE A*-C in English and maths at age 16 should be required to pursue a course which either leads directly to these qualif cations, or provides signif cant progress towards achieving them. Although there is a strong view that the current policy has arisen as a result of extensive mapping of skills to job roles, we nevertheless suggest that the Services should review this recommendation, and explore whether and how existing policy can place greater emphasis on GCSE qualifications – particularly for those aiming at promotion.

The introduction of Functional Skills provides an opportunity to reconsider the policy of 'exemptions'. It is an option not to allow any exemptions from the requirement for Functional Skills qualifications. This would ensure that the Services have clear information about the level of functional mathematics and English undertaken by all personnel, it would represent a strong endorsement of the qualification, and it would serve as an example to other major employers.

Tutors should be trained to teach Functional Skills effectively. It is recommended that the Services develop CPD materials and training for all tutors in the Services who lack a Level 5 Diploma in numeracy or literacy teaching[238]. Military instructors should be trained and

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[238] Under existing policy tutors should have a minimum Level 3 or Level 4 qualification, together with qualifications appropriate to the requirements of the post.

supported in re-enforcing the literacy and numeracy skills of their trainees within the vocational training.

Speaking and listening skills are vital for operational effectiveness in all roles in all Services. More should be done to provide training aimed at improving the elements of speaking and listening most relevant to Service job roles.

It is clear that ICT is increasingly a component of wide range of job roles in all Services. Consideration needs to be given by all Services on how they may be able to develop good digital literacy skills for all their recruits.

In all three Services, individuals appeared reluctant to inform their managers of SpLDs. However, the new RAF policy requires airmen to inform their line managers about any SpLDs, in order that their managers can arrange sufficient support for them. This appears to be a positive development, and one which, if shown to be successful, might be adopted by the other Services.

It should be a priority for Officers and NCOs in all Services to become aware of how Specific Learning Difficulties can affect the ability of soldiers to be operationally effective.

The policy that recruits should gain L2 literacy and numeracy qualifications within eight years of joining the Services is not widely effective. The policy should either be revised, or the Services will require additional mechanisms for its enforcement.

There should be a greater focus on developing sustainable skills as well as qualification attainment. Skills profiles linked to job/training requirements should be developed and skills developed in bite-sized modules of learning undertaken at a pace that meets the needs of the learner and the organisation. The adoption of a skills profile approach will require an adjustment in funding arrangements to accommodate it.

The current delivery of literacy and numeracy provision through short, intensive, stand-alone programmes that are contextualised to the military/vocational setting fit the Services' operationally-focused training regime and culture. This will remain the primary approach. This should be re-enforced by the wider adoption of literacy and numeracy provision that is embedded within military training. All literacy and numeracy programmes should always be delivered at stages in military training that best support the learners' assimilation of that training. The fully supported adoption of Apprenticeships within the Services should be used to drive this development.

Note-taking is a widespread literacy practice, and an element of operational effectiveness, yet there was little evidence that note taking strategies were the subject of teaching and training. These strategies should be given a higher priority in the context of literacy and numeracy provision.

This study is closing at a point when the careers of the sample group are developing in ways which will further test their levels of literacy and numeracy. It would be valuable to understand how the Services support these trainees when operating at higher levels following their first promotions.

Glossary of Terms

Glossary

Acronym	Meaning
AAC	Army Air Corps
AB	Able Seaman, the most junior rating in the RN
ACIO	Army Careers Information Office
ADD	Attention Deficit Disorder
ADHD	Attention Deficit Hyperactivity Disorder
AEC	Army Education Centre
AFC(H)	Army Foundation College, Harrogate
AFCO	Armed Forces Careers Office
AoN	Application of Number – Key Skills numeracy qualification
ARTD	Army Recruiting and Training Division
ATC(P)	Army Training Centre, Pirbright
ATFC(W)	Army Technical Foundation College Winchester
ATR(B)	Army Training Regiment, Bassingbourn
AWOL	Absence Without Leave
AWT	Above Water Tactical
BCS70	British Cohort Study (1970)
BIS	(Department for) Business, Innovation and Skills
BKSB	Basic and Key Skill Builder – a diagnostic assessment tool, specified to national standards for adult literacy and numeracy levels.
BS	Basic Skills
BSA	Basic Skills Agency
BSDM	Basic Skills Development Manager
CI	Chief Instructor
CIS	Communications and Information Systems Specialist
CLM	Command, Leadership and Management
CO	Commanding Officer
Cpl	Corporal
CPO	Chief Petty Officer
CS	Communication Skills – Key Skills literacy qualification
CTCRM	Commando Training Centre Royal Marines at Lympstone, Devon.
CTLLS	Certificate in Teaching in the Lifelong Learning Sector
DAST	Dyslexia Adult Screening Test
DETS(A)	Army Directorate of Educational and Training Services
DO	Divisional Officer
DTLLS	Diploma in Teaching in the Lifelong Learning Sector
eLC	e-Learning Centre – An ICT-based learning facility

Acronym	Meaning
ELC	Enhanced Learning Credit
ERO	Education and Resettlement Officer
ESOL	English for Speakers of Other Languages
ETS	Education and Training Service
EW	Electronic Warfare
FPG	Fleet Protection Group
FS	Functional Skills
GED	General Education Development (Test level)
IA	Initial Assessment
ICT	Information and Communication Technologies
ITC(C)	Infantry Training Centre, Catterick
IGCSE	International General Certificate of Secondary Education
ILP	Individual Learning Plan
JMCL	Junior Management and Leadership Course
JNCO	Junior Non Commissioned Officer
JPA	Joint Personnel Administration – the intranet-based personnel administration system used by the three Services.
JS	Junior Soldier
KS	Key Skills
LANTERN	Literacy and Numeracy Testing and Education Royal Navy, the naval framework for literacy and numeracy training.
LCM	Learner Centre Manager
L/Cpl	Lance Corporal
LDO	Learning and Development Officer
LH	Leading Hand
LLN	Literacy, Language and Numeracy
Lt Cdr	Lieutenant Commander
MI	Meares-Irlen Syndrome
MIS	Management Information System
MOD	Ministry of Defence
MODREC	Ministry of Defence Research Ethics Committee
MWS	Maritime Warfare School. Naval training centre based at HMS Collingwood.
NAMET	Naval Maths and English Test – the predecessor of LANTERN.
NATcen	National Centre for Social Research
NETS	Naval Education and Training Service
NCO	Non-Commissioned Officer
NES	National Employers Service
NIACE	National Institute of Adult Continuing Education
NRDC	National Research and Development Centre for Adult Literacy and Numeracy
NVQ	National Vocational Qualification
OC	Officer Commanding

Acronym	Meaning
OPS	Operational Performance Statement – the standard of operational effectiveness
PGAC	Potential Gunners Awareness Course
PGSC	Potential Gunners Selection Course
PLA	Personal Learning Advisor
PO	Petty Officer
POC	Point of Contact
PRMC	Potential Royal Marines Course – a training session held for potential marine recruits
PSA	Public Service Agreement
PTLS	Personal Thinking & Learning Skills
PTTLS	Preparing to Teach in the Lifelong Learning Sector
QA	Quality assurance
QCF	Qualifications and Credit Framework
RA	Royal Artillery
RAC	Royal Armoured Corps
RAMC	Royal Army Medical Corps
RCMO	Regimental Career Management Officer
REME	Royal Electrical and Mechanical Engineers
RLC	Royal Logistic Corps
RM	Royal Marine
RO	Reporting Officer (during airmen's appraisals)
SAC	Senior Aircraftmen
SfL	Skills for Life
Sgt	Sergeant
SNCO	Senior Non Commissioned Officer
SpLDs	Specific Learning Difficulties
STDO	Station Development Officer
SuTs	Soldiers under training
TAT	Trade-Ability Test
WO	Warrant Officer

Equivalences of Rank across the Services

RN	RM	Army	RAF
Commander	Lieutenant Colonel	Lieutenant Colonel	Wing Commander
Lieutenant Commander	Major	Major	Squadron Leader
Lieutenant	Captain	Captain	Flight Lieutenant
Sub Lieutenant	Lieutenant	Lieutenant	Flying Officer
Midshipman	Second Lieutenant	Second Lieutenant	Pilot Officer
Warrant Officer 1	Warrant Officer Class 1	Warrant Officer Class 1	Warrant Officer
Warrant Officer 2	Warrant Officer Class 2	Warrant Officer Class 2	
Chief Petty Officer	Colour Sergeant	Staff Sergeant	Flight Sergeant
Petty Officer	Sergeant	Sergeant	Sergeant
Leading Hand	Corporal	Corporal	Corporal
	Lance Corporal	Lance Corporal	Lance Corporal (RAF Regimental Gunners)
			Senior Aircraftman
Able rate (AB)	Marine	Private	Leading Aircraftman

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Appendix A: Tables

A.1 Army Tables (Chapter 5)

Table 5.3: Number of trainees in literacy and numeracy who begin provision at each training unit and number of trainees passing out at the end of Phase 1 training by qualification level. *One cohort at each training unit during 2010*								
Training Unit	Level	Literacy				Numeracy			
		those who begin provision		those passing out at end of Phase 1/2 training		those who begin provision		those passing out at end of Phase 1/2 training	
		N	%	N	%	N	%	N	%
ATR(B)	EL1	0	0	0	0				
	EL2	1	5	0	0				
	EL3	11	50	0	0				
	L1	8	36	9	64				
	L2	2	9	5	36				
AFC(H)	EL1	11	2	0	0	3	1	0	0
	EL2	22	4	0	0	14	3	0	0
	EL3	250	50	0	0	232	46	0	0
	L1	180	36	37	11	72	14	44	13
	L2	41	8	302	89	182	36	295	87
ATC(P)	EL1	0	0	0	0	0	0	0	0
	EL2	1	2	0	0	0	0	0	0
	EL3	21	48	5	13	13	30	11	27
	L1	14	32	18	45	7	16	4	10
	L2	8	18	17	43	24	55	26	63
ATFC(W)	EL1	0	0	0	0	0	0	0	0
	EL2	2	6	0	0	0	0	0	0
	EL3	27	79	2	7	24	71	0	0
	L1	5	15	19	68	4	12	17	61
	L2	0	0	7	25	6	18	11	39

Note: No data split by level was available from the ITC(C).

