The BBC's Response to the Business Innovation and Skills Committee Inquiry into Adult Numeracy and Literacy

Written evidence by the BBC submitted to the Business Innovation and Skills Committee inquiry into Adult Numeracy and Literacy

Introduction

1. We welcome the opportunity to respond to the Business, Innovation and Skills Committee's inquiry into Adult Numeracy and Literacy. This is an important issue and we hope that the BBC submission provides valuable insight for the Committee's inquiry.

2. It would be inappropriate for the BBC to comment on the first two questions of the inquiry relating to the Government's role and activity. We have therefore focused only on the third question: *What are the best ways to help adults learn how to read, write and do maths—through formal education providers or in a different way?*

3. Our submission will cover the following:

    - The role of the BBC
    - BBC approach to supporting adult skills learning
    - The BBC approach in the context of the adult basic skills education sector
    - Key insights from our experience, consultation and research
    - Examples of the BBC's approach based on our key insights

The role of the BBC

4. The BBC has an important responsibility in this area and has been committed to education and learning since our first schools broadcast in 1924. This commitment is part of our core mission to educate, as well as inform and entertain, and drives much of our output.

5. One of the six public purposes of the BBC, as set out in the Charter and Agreement, is to promote education and learning. In outlining the priorities of this purpose, the BBC Trust stated that the BBC should *support adult education, especially related to essential skills development,*[1] setting a clear requirement that the BBC should create and provide content that helps adult audiences develop their basic numeracy and literacy skills.

BBC approach to supporting adult skills learning

6. The BBC Learning department leads the BBC's strategy 'to inspire a life full of learning for everyone' by exploiting the educative potential that exists across the full range of the BBC's output and activities, from news to music, science to the arts, sport and drama.

7. The Learning department works with some of the BBC's best known programmes, brands and talent to maximise their learning value and take advantage of the revolution in technology that brings radio, television and the internet ever closer together.

The BBC commissions TV and Radio programming which addresses adult basic numeracy and literacy skills

8. In commissioning broadcast content, our approach to adult basic numeracy is to have a focus on real-world maths that people can use to help them save money and improve skills at