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Table 5.6: All new Army recruits (Jan-Dec 2010), summary of literacy IA by training unit

Literacy Level	Percentage of Intake at each unit				
	ATR(B)	ITC(C)	AFC(H)	ATC(P)	ATFC(W)
EL1	0.1	1.8	1.7	0.4	1.8
EL2	2.1	5.2	6.9	2.9	4.2
EL3	32.5	45.9	51.3	32.5	47.9
EL3 or below	34.7	52.9	59.9	35.8	53.9
L1	46.9	37.5	33.2	44.9	35.8
L2	18.4	9.6	6.9	19.3	10.3
L1 or above	65.3	47.1	40.1	64.2	46.1
Total N	2618	2107	1281	2618	623

Table 5.7: All new Army recruits (Jan-Dec 2010), summary of numeracy initial assessment by training unit.

	Percentage of Intake at each unit				
	ATR(B)	ITC(C)	AFC(H)	ATC(P)	ATFC(W)
EL1	0.2	0.3	0.4	0.1	0.5
EL2	0.4	1.9	3.4	1.4	1.4
EL3	27.8	49.2	52.8	33.8	38.7
EL3 or below	28.4	51.4	56.6	35.3	40.6
L1	16.9	16.9	11.9	17.8	14.5
L2	54.7	31.7	31.5	46.9	44.9
L1 or above	71.6	48.6	43.4	64.7	59.4
Total N	2618	2107	1281	2618	623

Table 5.15: Uses of literacy and numeracy in Army trades

Trade	Speaking	Listening	Reading	Writing	Maths	ICT
Army Air Corps (AAC)	Essential (Constant use)	Essential (Constant use	Important (General use)	Important (General use)	Not very important (Intermittent use)	Essential (Constant use) (For EE but not much in general)
Infantry	Essential (Constant use)	Essential (Constant use	Not very important (Intermittent use)	Unimportant (Rare use)	Unimportant (Rare use)	Unimportant (Rare use)
Royal Army Medical Corps	Essential (Constant use)	Essential (Constant use	Important (General use)	Essential (Constant use)	Not very important (Intermittent use)	Essential (Constant use)
Royal Armoured Corps (RAC/HCAV)	Essential (Constant use)	Essential (Constant use	Important (General use)	Not very important (Intermittent use)	Unimportant (Rare use)	Unimportant (Rare use)
Royal Artillery	Essential (Constant use)	Essential (Constant use	Important (General use)	Essential (Constant use)	Important (General use)	Essential (Constant use)

Table 5.16: Levels of literacy based on survey assessment change between Stages 1 and 3

Stage 1 assessment		Stage 3 assessment					Total
		< E L2	EL2	E L3	L1	L 2	
< EL2	Count	5	2	1	1	3	12
	% within Stage 1 assessment	42%	17%	8%	8%	25%	100%
EL2	Count	0	3	4	12	7	26
	% within Stage 1 assessment	.0%	12%	15%	46%	27%	100%
EL3	Count	5	1	9	19	16	50
	% within Stage 1 assessment	10%	2%	18%	38%	32%	100%
L1	Count	6	5	13	120	67	211
	% within Stage 1 assessment	3%	2%	6%	57%	32%	100%
L2	Count	0	1	6	52	67	126
	% within Stage 1 assessment	0%	.1%	5%	41%	53%	100%
Total	**Count**	**16**	**12**	**33**	**204**	**160**	**425**
	% within Stage 1 assessment	**4%**	**3%**	**8%**	**48%**	**38%**	**100%**

Table 5.17: Levels of numeracy based on survey assessment change between Stages 1 and 3							
Stage 1 assessment		**Stage 3 assessment**					**Total**
		< E 2	**E2**	**E 3**	**L1**	**L 2**	
< EL2	Count	12	10	11	13	1	47
	% within Stage 1 assessment	26%	21%	23%	28%	2%	100%
EL2	Count	20	24	42	20	9	115
	% within Stage 1 assessment	17%	21%	37%	17%	8%	100%
EL3	Count	13	31	44	38	10	136
	% within Stage 1 assessment	10%	23%	32%	28%	7%	100%
L1	Count	3	9	20	40	15	87
	% within Stage 1 assessment	3%	10%	23%	46%	17%	100%
L2	Count	1	2	5	8	5	21
	% within Stage 1 assessment	5%	10%	24%	38%	24%	100%
Total	**Count**	**49**	**76**	**122**	**119**	**40**	**406**
	% within Stage 1 assessment	**12%**	**19%**	**30%**	**29%**	**10%**	**100%**

Table 5.19: Perceptions of key attributes and skills involved in operational effectiveness: a comparison between Soldiers in the sample in their first appointments and their line managers				
		Appointment		Total
		Line manager	Soldiers	
Be physically fit	Count	12	13	25
	% within Rank	100%	100%	
Be mentally tough	Count	10	11	21
	% within Rank	83%	85%	
Be able to persevere / not giving up	Count	10	13	23
	% within Rank	83%	100%	
Be resilient / quick to recover	Count	10	12	22
	% within Rank	83%	92%	
Be confident in your own abilities	Count	10	13	23
	% within Rank	83%	100%	
Be determined to succeed	Count	12	11	23
	% within Rank	100%	85%	
Have passed your trade training	Count	10	11	21
	% within Rank	83%	85%	
Be experienced in own trade	Count	6	6	12
	% within Rank	50%	46%	
Be a leader	Count	3	3	6
	% within Rank	25%	23%	
Be flexible and able to think quickly	Count	11	10	21
	% within Rank	92%	77%	
Be committed to your team	Count	12	13	25
	% within Rank	100%	100%	
Be competent at writing	Count	3	4	7
	% within Rank	25%	31%	
Be competent at reading	Count	6	7	13
	% within Rank	50%	54%	
Be competent at maths / numbers	Count	3	5	8
	% within Rank	25%	39%	
Be competent at mental arithmetic	Count	4	4	8
	% within Rank	33%	31%	
Be competent with computers	Count	3	3	6
	% within Rank	25.0%	23.1%	
Be confident at talking to all ranks	Count	11	11	22

	% within Rank	92%	85%	
Be able to talk in front of groups	Count	7	9	16
	% within Rank	58%	69%	
Be a good listener	Count	12	13	25
	% within Rank	100%	100%	
Be able to understand orders and instructions	Count	12	13	25
	% within Rank	100%	100%	
Be able to give and pass on orders and instructions	Count	6	12	18
	% within Rank	50%	92%	
Be able to learn quickly	Count	7	6	13
	% within Rank	58%	46%	
Be able to work as part of the team	Count	12	13	25
	% within Rank	100%	100%	
Total	**Count**	**12**	**13**	**25**

Table 5.20: Army: Perceptions of key attributes and skills involved in operational effectiveness - a comparison between Infantry and other Arms and Services				
	Infantry		All other Arms or Services	
	N	% of Cases	N	% of Cases
Be physically fit	11	100%	14	100%
Be mentally tough	9	82%	12	86%
Be able to persevere / not giving up	9	82%	14	100%
Be resilient / quick to recover	8	73%	14	100%
Be confident in your own abilities	10	91%	13	93%
Be determined to succeed	10	91%	13	93%
Have passed your trade training	11	100%	10	71%
Be experienced in own trade	4	36%	8	57%
Be a leader	1	9%	5	36%
Be flexible and able to think quickly	9	82%	12	86%
Be committed to your team	11	100%	14	100%
Be competent at writing	1	9%	6	43%
Be competent at reading	5	46%	8	57%
Be competent at maths / numbers	3	27%	5	36%
Be competent at mental arithmetic	4	36%	4	29%
Be competent with computers	-	-	6	43%
Be confident at talking to all ranks	9	82%	13	93%
Be able to talk in front of groups	5	46%	11	79%
Be a good listener	11	100%	14	100%
Be able to understand orders and instructions	11	100%	14	100%
Be able to give and pass on orders and instructions	8	73%	10	71%
Be able to learn quickly	6	55%	7	50%
Be able to work as part of the team	11	100%	14	100%
Total	**167**	**1518%**	**241**	**1721%**

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Table 5.22: Qualities that are required to be operationally effective by Arms and Services (% of responses).		Combat Arms	Combat Support Arms	Combat Service Support	Total
Be physically fit	N	167	95	94	356
	% within Arms	84%	89%	78%	
Be mentally tough	N	129	58	56	243
	% within Arms	65%	54%	47%	
Be confident in own abilities	N	68	29	38	135
	% within Arms	34%	27%	32%	
Be experienced in own trade	N	13	12	19	44
	% within Arms	7%	11%	16%	
Have common sense	N	39	22	20	81
	% within Arms	20%	21%	17%	
Able to write well enough to do specific job in the Army	N	0	2	0	2
	% within Arms	0%	2%	0%	
Able to read well enough to do specific job in the Army	N	1	2	0	3
	% within Arms	1%	2%	0%	
Able to do maths/work with numbers well enough to do specific job in the Army	N	2	1	1	4
	% within Arms	1%	1%	1%	
Able to use computers well enough to do specific job in the Army	N	1	0	1	2
	% within Arms	1%	0%	1%	
Able to talk clearly to other people	N	6	3	5	14
	% within Arms	3%	3%	4%	
Able to listen carefully	N	8	8	4	20
	% within Arms	4%	8%	3%	
Be able to work as part of the team	N	76	43	61	180
	% within Arms	38%	40%	51%	
Be able to work well under pressure	N	73	28	45	146
	% within Arms	37%	26%	38%	
Be committed to work in the Army	N	17	18	16	51
	% within Arms	9%	17%	13%	
Total	**N**	**200**	**107**	**120**	**427**

Note: Respondents could choose three main qualities from the list of 14. Bold text denotes qualities related to literacy and numeracy skills.

Soldier number and trade	Soldier's own assessment of progress in career	Line manager's assessment of soldiers' career progress	Time intended to stay in Army	Comment
1 Infantry	OK	Well	Will review after four years	Line manager: noted how enthusiastic he is and how well he listens; has potential to reach rank of Sgt; had successfully completed a tour.
2 Infantry	Well	Well	Will review after four years	Line manager: stressed he was a team player; has potential to reach rank of at least Cpl, with potential to progress much further.
3 Infantry	Very well	Very well	At least 10 years	Line manager: had performed well on tour; recommend him for Lance Corporal in the near future
4 Infantry	OK	OK	At least 10 years	Line manager: had been on tour as and found it difficult to fit in; take him longer than the norm to establish himself and make a career in the Army; too early to say if he would reach a higher rank.
5 Infantry	OK	Well	Did not say	English had improved and was now satisfactory. Line manager: has potential to reach rank of Sgt.
6 Infantry	OK	Very well	He wants to leave after four years because his mother is ill	Due to go on tour in October 2011 and Line Manager would recommend him for a lance corporal cadre on his return; was in top 30 in his platoon; potential to reach the rank of Sgt.
7 RSA	Well	Very well	Will review after four years	Line manager: appeared very capable; would be promoted if she continued to show same level of commitment and performance.

Table 5.23: Evaluations of how soldiers' careers are progressing from the 14 soldiers and their line managers

8 AAC	Well	Very well	Will review after four years	Line manager: appeared very capable; would not speculate how far she could progress.
9 AMC	Very well	OK	Wants to serve a full career	Thought her career going very well. Line manager: a lot of room for improvement; judged her not be operationally effective if deployed now; too early to tell if she was promotion material.
10 Infantry	OK	Good	Wants to leave after four years	Line manager: slight problem with fitness; could be promoted within the year.
11 RSA	Very well	Very well	Wants to serve a full career	Line manager: doing very well in the bag piping school but career would be judged when he returned to the field; severely dyslexic.
12 RSA	Well	His line manager did not know him well enough to make a judgement	At least 10 years	Enjoying life in the RSA. No line manager was able to comment on his potential for promotion.
13 RAC	OK	OK	Wants to serve a full career	Made a poor start in the Field Army; disciplinary issues; potential to be a very good soldier; frustrated by not being deployed; severely dyslexic. Line manager would not speculate on potential for promotion.
14 RAC	OK	Very well	Will review after four years	Line manager: judged him as bright and enthusiastic; would be promoted if he continued to show the same level of commitment and performance.

A.2 RN Tables (Chapter 6)

Table 6.4: RN interviewees by stage			
Trainee No.	Interviewed Stage 1	Interviewed Stage 2	Interviewed Stage 3
1			
2		Discharged	
3		Discharged	
4			Submariner at sea
5			
6			Refused to cooperate
7			
8			
9			
10			
11			
12			
13			
14			Unable to contact on board ship
15			
16		Discharged (RM)	
17		Discharged (RM)	
18		Discharged (RM)	
19		Discharged (RM)	
20		Discharged (RM)	
21			
22		Discharged (RM)	
24			In service in Afghanistan
25			Discharged (RM)
26			Discharged (RM)
27			
28			Discharged (RM)
29			Not contacted for Stage 3
30			Not contacted for Stage 3
31			Not contacted for Stage 3
32			
33			Not contacted for Stage 3
34			Not contacted for Stage 3
35			Not contacted for Stage 3
36			

Table 6.10: Literacy and numeracy skills used in RN and RM Branches & Specialisations						
Branch/ specialisation	Speaking	Listening	Reading	Writing	Maths	ICT
Warfare	• Speak ing with people on own ship and other ships • Similar ranks and in higher command. • usin g plain language and in code, • Need to sound confident and professional at all times. • Presentati ons when at sea.	• C ommunication is key to everything • Listen ing on comms to own and other ships • Briefs about the job ahead • Orders tend to be verbal and there's lots of jargon. Also use lots of code • Generally have 5-6 lines of communication open at all times • Vital. Need to understand that if they hear something must not assume anyone else has. It could be the piece of information the Captain needs	• WPP - Daily orders • Intelli gence reports • Get emails every day full of important info. • In Ops room, read signals which use a very specific sort of language. • Rea ding different types of crypto • Instructions, documentation • T echnical publications,	• Most writing done on computer • Writing down latitude and longitudes of the ships • Writing call signs of ships • Rep orting • W riting down communications and decoding, logs. We run 3 logs while at sea, 24 hours a day. • Need to keep making notes to yourself all the time	• Distanc e, speed, bearings, but uses computer to do the calculations. E.g. I might call from bridge and ask to know the course to take to a tanker one mile on starboard beam. • F requencies • time • rang e • radar - frequencies, antennae rotation periods, pulse repetition frequencies.... • Need to know something of how the kit works.	• Emails • Navy Star (NS) system • JPA • CMS combat management system for radar • Vie wing computers and computerised systems all day. Mainly tracking systems • Use a big database of interceptions we have while at sea
Seaman specialist	• Briefs & presentations • Need to speak confidently to anyone and everyone	• Briefs, orders, lessons	• Need to read legal documents, bridge logs, communication logs quickly and reliably	• Keep logs on the bridge • Recor d tactical manoeuvres • Making notes for task book	• Need to know formulas e.g. safe working loads • And on the bridge have to work out movement grids and ranges and bearings and courses.	• It's all computers-everything on board really now's computers.

Branch/ specialisation	Speaking	Listening	Reading	Writing	Maths	ICT
CIS	• Major part of the job. Need to communicate with subordinates and the commander and with other ships. • Talk to other ships using specific terms and language • Need to be confident able to assimilate and disseminate information.	• Listening to other ships' circuits and your own • Major part of the job. Need to communicate with subordinates and the commander and with other ships. • End of watch reports, pick up on safety hazards.	• Need to be able to read the signal and inwardly digest the content even if the wording may be ambiguous in meaning. • Rea ding reference materials • Reading Previous log entries • Reading signals & orders • Rea ding publications, technical reference docs	• Keep a written record of signals, logs and other documentation. • You need to be able to handwrite and type and have a good command of English • Log ging down radio comms • Need to write a record all communications	• Kno wing and understanding frequencies	• Vario us bespoke systems e.g. MPS 2000, Summit MX, FIX MS, Mega User Agent • Branch seen as IT specialists on board • All new trainees have European Driving Licence.
Chef	• All the time. Absolutely vital • Ability to speak with senior officers more a feature of submarine life	• Orders • Recipes • food H&S guidance • GMRs	• Menus • GMRs • Need to plan stores, where things are in freezers • orderi ng. • Writing logs and menus. • Needs to have legible handwriting	• Recipes, particularly having to vary the number you are cooking for • orderi ng supplies • Need good basic numeracy – if asked to fetch 15 kilos of something, it's not actually going to be one big block of 15 kilos, it's going to be little joints of 2.1s, 1.2s, 3.2s.	• Stocks and accounts • JPA	

Branch/ specialisation	Speaking	Listening	Reading	Writing	Maths	ICT
Writer	• Core part of customer service role. • Need to know appropriate vocabulary and attitude • Narrator role needs very accurate listening. • C ommunication by telephone as well as FtF. • Only job in RN where people can complain. • Also advice and Guidance function.	• E-mails • docum entation from other centres • Admin role and need to read all the time	• emails , forms, letters. • Narrator role involves 6 hours constant writing at a sitting. • Comp osing letters and email is core part of job	Need to calculate: • Pay rates, holidays, allowances (on board, different countries), deductions • Comp uters help you to do calculations, but good numeracy is very important.	• Spreadsheets on Excel • adva nced Word. • The essential tool of the trade. Writers sit at their computers all day.	
Royal Marine	• Being able to talk to a group is important e.g. finding an IED - YOU have to explain to the bomb disposal unit exactly where, how, what etc. • C ommunication is key. • givin g orders (everyone does), delivering briefings, need to put across a point and be taken seriously	• Most orders and instructions are verbal. Listening is vital • Dissemi nation is important • Need to listen and concentrate to take in information	• Reading vital - orders & information • Have to be able to read and understand a wide variety of information • Orders, handouts, PPTs	• Specific instructions e.g. 9 liner for extracting wounded colleague by helicopter • Affairs folder, writing down orders in field	• More mental maths. • Accounti ng for ammunition • Map reading & navigation • Route card includes ranges, bearings, grid references, accounting for ammunition, map reading • Basic numeracy for counting rounds/ magazines • logistics/stor es • freque ncies, wavelengths, quantity, battery life, navigation.	• JPA • If specialising in Signals, IT very important, but not to a rifleman.

Table 6.11: Interviewees self reporting of literacy and numeracy (L&N) levels				
Level of L&N	**L&N improved since joining RN**	**Considers L&N helpful to career**	**L&N in personal life**	**Want to improve L&N**
Very happy with current level of BS	Yes – writing, speaking	Definitely	Read a bit – Ross Kemp books	Not really
Good enough	Yes, because of using them			Probably
OK	Thinks English has improved since joining RN, and S&L. Trying to stop swearing as it makes you sound uneducated.		Reads papers – *Evening Standard* & *Times* and started reading books again recently	Intending to do some maths next time he is at sea. Definitely no time when alongside.
OK – feels he can cope with poor spelling and writing.	Writing, form filling, life skills – like life insurance, doing my will, bank accounts – all so much better. And talking to groups.		Reads a lot	Would like to improve his maths, perhaps after Afghanistan
Reading – good, Writing – good , Speaking – good, happy with presentations, Listening – got better since school, Maths – good, ICT -Easy			Read magazines	
Reading and writing very good. Happy with Maths and computers, thinks S&L have improved	Used to be quite shy and found speaking in groups hard, but now more confident and feels RN has really helped.	Definitely	Lots of reading. Got a Kindle! Enjoys writing. Wanted to be a journalist at one time	

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Level of L&N	L&N improved since joining RN	Considers L&N helpful to career	L&N in personal life	Want to improve L&N
Fine overall. Could be better but OK for the job	Speaking has definitely improved with the job, as has typing speed. English grammar too. Even maths a bit, and use of computers.		Not much of a reader. Newspapers mainly.	Would like to do GCSEs again
Pretty good – though lacks confidence in maths	IT skills, English, doing presentations... All got lots better		Reads a bit – autobiographies	Would like to – once she has her star
Thinks better than needed for his job. Bit of a computer geek	Yes – probably all of them. Just through constant practise	Yes	Reads quite a lot, and interested in computers. Is redesigning ships CSS website (voluntarily)	
Generally good, though numeracy better than literacy				Would like to improve writing skills
OK but would like to be better – particularly handwriting and spelling	Not much – English a bit. More practical skills which have got better.	Definitely - especially as you move up		Yes
Strongest literacy, weakest numeracy	Numeracy has – KS instructors excellent			Would only do more numeracy if needed for career
Strong: Speaking, listening, reading Weak: writing, maths Average: ITC	Speaking through IFT debates			Would like to do GCSE English language

Table 6.12: Importance of factors in contributing to operational effectiveness in RN		Rank	
		NCOs	Trainee
Be physically fit	Count	9	8
	% within Rank	75%	62%
Be mentally tough	Count	10	9
	% within Rank	83%	69%
Be able to persevere / not giving up	Count	11	10
	% within Rank	92%	77%
Be resilient / quick to recover	Count	11	7
	% within Rank	92%	54%
Be confident in your own abilities	Count	10	10
	% within Rank	83%	77%
Be determined to succeed	Count	10	12
	% within Rank	83%	92%
Have passed your trade training	Count	6	3
	% within Rank	50%	23%
Be experienced in own trade	Count	7	8
	% within Rank	58%	62%
Be a leader	Count	3	4
	% within Rank	25%	31%
Be flexible and able to think quickly	Count	10	12
	% within Rank	83%	92%
Be committed to your team	Count	10	12
	% within Rank	83%	92%
Be competent at writing	Count	5	7
	% within Rank	42%	54%
Be competent at reading	Count	7	8
	% within Rank	58%	62%
Be competent at maths / numbers	Count	7	4
	% within Rank	58%	31%
Be competent at mental arithmetic	Count	3	4
	% within Rank	25%	31%
Be competent with computers	Count	10	7
	% within Rank	83%	54%
Be confident at talking to all ranks	Count	10	11
	% within Rank	83%	85%

Be able to talk in front of groups	Count	7	11
	% within Rank	58%	85%
Be a good listener	Count	10	13
	% within Rank	83%	100%
Be able to understand orders and instructions	Count	12	12
	% within Rank	100%	92%
Be able to give and pass on orders and instructions	Count	7	9
	% within Rank	58%	69%
Be able to learn quickly	Count	7	6
	% within Rank	58%	46%
Be able to work as part of the team	Count	12	13
	% within Rank	100%	100%
Total	**Count**	**12**	**13**

Table 6.13: Importance of literacy and numeracy skills for operational effectiveness by branch/specialisation										
	CIS		Marine		Seaman		Warfare		Chefs & Writers	
	N	% of Cases	N	% of Cases	N	% of Cases	N	% of Cases	N	% of Cases
Be competent at writing	4	80	1	25	1	50	3	30	3	75
Be competent at reading	5	100	1	25	1	50	4	40	4	100
Be competent at maths / numbers	2	40	1	25	1	50	3	30	4	100
Be competent at mental arithmetic	1	20	3	75	-	-	1	10	2	50
Be competent with computers	5	100	-	-	1	50	7	70	4	100
Be confident at talking to all ranks	4	80	4	100	2	100	7	70	4	100
Be able to talk in front of groups	3	60	3	75	2	100	9	90	1	25
Be a good listener	5	100	3	75	1	50	10	100	4	100
Be able to understand orders and instructions	5	100	4	100	2	100	9	90	4	100
Be able to give and pass on orders and instructions	4	80	3	75	2	100	5	50	2	50

Table 6.15: How a rating's career is progressing					
Rating No	Rating's own assessment of progress	Line manager's assessment of progress in rating's career	Time now intends to stay in RN	AB1 (Star)	SpLD	Comment
1	Going well. Gained some good qualifications and enjoying work.	Very well. If he carries on as he is he will be a contender for promotion next time round.	Don't know. But very happy at moment.	Yes		
5	According to plan. He is concerned about what happens when his boat goes into refit.	Middling, average but doing OK. Keen and enthusiastic - 'A good egg'.	In for the long term – has just moved wife and children to Scotland.	Yes		
7	Feels he is doing OK.	Was going quite well on his ship, but appears frustrated by being back alongside due to illness. Not showing great enthusiasm at present.	Not sure, but no intention of leaving at moment.	Yes		Trainee was taken ill when on board and was interviewed while recuperating on shore in HMS Nelson.
8	Good. Looking towards promotion.	Excellent progress. One of the best ABs on board.	In for the long term - although if has children may re-think.	Yes	Yes	
9	Really well - won Warfare Efficiency Award.	Done really well. Very enthusiastic, working hard and succeeding.	At least till he is promoted.	Yes	Yes	

10	Currently stranded.	Settled into 'Recovery' very well.	Not sure. Depends how it goes when he gets back on board.	No		This rating was a victim of a car accident in his home town and has been medically downgraded for several months.
11	Good so far - wanted a transfer to MA but has made no progress.			Yes		Questionnaire response from on board.
12	Not great.	On a professional warning for failing an Operations Room check.	Just the 4 years	No		
13	Better than ever.	Doing well. Very young and keen to advance himself.	Originally only intended to stay for 4 years, but now wants to remain much longer.	Yes		
15	Going reasonably well		No plans to leave	Yes		Questionnaire response from on board.
21	Early days.		Hasn't really thought about it. No thought of giving up now!	RM	Yes	
27	Nowhere.	Sadly leaving for medical reasons.	n/a			Has voluntarily withdrawn from RM training in the hope of being able to restart after his body has had time to recover from multiple injuries.

| 32 | Thinks OK. Should get Star in a month or two. | Seems to be making steady progress. | Longer - originally was only going to stay 4 years but longer now. | No | Yes | |
| 36 | Enjoying her time in RN. | | Not sure if she will stay beyond 4 years. | No | | Questionnaire response from on board. |

A.3 RAF Tables (Chapter 7)

Table 7.2: Literacy and numeracy level of RAF recruits at IA, by RAF training centre (2010)

RAF HALTON	Literacy at IA	Numeracy at IA
EL1	(1) 0%	0%
EL2	0%	0%
EL3	0%	13 = 2%
L1	409 = 53%	281 = 39%
L2	359 = 47%	421 = 59%
RAF HONINGTON	Literacy at IA	Numeracy at IA
EL1	0	0
EL2	0	0
EL3	3 = 1%	10 = 5%
L1	135 = 66%	128 = 62%
L2	67 = 33%	69 = 33%

Table 7.3: Summary of trades of airmen in the Stage 3 sample

Trades	Airmen's Parent RAF Stations	Number of airmen in each trade
MT Driver	RAF Marham, RAF Wittering	2
Logistical Movement	RAF Lyneham	1
Medical Assistant	RAF Halton	1
RAF Police	RAF Marham, RAF St Athan	2
RAF Regimental Gunner	RAF Honington (4), RAF Wittering (2)	6
Supply	RAF Lyneham	1

Table 7.7: The relative importance and use of literacy and numeracy skills in each RAF trade

Trade	Speaking	Listening	Reading	Writing	Maths	ICT
MT Driver (blue)	Important (General use)	Important (General use)	Not very important (Intermittent use)	Not very important (Intermittent use)	Unimportant (Rare use)	Unimportant (Rare use)
MT Driver (green)	Important (General use)	Important (General use)	Not very important (Intermittent use)	Important (General use)	Important (General use)	Important (General use)
Medic	Essential (Constant use)	Essential (Constant use)	Essential (Constant use)	Essential (Constant use)	Important (General use)	Essential (Constant use)
Movement	Essential (Constant use)	Essential (Constant use)	Not very important (Intermittent use)	Not very important (Intermittent use)	Important (General use)	Essential (Constant use)
RAF Police	Essential (Constant use)	Essential (Constant use)	Essential (Constant use)	Essential (Constant use)	Not very important (Intermittent use)	Essential (Constant use)
Supply	Essential (Constant use)	Essential (Constant use)	Important (General use)	Not very important (Intermittent use)	Important (General use)	Important (General use)
RAF Regimental Gunner	Essential (Constant use)	Essential (Constant use)	Not very important (Intermittent use)	Not very important (Intermittent use)	Unimportant (Rare use)	Unimportant (Rare use)

Table 7.8: Perceptions from trainees and line managers of attributes and skills involved in OE – evidence from the three Services					
Attribute/skill		**Service**			
		RAF	**Army**	**RN**	**Total**
Be physically fit	Count	22	25	17	64
	% within Service	96%	100%	74%	
Be mentally tough	Count	20	21	18	59
	% within Service	87%	84%	78%	
Be able to persevere / not giving up	Count	20	23	19	62
	% within Service	87%	92%	83%	
Be resilient / quick to recover	Count	18	22	18	58
	% within Service	78%	88%	78%	
Be confident in your own abilities	Count	23	23	18	64
	% within Service	100%	92%	78%	
Be determined to succeed	Count	21	23	21	65
	% within Service	91%	92%	91%	
Have passed your trade training	Count	22	21	8	51
	% within Service	96%	84%	35%	
Be experienced in own trade	Count	14	12	14	40
	% within Service	61%	48%	61%	
Be a leader	Count	13	6	7	26
	% within Service	57%	24%	30%	
Be flexible and able to think quickly	Count	22	21	20	63
	% within Service	96%	84%	87%	
Be committed to your team	Count	21	25	21	67
	% within Service	91%	100%	91%	
Be competent at writing	Count	17	7	12	36
	% within Service	74%	28%	52%	
Be competent at reading	Count	17	13	15	45
	% within Service	74%	52%	65%	
Be competent at maths / numbers	Count	12	8	11	31
	% within Service	52%	32%	48%	
Be competent at mental arithmetic	Count	7	8	7	22
	% within Service	30%	32%	30%	
Be competent with computers	Count	11	6	17	34
	% within Service	48%	24%	74%	
Be confident at talking to all ranks	Count	20	22	20	62
	% within Service	87%	88%	87%	
Be able to talk in front of groups	Count	16	16	16	48
	% within Service	70%	64%	70%	
Be a good listener	Count	21	25	21	67
	% within Service	91%	100%	91%	
Be able to understand orders and	Count	22	25	22	69

instructions	% within Service	96%	100%	96%	
Be able to give and pass on orders and instructions	Count	21	18	15	54
	% within Service	91%	72%	65%	
Be able to learn quickly	Count	17	13	13	43
	% within Service	74%	52%	57%	
Be able to work as part of the team	Count	23	25	23	71
	% within Service	100%	100%	100.%	
Total	**Count**	**23**	**25**	**23**	**71**

NB Participants could choose as many responses as they wanted
Categories most closely related to literacy and numeracy skills are shown in bold.

Table 7.9: Perceptions of key attributes/skills involved in OE – evidence from RAF Line Managers and Trainees				
Attribute/skill		**Rank**		**Total**
		Line manager	**Trainee**	
Be physically fit	Count	10	12	22
	% within Rank	100%	92%	
Be mentally tough	Count	7	13	20
	% within Rank	70%	100%	
Be able to persevere / not giving up	Count	8	12	20
	% within Rank	80%	92%	
Be resilient / quick to recover	Count	7	11	18
	% within Rank	70%	85%	
Be confident in your own abilities	Count	10	13	23
	% within Rank	100%	100%	
Be determined to succeed	Count	8	13	21
	% within Rank	80%	100%	
Have passed your trade training	Count	9	13	22
	% within Rank	90%	100%	
Be experienced in own trade	Count	7	7	14
	% within Rank	70%	54%	
Be a leader	Count	6	7	13
	% within Rank	60%	54%	
Be flexible and able to think quickly	Count	10	12	22
	% within Rank	100%	92%	
Be committed to your team	Count	8	13	21
	% within Rank	80%	100%	
Be competent at writing	Count	8	9	17
	% within Rank	80%	69%	
Be competent at reading	Count	9	8	17
	% within Rank	90%	62%	
Be competent at maths / numbers	Count	6	6	12
	% within Rank	60%	46%	
Be competent at mental arithmetic	Count	3	4	7
	% within Rank	30%	31%	
Be competent with computers	Count	6	5	11
	% within Rank	60%	39%	
Be confident at talking to all ranks	Count	8	12	20
	% within Rank	80%	92%	
Be able to talk in front of groups	Count	6	10	16
	% within Rank	60%	77%	
Be a good listener	Count	9	12	21
	% within Rank	90%	92%	
Be able to understand orders and	Count	10	12	22

instructions	% within Rank	100%	92%	
Be able to give and pass on orders and instructions	Count	8	13	21
	% within Rank	80%	100%	
Be able to learn quickly	Count	5	12	17
	% within Rank	50%	92%	
Be able to work as part of the team	Count	10	13	23
	% within Rank	100%	100%	
Total	**Count**	**10**	**13**	**23**

NB Participants could choose as many responses as they wanted
Categories most closely related to literacy and numeracy skills are shown in bold.

Table 7.10: Perceptions of key attributes/skills involved in OE: evidence from RAF Regimental Gunners and Ground Trades Personnel (line managers and trainees)				
Attribute/skill	Gunners		All other trades	
	N	Percent of Cases	N	Percent of Cases
Be physically fit	8	100%	14	93%
Be mentally tough	8	100%	12	80%
Be able to persevere / not giving up	8	100%	12	80%
Be resilient / quick to recover	8	100%	10	67%
Be confident in your own abilities	8	100%	15	100%
Be determined to succeed	8	100%	13	87%
Have passed your trade training	8	100%	14	93%
Be experienced in own trade	4	50%	10	67%
Be a leader	4	50%	9	60%
Be flexible and able to think quickly	7	87.5%	15	100%
Be committed to your team	8	100%	13	87%
Be competent at writing	3	38%	14	93%
Be competent at reading	3	38%	14	93%
Be competent at maths / numbers	2	25%	10	67%
Be competent at mental arithmetic	1	13%	6	40%
Be confident at talking to all ranks	7	88%	13	87%
Be able to talk in front of groups	5	63%	11	73%
Be a good listener	8	100%	13	87%
Be able to understand orders and instructions	8	100%	14	93%
Be able to give and pass on orders and instructions	7	88%	14	93%
Be able to learn quickly	7	88%	10	67%
Be able to work as part of the team	8	100%	15	100%
Be competent with computers	0	0%	11	73%
Total	138	1725%	282	1880%

NB Participants could choose as many responses as they wanted
Categories most closely related to BS are shown in bold.

Table 7.11: RAF: perceptions of attributes and skills involved in OE: evidence from the RAF Police, Medical Personnel, and other Ground Trades Personnel (working as MT Drivers, Movement and Logistics and Supply and excluding RAF Regimental Gunners).	Police and Medics		Other Trades	
	N	Percent of Cases	N	Percent of Cases
Be physically fit	6	100%	8	89%
Be mentally tough	4	67%	8	89%
Be able to persevere / not giving up	5	83%	7	78%
Be resilient / quick to recover	3	50%	7	78%
Be confident in your own abilities	6	100%	9	100%
Be determined to succeed	5	83%	8	89%
Have passed your trade training	6	100%	8	89%
Be experienced in own trade	3	50%	7	78%
Be a leader	5	83%	4	44%
Be flexible and able to think quickly	6	100%	9	100%
Be committed to your team	5	83%	8	89%
Be competent at writing	6	100%	8	89%
Be competent at reading	6	100%	8	89%
Be competent at maths / numbers	2	33%	8	89%
Be competent at mental arithmetic	2	33%	4	44%
Be competent with computers	5	83%	6	67%
Be confident at talking to all ranks	6	100%	7	78%
Be able to talk in front of groups	4	67%	7	78%
Be a good listener	6	100%	7	78%
Be able to understand orders and instructions	5	83%	9	100%
Be able to give and pass on orders and instructions	6	100%	8	89%
Be able to learn quickly	3	50%	7	78%
Be able to work as part of the team	6	100%	9	100%
Total	**111**	**1850%**	**171**	**1900%**

Table 7.12: Airmen's careers: an evaluation by airmen and line managers				
Airman No.	Airman's own assessment of progress	Line manager's assessment of progress in airman's career	Time intended to stay in RAF	Comment
1 (GTP)	Good	Poor	Would like to serve for 22 years	Line manager: although airman had potential to reach a WO, continued failure of fitness test will lead to his discharge within a few months. Airman apparently unaware of this possibility during interview.
2 (GTP)	Good	Good	Review how career is going after 9 years	Line manager: has potential to reach rank of Cpl but will take him some time
3 (GTP)	Excellent	Excellent	Would like to serve for 22 years	Line manager: trip to Falklands had been the making of her; since then has grown in confidence. Could reach rank of Cpl within 5 more years.
4 (GTP)	Good	Excellent	Would like to serve for 22 years	Airman had severe dyslexia, which had a major impact on ability to write statements and reports. Despite this, line manager judged that he had the potential to 'go a long way' as long as he was able to find suitable coping strategies.
5 (GTP)	Excellent	Excellent	Will review how career is going after 9 years	Line manager judged her to have 'great potential'; could progress 'as far as she likes'.
6 (GTP)	Good	Good	Would like to serve for 22 years	Line manager: could reach rank of Sgt but needed to 'smarten himself up' and show better organisational skills.
7 (GTP)	Excellent	Poor	Would like to serve for 22 years	Discrepancy between assessments of airman and line manager. The airman had been formally diagnosed with severe dyslexia, which in the opinion of the line manager had a significant impact on his basic skills. Line manager did not expect airman to progress beyond the rank of SAC.
8 (RG)	Poor	Poor	Not asked	Airman was injured and was unable to deploy to Afghanistan. Airman did not think his BS were currently good enough to make him OE. Line manager considered that he was not OE, but there were only a few problems that could easily ironed out.

Airman No.	Airman's own assessment of progress	Line manager's assessment of progress in airman's career	Time intended to stay in RAF	Comment
9 (RG)	Excellent	Excellent	Would like to serve for 22 years	Airman had completed two tours and performed well. Line manager: expected to reach rank of Lance Cpl within two more years.
10 (RG)	Poor	No line manager available	Seeking to leave the Service as soon as possible	Airman had completed a tour but was seeking to leave on compassionate grounds within the next few months.
11 (RG)	Good	Good	Will review how career is going after 4 years	Airman has severe dyslexia which was compromising his OE. However, he had performed well during deployment. Line manager: potential for promotion to rank of Cpl within two years. Airman: BS too weak to progress 'very far'; rank of Sgt 'beyond him'.
12 (RG)	Excellent	Excellent	Will review how career is going after 4 years	Performed exceptionally well during deployment. Line manager: potential to reach rank of Cpl within a few months.
13 (RG)	Good	No line manager available	Will review how career is going after 9 years	Appeared to have performed well during deployment.

Key: GTP = Ground Trades Personnel; RG = Regimental Gunner; Cpl = Corporal; Sgt = Sergeant; WO = Warrant Officer.

Appendix B: Sample attrition

B.1 Overview

A total of 1622 recruits completed the Stage 1 survey; 666 of these recruits completed the survey in Stage 2 and 428 in Stage 3. Table B.1 provides more information on the status of Stage 2 and Stage 3 recruits and outlines the main reasons for survey retention and attrition.

Table B.1: Stage 2 and 3 samples, status of recruits				
Status	Stage 2		Stage 3	
	N	%	N	%
Completed Stage 2 questionnaire	666	41	428	26
Provided partial data	14	1	8	0
Outstanding cases	447	28	354	22
Left Army	401	25	543	33
Withdrew from study	42	3	47	3
Unavailable for interview*	27	2	168	10
Not contacted**	23	1	66	4
Recruit started survey, no useable data	2	0	8	0
Total	1622	100	1622	100

Note: * - those coded as 'unavailable for interview' included those unavailable due to injury or death, going AWOL, and being on combat operations with no access to PCs. (This detailed information was collected in Stage 3 only.) ** - Those note contacted include recruits whose contact details were unclear (Stage 2) or who were still in training (Stage 3).

As these data illustrate, the most common reason for survey attrition (a loss in sample size due to non-response) is that recruits from the original sample left the Army: between Stage 1 and Stage 3 data collection 543 of the 1622 recruits (33%) left the Army. Recalculating the retention rate to exclude those who left the Army sees it rise from 27% (proportion of the Stage 1 sample remaining at Stage 3) to 40%. Further information on respondents who left the Army is provided in Appendix C.

A small number of recruits in the quantitative study (n=47, 3% of the total sample of 1622 recruits) indicated during the Stage 1 data collection process that they would not participate in future stages of data collection. The details of a further five recruits were 'lost' in the army database (that is, the research team were unable to trace their details) and two recruits who agreed to participate in the Stage 2 survey did not answer any questions in it.

In order to maximise the sample in the final stage of fieldwork (Stage 3), all available recruits who had completed the Stage 1 survey were contacted by researchers. This means that different patterns of response (see Table B.2) are observed across the achieved sample as some respondents participated in Stage 1 only, some in Stages 1 and 2 only, and others in Stage 1 and 3 only. In order to take into account the differences between the different Stage samples multilevel modelling and growth curve modelling were used during the multivariate analysis stage.

Table B.2: Response patterns for all Stages combined	
Stage(s) of the study trainees participated in	**N**
Stage 1 only	768
Stage 1 and 2	426
Stage 1 and 3	188
Stage 1, 2 and 3	240
Total	**1622**

To investigate the effects of respondent attrition between one stage of the study and another, the similarities and differences between the characteristics of the samples at each stage were explored. If these characteristics are similar, researchers can be (more) confident that the smaller Stage 2 and Stage 3 samples are nevertheless representative of the sample achieved at Stage 1. In turn, this would imply that the analysis undertaken using the Stage 2 and Stage 3 'achieved' samples would reflect the findings and conclusions that would been reached had all the recruits who participated in Stage 1 fieldwork participated in the subsequent stages. The four main characteristics examined were: gender, age, level of literacy and numeracy at Army Initial Assessment (IA) and location of Phase 1 training units.

B.2 Gender

There was a slightly lower proportion of female trainees in the Stage 2 sample compared to the Stage 1 sample (8% compared to 10% of the original sample), indicating that there was a slightly disproportional loss of women from the sample between the first and second surveys. However, the proportion of female trainees in the sample rose again in Stage 3, when 14% of the total sample was female.

B.3 Age

The average age of recruits in the Stage 1 sample *at the start of Phase 1 training* was 18.9 years. In Stages 2 and 3, the average age of respondents at the start of Phase 1 training was slightly older, at 19.5 years. This indicates that there was a disproportionate loss of younger recruits from the sample over the three stages of fieldwork.

B.4 Levels of literacy and numeracy

Table B.3 shows the proportion of recruits in each category of IA in literacy and numeracy for the total Stage 1 sample and for the samples achieved at Stage 2 and Stage 3. Comparing data across the three stages of the study, no significant differences were observed by levels of literacy skills at IA, but there was a slightly higher attrition rate over the three stages of fieldwork for recruits with lower numeracy skills. The Stage 3 sample had a higher proportion of recruits who were assessed at Level1 (L1) in numeracy at the start of their training, and a lower proportion of recruits assessed at Entry Level 3 (EL3) compared to the Stage 1 and Stage 2 samples. This said, it should be noted that these differences are not large and the proportions in other categories are broadly similar across the samples.

Table B.3: % of recruits completing the survey at Stages 1, 2 and 3, by literacy and numeracy level at IA						
	Literacy			Numeracy		
	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3
EL1	3	2	2	1	1	1
EL2	10	8	10	7	6	7
EL3	65	67	69	72	73	68
L1	18	18	15	9	9	14
L2	4	4	3	11	12	10
Total (%)	100	100	100	100	100	100
Total (N)*	1612	664	426	1615	664	427

Note: * - partial or unusable data were obtained for some recruits thus totals are less than totals in achieved sample.

B.5 Location of Phase 1 training unit

Analysis of the survey samples shows that a far larger proportion of the Stage 2 sample started their Army career at Infantry Training Centre, Catterick (ITC(C)) than was the case with the initial sample of recruits (52% of the Stage 2 respondents were at ITC(C) compared to 31% in the initial Stage 1 sample)[239]. The proportions of recruits from each of the other four training units in the Stage 2 achieved sample are smaller than in the original sample (Table B.4). However, at Stage 3, the proportion of the respondents from ITC(C) fell back to 32%, and the overall spread of recruits who completed Stage 3 survey across different training units was very similar to the Stage 1.

Table B.4: % of recruits completing the survey at Stages 1, 2 and 3, by Phase 1 training unit			
	Stage 1	Stage 2	Stage 3
ATR Bassingbourn	12	9	13
Infantry Training Centre, Catterick	31	52	32
Army Foundation College, Harrogate	12	9	7
Army Training Centre, Pirbright	27	18	33
Army Training Regiment, Winchester	18	12	14
Total (%)	100	100	100
Total (N)*	1622	666	428

Note: * - partial or unusable data were obtained for some recruits thus totals are less than totals in achieved sample.

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[239]This pattern is likely due to the arrangement of recruits' training and their dispersal following Phase 1 training. Those who started at ITC(C) were preparing for the Infantry and undertook both their Phase 1 and Phase 2 training there. When contacted to take part in the second stage of data collection, a computer session was arranged at which the trainees could complete the Stage 2 questionnaire. Recruits from other centres, particularly from AFC(H) and ATC(P), were dispersed widely following their Phase 1 training, making them harder to trace and contact in Stage 2.

Appendix C: Detailed statistical analysis

C.1 Characteristics of respondents who left the Army

In the quantitative study, 25% of recruits from the original Stage 1 fieldwork sample left the Army before the end of their 4 years service. Investigating the characteristics of these recruits enables us to uncover whether retention in the Army is associated with poorer literacy and numeracy skills.

Tables C.1.1 and C.1.2 summarise the characteristics of those who left the Army before the end of their 4 years service; those characteristics that are statistically significant, that is, with high reliability, are marked with an asterisk. From individual characteristics only nationality and age have an influence on retention, with British recruits more likely to leave compared with their non-British colleagues, and older recruits having higher retention rates.

Trainees who joined the Army because they did not know what else to do, those who planned to leave before the first commission, those from Combat Arms and trainees from AFC(H) and ATR(W) were more likely to leave.

Regarding their educational background those with GCSEs grade A*-C in Maths and English, those who stayed in full time education for longer, had fewer suspensions from school, those with higher Initial Assessment (IA) in numeracy at recruitment and those with higher numeracy and literacy skills assessed by the survey at Stage 1 had higher retention rates.

Table C.1.1: Characteristics of those who left the Army %, categorical variables			
		%, Left Army	Total (N)
Gender	Male	34	1456
	Female	28	166
Nationality*	British	35	1514
	Non-British	14	108
Family status	Single with children	44	71
	Single no children	34	1453
	Partner no children	33	58
	Partner and children	23	40
Parent(s) in Army	Yes	35	1223
	No	30	393
GSCE English*	No	36	594
	Grade D-G	35	709
	Grade A*-C	25	315

GSCE maths*	No	36	565
	Grade D-G	36	667
	Grade A*-C	27	386
Joined the Army because did not know what else to do*	Yes	46	77
	No	33	1545
Planned to leave the Army before the first commission*	Yes before end	64	59
	Yes at the end	45	136
	No	31	1273
If joined in the trade wanted	Yes	33	1171
	No	35	451
Phase 1 training centre*	ATR(B)	24	193
	ITC(C)	33	507
	AFC(H)	48	196
	ATC(P)	28	437
	ATR(W)	41	289
Arms and Services*	Combat Arms	38	786
	Combat Support Arms	29	402
	Service Support Arms	30	434
Army IA in literacy	EL1	39	41
	EL2	34	160
	EL3	33	1055
	L1	33	287
	L2	39	69
Army IA in numeracy*	EL1	58	19
	EL2	33	114
	EL3	35	1169
	L1	26	142
	L2	30	171
SpLDs	Yes	38	311
	No	33	1308

Note: * p-value =<0.05, statistically significant difference

Table C.1.2: Characteristics of those who left the Army, mean values, *continuous measurements*

	Left the Army	Did not leave the Army
Age*	18.35	19.25
Age left full time education*	16.28	16.88
Times suspended from school*	3.17	1.82
Times expelled from school	0.19	0.14
How hard find physical training	2.57	2.54
How hard found other training	2.92	2.87
Number of self-reported writing difficulties	1.27	1.15
Number of self-reported reading difficulties	0.57	0.54
Number of self-reported maths/numerical difficulties	0.84	0.81
Survey assessment at Stage 1 in literacy*	22.16	22.79
Survey assessment at Stage 1 in numeracy*	9.75	10.21

Note: * p-value =<0.05, statistically significant difference

Because different factors correlate with each other and retention in the Army, regression models were used to investigate a direct association between literacy and numeracy and retention while controlling for other characteristics. For the more complex analysis, logistic regression models have been used to assess whether there is reliable evidence that particular variables are associated with each other. Table C.1.3 presents the results from different logistic regression models.

Logistic regression is a method that summarises the relationship between a binary 'dependent' variable (one that takes the values '0' or '1') and one or more 'independent' explanatory variables. Table C.1.3 shows how the odds ratios for each category in significant explanatory variables compare to the odds ratio for the reference category (always taken to be 1.00). Taking Model 1 as an example, the dependent variable is whether a trainee has left the Army or not. If the respondent left the Army the dependent variable takes a value of 1. If not, it takes a value of 0. An odds ratio of above 1 means that, compared with respondents in the reference category, respondents in that category have higher odds of leaving the Army. Conversely, an odds ratio of below 1 means respondents have lower odds of leaving the Army than respondents in the reference category. Looking at nationality, for example, shows that the non-British recruits have odds ratios of less than 1, indicating that they have lower odds of leaving the Army compared to those in the reference category (British recruits).

Several models were run for the same dependent variable, for example, running a model including demographic factors only in the first instance, then running a second model including significant demographic factors from Stage 1 plus characteristics about their life in the Army. A third model included factors from the second stage, plus literacy and numeracy skills. Running the analysis in these stages allows researchers to explore the extent to which each additional set of factors adds to their ability to explain the dependent variable. Further, it allows researchers to identify interesting variations that might have been masked had we included literacy and numeracy skills measurements in this analysis

in Model 1. Although, sometimes several models were created for one dependent variable, only the final models are reported.

The following variables remained significant across all models: Phase 1 training unit; Arms and Service; age left full time education; plans to leave the Army; reason given for joining the Army because person had nothing else to do; and number of times suspended from school.

The main focus in the models was on the effect of literacy and numeracy levels[240] on the retention when controlling for all other factors. When GCSEs result were introduced into Model 2, these data showed that those recruits with GCSEs A*-C in English were less likely to leave the Army compared to those with no GCSEs in English.

Model 3 shows that those with numeracy at EL2 and L1 as at IA were more likely to stay in the Army compared to those with EL1 numeracy at IA.

Finally Model 4 includes the literacy and numeracy survey assessment and the data suggests that recruits with higher levels of numeracy and literacy were more likely to stay in the Army[241].

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[240] We justify having three separate models with different types of assessment of literacy and numeracy because skills as a concept is a latent variable and different measurement serve only as proxies. These measurements correlate with each other quite highly to be included in the same model, but still cover different things as the regression results show.
[241] The slightly higher p-values for these findings reflect the low number of recruits in EL1 categories.

Table C.1.3: Results of binary logistic regression, *odds ratios reported*				
	Model 1	**Model 2**	**Model 3**	**Model 4**
Constant	0.673	0.403	0.841	0.77
Age [c]	0.965	-	-	-
Non-British	0.415**	0.489**	0.514**	0.522
ATR(B)	1	1	1	1
ITC(C)	1.441	1.421	1.491*	1.412
AFC(H)	3.147**	3.561**	3.335**	3.283**
ATC(P)	1.901**	1.901**	2.042**	1.838**
ATR(W)	2.414**	2.360**	2.454**	2.288**
Combat Arms	1	1	1	1
Combat Support Arms	0.488**	0.567**	0.515**	0.540**
Combat Service Support Arms	0.567**	0.668**	0.627**	0.630**
Did not plan to leave	1	1	1	1
Planned to leave before the end	4.431**	4.494**	4.817**	4.490**
Planned to leave at the end	1.851**	1.928**	1.913**	1.933**
Joined the Army because did not know what else to do	1.702**	1.811**	1.689*	1.662*
Age left full time education		0.807*	0.765**	0.781**
Number of times suspended from school		1.044**	1.048**	1.047**
No GCSEs in English		1		
GCSEs D-G English		0.717		
GCSEs A*-C English		0.462**		
No GCSEs in maths		1		
GCSEs D-G maths		1.523		
GCSEs A*-C maths		1.190		
IA numeracy EL1			1	
IA numeracy EL2			0.395*	
IA numeracy EL3			0.494	
IA numeracy L1			0.371*	
IA numeracy L2			0.514	
Survey assessment literacy below EL2				1
Survey assessment literacy EL2 or EL3				0.508**
Survey assessment literacy L1 or L2				0.621[a]
Survey assessment numeracy below EL2				1
Survey assessment numeracy EL2 or EL3				0.937
Survey assessment numeracy L1 or L2				0.727[b]

Note: ** p-value =<0.05, * p-value =<0.10 statistically significant effects
[a] p=0.13
[b] p=0.11
[c] 'Age' was removed when 'age left full time education' was introduced into the model because of high correlation

C.2 Changes in literacy and numeracy assessment scores

In the second stage of fieldwork, trainees completed the same literacy and numeracy assessment they had taken in Stage 1, which means that researchers are able to evaluate any changes in literacy and numeracy performance across time.

Analysis reveals some changes in the average scores in the survey assessment of literacy and numeracy between the three stages of data collection (Table C.2.1). Overall, average scores on each literacy and numeracy test improved between the first assessment at the start of Phase 1 training and the second at the end or towards the end of Phase 2 training. The average score for the literacy assessment was 23.5 at Stage 1 rising to 23.6 at Stage 2; the average score for the numeracy assessment rose from 10.3 to 10.5 points. The results suggest that there was a statistically significant increase in literacy with a confidence level of 1%[242] and numeracy scores between Stage 1 and 2 with the confidence level of 9%. Although the change in numeracy was also statistically significant between Stage 2 and 3, there was no significant change in literacy. The largest significant individual change in both literacy and numeracy scores occurred between Stage 1 and 3 (23 to 23.8 for literacy and 10.3 to 11.1 for numeracy). It is also important to note that these average scores reflect the whole sample and, where initial levels were higher to start with, in some cases the actual improvement was 0. This decreases the average improvement.

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[242] The usual accepted confidence level in social sciences is below 5%, but sometimes 10% is also used. The confidence level (statistical significance, p-value) represents the chance of the change being random because of some specificities in the data or data collection and not representing true change in the population of interest.

Table C.2.1: Change in numeracy and literacy scores, one-sample t-tests						
		Mean	N	Std. Deviation	Mean individual change	Sig.
Pair 1	Phase 1 numeracy	10.33	642	2.989	0.2	0.093
	Phase 2 numeracy	10.5249	642	3.05491		
Pair 2	Phase 2 numeracy	10.2098	224	2.92134	0.7	0.006
	Phase 3 numeracy	10.8705	224	3.40090		
Pair 3	Phase 1 numeracy	10.26	406	2.921	0.9	0.000
	Phase 3 numeracy	11.1404	406	3.33888		
Pair 4	Phase1 literacy	22.9529	658	4.51710	0.5	0.012
	Phase2 literacy	23.4179	658	4.38103		
Pair 5	Phase2 literacy	23.5339	236	4.13121	0.1	0.779
	Phase3 literacy	23.6229	236	4.91001		
Pair 6	Phase1 literacy	23.0480	417	4.47295	0.8	0.000
	Phase3 literacy	23.8369	417	4.69321		

We used a multilevel growth model[243] to use pooled data (from all 3 Stages of the study) and to take into account repeated observations over time. Further details on the bivariate analysis to explore the relationship between respondents' performance in the tests and any change in the assessment scores and their individual characteristics and characteristics of the provision are provided in Tables C.2.2, C.2.3 and C.2.4. Based on this analysis the variables were selected for the regression models.

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[243] Monitoring trends in student achievement over time can be a powerful tool for assessing the impact of the literacy and numeracy provision. Researchers are often faced with a dilemma of longitudinal data high attrition rates and also deciding whether to look at trends *for a particular level* over time, or trends for *a particular group of students* over time. Multilevel modelling can address these aims. With a multilevel model of test scores over time nested within students, we can use all the data available (pooled data) and we can observe what explains the differences in the initial test scores, the progress of recruits with different literacy and numeracy levels, and changes over time for trainees with different socioeconomic characteristics, with the same statistical analysis.

Table C.2.2: Average assessment scores in literacy and numeracy by characteristics of trainees and their Army life in Phase 1 *(Categorical variables)*					
		Literacy		Numeracy	
		Mean	Total N	Mean	Total N
Gender	Female	22.7	166	8.8**	166
	Male	22.5	1450	10.2**	1443
Nationality	British	22.6	1509	10.1	1502
	Non-British	22.9	107	9.9	107
Mother left education	By 16	22.4	1025	10.0	1021
	Extended	22.9	480	10.1	478
	Not sure	22.6	101	10.3	101
Father left education**	By 16	22.6	1083	10.0	1078
	Extended	22.9	320	10.3	319
	Not sure	21.5	128	9.37	127
SPLDs**	Yes	21.1	311	9.3	307
	No	23.0	1302	10.3	1299
GSCEs English or maths respectively**	No GCSEs	21.7	591	9.5	559
	GCSEs D-G	22.5	706	10.0	660
	GCSEs A*-C	24.5	315	11.0	386
Training unit**	ATR(B)	24.3	192	11.5	191
	ITC(C)	22.4	503	10.0	501
	AFC(H)	23.2	196	10.8	195
	ATC(P)	22.3	436	9.5	436
	ATR(W)	21.7	289	9.6	286
Arms and Services	Combat Arms	22.3	781	9.9	777
	Combat Support Arms	22.7	402	10.1	400
	Service Support Arms	22.9	433	10.2	432
Planned to leave the Army before the first commission	Yes before end	21.5*	59	9.3**	59
	Yes at the end	22.1*	135	9.6**	135
	No	22.6*	1268	10.1**	1263

** p-value =<0.05, * p-value =<0.1

Table C.2.3: Correlations between BS assessment scores in literacy and numeracy by characteristics of trainees and their Army life in Phase 1 *(Continuous variables)*		
	Literacy	**Numeracy**
Age	0.59**	0.04
Age left school	0.12**	0.07**
SES of mother [a]	-0.12**	-0.06
SES of father [a]	-0.14**	-0.06
Number of times suspended from school	-0.05	-0.03
Number of times expelled from school	-0.08**	-0.04
Enjoyed school [a]	0.12**	0.13**
Liked teachers [a]	0.07**	0.10**
How often read outside the Army (magazines and newspapers) [a]	0.12**	0.06**
How often read outside the Army (books) [a]	0.14**	0.06**

** p-value =<0.05, * p-value =<0.1
[a] non-parametric tests are used for correlations because of ordinal type of variable

Table C.2.4: Average change in assessment scores in literacy and numeracy, by characteristics of trainees and their Army life in Phase 1. *(categorical variables)*

		Change between Stage 1 and Stage 2				Change between Stage 1 and Stage 3			
		Literacy		Numeracy		Literacy		Numeracy	
		Mean	N	Mean	N	Mean	*N*	Mean	N
Gender	Female	0.8	55	0.9*	52	1.7	58	2.0**	57
	Male	0.4	603	0.1*	590	0.6	359	0.7**	349
Nationality	British	0.4	601	0.2	586	0.7	370	0.9	359
	Non-British	1.4	57	0.6	56	1.4	47	1.1	47
SPLDs	Yes	0.5	125	0.3	124	0.7	62	0.9	64
	No	0.4	532	0.2	517	0.8	355	0.9	342
Training unit**	ATR(B)	-0.3	61	0.3**	62	0.5	57	0.4**	57
	ITC(C)	0.3	343	-0.1**	339	0.5	133	0.3**	128
	AFC(H)	-0.1	58	-0.9**	56	0.8	30	1.3**	27
	ATC(P)	1.5	118	1.3**	113	1.5	138	1.7**	137
	ATR(W)	0.5	78	0.6**	72	0.1	59	0.6**	57
Arms and Services	Combat Arms	0.3	394	-0.1**	386	0.4	188	0.3**	181
	Combat Support Arms	0.5	124	0.2**	120	1.2	109	1.4**	106
	Service Support Arms	0.9	140	1.0**	136	1.1	120	1.3**	119
IA literacy or numeracy respectively	EL1	0.7	15	0.3	10	-0.8	4	5.3*	3
	EL2	0.7	52	1.8	36	0.6	34	1.0*	28
	EL3	0.4	446	0.7	291	0.2	468	1.1*	274
	L1	0.4	118	0.7	65	0.1	57	0.2*	56
	L2	0.2	25	0.5	13	0.1	77	0.3*	44
Confidence (are your skills […] compared to people you train with?) at Stage 1	Better	0.3*	166	0.3**	103	0.3	139	0.7	81
	Same	0.2*	313	0.5**	210	0.1	268	0.9	176
	Worse	0.7*	108	2.1**	64	0.3	167	1.0	110
	Not sure	1.8*	70	1.5**	40	0.1	68	0.8	39
Phase 1 L&N classes (Stage 2 answers)	Attended	0.7	381	0.6	134	0.3	313	1.25**	116
	Did not attend	0.2	264	0.6	101	0.1	323	0.3**	116
Phase 2 L&N classes or support (Stage 2 and 3 answers combined)	Yes	0.5	247	0.6	218	0.2	218	1.0	190
	No	0.5	398	1.0	197	0.2	415	0.8	214
Wanted to improve L&N at Stage 1 [a]	Yes	0.7**	458	0.9	280	-0.1**	254	0.9	155
	No	-0.1**	200	0.6	137	0.4**	388	0.9	251

** p-value =<0.05, * p-value =<0.1
a reading and/or writing skills for literacy and number skills for numeracy

The results of the regression analysis suggest that female recruits tend to have lower numeracy scores as do trainees with SpLD. Furthermore those respondents who enjoyed their time at school scored higher in numeracy test. Those who wanted to improve their numeracy and thought their numerical skills were the same or worse compared with their colleagues as well as those who attended numeracy classes in Phase 1 had lower numeracy scores across all Stages of the research process. The data also show the differences between three groups of Arms and Services. Trainees in Combat Arms had the lowest numeracy scores compared to both Combat Support Arms and Service Support Arms.

To look at the change in numeracy skills over time in the Army, we introduced a time (represented by research Stage) variable into our model. There was a significant improvement in numeracy scores over three Stages of the study. In addition, the data showed that those with lower initial skills experienced a greater improvement over time. Those who initially wanted to improve their skills, and those who attended numeracy provision in Phase 1, also had a greater increase in their skills. However, when the training unit and research stage (used as a proxy for time) interaction was introduced into the model, attendance of classes became insignificant. This could be explained by the fact that it is not that any provision of numeracy matters for the improvement, but a specific provision that is organised in different ways in different training units. The data shows that trainees from ATC(P) had slightly greater improvement in numeracy than those from AFC(H). Other training units did not have any statistically significant differences from AFC(H) regarding the rate of change in numeracy scores from Stage 1 to Stage 3. It is also worth noting that when model took into account changes in the numeracy scores in each training unit the data showed that trainees in ATC(P) and ATR(W) initial scores in numeracy on average were lower than of those in AFC(H). Whereas in the model without change rate for each training units recruits from ATR(B) and ITC(C) scored higher in numeracy compared to AFC(H).

Table C.2.5: Assessment in numeracy, results of multilevel modelling, linear regression

	Model1 b/se/p	Model2 b/se/p	Model3 b/se/p	Model4 b/se/p	Model5 b/se/p
Female	-1.227***	-1.249***	-1.280***	-1.266***	-1.268***
	(0.375)	(0.375)	(0.375)	(0.375)	(0.374)
	0.001	0.001	0.001	0.001	0.001
Has SPLD	-1.000***	-0.994***	-1.019***	-1.019***	-1.016***
	(0.229)	(0.229)	(0.230)	(0.230)	(0.229)
	0.000	0.000	0.000	0.000	0.000
Enjoyment of school	0.176**	0.178**	0.171**	0.172**	0.172**
	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)
	0.040	0.038	0.046	0.045	0.045
Training unit - reference category AFC(H)					
ATR(B)	1.353***	1.307***	1.153***	0.547	0.471
	(0.428)	(0.428)	(0.437)	(0.801)	(0.803)
	0.002	0.002	0.008	0.495	0.558
ITC(C)	0.822*	0.780*	0.491	0.058	0.043
	(0.438)	(0.438)	(0.471)	(0.758)	(0.758)
	0.060	0.075	0.296	0.939	0.955
ATC(P)	-0.533	-0.571	-0.606*	-2.291***	-2.322***
	(0.366)	(0.366)	(0.366)	(0.701)	(0.702)
	0.145	0.118	0.097	0.001	0.001
ATR(W)	-0.334	-0.369	-0.352	-1.456*	-1.555**
	(0.399)	(0.399)	(0.399)	(0.755)	(0.758)
	0.402	0.355	0.377	0.054	0.040
Combat Support Services	1.388***	1.392***	1.388***	1.403***	1.407***
	(0.389)	(0.390)	(0.389)	(0.389)	(0.389)
	0.000	0.000	0.000	0.000	0.000
Service Support Services	1.656***	1.654***	1.624***	1.614***	1.618***
	(0.381)	(0.381)	(0.381)	(0.381)	(0.380)
	0.000	0.000	0.000	0.000	0.000
Confidence in numeracy - reference category 'better than colleagues'					
Same	-0.751***	-0.745***	-0.748***	-0.739***	-0.737***
	(0.243)	(0.243)	(0.243)	(0.243)	(0.242)
	0.002	0.002	0.002	0.002	0.002
Worse	-1.830***	-1.821***	-1.825***	-1.812***	-1.808***
	(0.294)	(0.294)	(0.293)	(0.293)	(0.293)
	0.000	0.000	0.000	0.000	0.000
Not sure	-1.059***	-1.047***	-1.035***	-1.034***	-1.036***
	(0.341)	(0.341)	(0.340)	(0.340)	(0.340)
	0.002	0.002	0.002	0.002	0.002
Did not want to improve numeracy	0.518***	0.527***	0.503**	0.509**	1.039***
	(0.198)	(0.199)	(0.199)	(0.199)	(0.348)

	0.009	0.008	0.011	0.010	0.003
Stage of the study		0.318***	0.149	0.080	0.218
		(0.089)	(0.123)	(0.131)	(0.151)
		0.000	0.224	0.543	0.148
Attended numeracy classes in Phase 1			-0.948***	-0.523	-0.472
			(0.358)	(0.429)	(0.431)
			0.008	0.223	0.273
Attendance of numeracy classes * Stage			0.356**	0.078	0.046
			(0.177)	(0.238)	(0.239)
			0.044	0.744	0.848
ATR(B)*Stage				0.117	0.155
				(0.306)	(0.307)
				0.703	0.615
ITC(C)*Stage				-0.303	-0.318
				(0.407)	(0.407)
				0.457	0.435
ATC(P)*Stage				0.798***	0.804***
				(0.279)	(0.280)
				0.004	0.004
ATR(W)*Stage				0.434	0.489
				(0.339)	(0.340)
				0.200	0.151
Di not want to improve numeracy * Stage					-0.339*
					(0.182)
					0.063
constant	9.906***	9.427***	10.090***	10.624***	10.419***
	(0.531)	(0.548)	(0.609)	(0.829)	(0.837)
	0.000	0.000	0.000	0.000	0.000
N of observations (pooled data from 696 trainees)	1577	1577	1577	1577	1577

*** p-value =<0.001, ** p-value =<0.05, * p-value =<0.1

The results of the regression analysis literacy assessment results suggest that non-British recruits and trainees with SpLD tend to have lower literacy scores. Furthermore, those respondents who stayed longer in full time education and who read magazines, newspapers and books more frequently at school scored higher in the literacy test. Those who thought their reading skills were the same or worse compared with their colleagues had lower literacy assessment results. The data also showed the differences between three groups of Arms and Services. Similar to results for the numeracy assessment, trainees in Combat Arms had the lowest literacy scores compared to both Combat Support Arms and Service Support Arms. There were no differences across training units.

To look at the change in literacy assessment scores skills over time in the Army, we introduced a time variable (represented by research stage) into our model. There was a significant improvement in literacy scores over three stages of the study. As data suggest, those who started at a higher level in literacy also tend to have a higher improvement rate. However, when the attendance of classes was brought into the model the coefficient of the change was reduced and became non-significant. When training unit and research stage (used as a proxy for time) interaction was introduced into the model, attendance of classes became insignificant. The effect of classes on the change rate in literacy scores was positive, but not statistically significant. Those who were not sure about their reading skills had a higher improvement rate compared to those who said that their skills were better than those of their colleagues. Other factors did not have any statistically significant differences regarding the rate of change in literacy scores from Stage 1 to Stage 3.

Table C.2.6 Assessment in literacy, results of multilevel modelling, linear regression.

	Model1 b/se/p	Model2 b/se/p	Model3 b/se/p	Model4 b/se/p
Female	-0.598	-0.632	-0.654	-0.654
	(0.562)	(0.562)	(0.562)	(0.563)
	0.288	0.261	0.245	0.246
British	1.402**	1.444**	1.411**	1.403**
	(0.614)	(0.614)	(0.614)	(0.615)
	0.022	0.019	0.022	0.023
Has SPLD	-1.253***	-1.239***	-1.258***	-1.264***
	(0.362)	(0.362)	(0.362)	(0.363)
	0.001	0.001	0.001	0.000
Age left full time education	0.186*	0.188*	0.188*	0.186*
	(0.097)	(0.097)	(0.097)	(0.098)
	0.057	0.054	0.053	0.057
Enjoyment of school	0.148	0.149	0.142	0.144
	(0.137)	(0.137)	(0.137)	(0.138)
	0.282	0.278	0.302	0.297
Frequency of reading magazines and newspaper	0.213**	0.212**	0.211**	0.212**
	(0.099)	(0.099)	(0.099)	(0.099)
	0.031	0.032	0.032	0.032
Frequency of reading books	0.182**	0.186**	0.184**	0.182**
	(0.089)	(0.089)	(0.089)	(0.089)
	0.041	0.037	0.039	0.042
Confidence in reading - reference category 'better than colleagues'				
Same	-0.724**	-0.724**	-0.717**	-0.502
	(0.341)	(0.341)	(0.341)	(0.601)
	0.034	0.034	0.036	0.404
Worse	-2.555***	-2.548***	-2.537***	-3.151***
	(0.467)	(0.467)	(0.467)	(0.788)
	0.000	0.000	0.000	0.000
Not sure	-1.814***	-1.813***	-1.783***	-3.449***
	(0.504)	(0.504)	(0.504)	(0.904)
	0.000	0.000	0.000	0.000
Training unit - reference category AFC(H)				
ATR(B)	0.727	0.679	0.587	0.622
	(0.661)	(0.661)	(0.667)	(0.667)
	0.272	0.305	0.379	0.351
ITC(C)	0.682	0.643	0.420	0.429
	(0.676)	(0.676)	(0.711)	(0.711)
	0.314	0.342	0.554	0.546
ATC(P)	-0.448	-0.487	-0.499	-0.485
	(0.586)	(0.586)	(0.586)	(0.587)
	0.444	0.406	0.395	0.409
ATR(W)	-0.122	-0.162	-0.150	-0.140
	(0.606)	(0.606)	(0.606)	(0.607)
	0.841	0.789	0.805	0.818
Reference category - Combat Arms				
Combat Support Services	1.168**	1.177**	1.189**	1.167**
	(0.587)	(0.587)	(0.587)	(0.588)
	0.047	0.045	0.043	0.047
Service Support Services	1.334**	1.341**	1.334**	1.317**
	(0.576)	(0.576)	(0.576)	(0.577)

	0.021	0.020	0.021	0.022
Stage of research		0.361***	0.247	0.148
		(0.126)	(0.190)	(0.282)
		0.004	0.193	0.598
Attended literacy classes in Phase 1			-0.689	-0.662
			(0.526)	(0.524)
			0.191	0.207
Attendance of literacy classes*Stage			0.207	0.196
			(0.253)	(0.253)
			0.415	0.437
Reference category - reading skills 'better than colleagues'				
Same*Stage				-0.134
				(0.309)
				0.663
Worse*Stage				0.381
				(0.396)
				0.336
Not sure*Stage				1.028**
				(0.465)
				0.027
Constant	17.423***	16.791***	17.341***	17.545***
	(2.101)	(2.112)	(2.151)	(2.180)
	0.000	0.000	0.000	0.000
N of observations (pooled data from 696 trainees across 3 Stages)	1597	1597	1597	1597

*** p-value =<0.001, ** p-value =<0.05, * p-value =<0.1

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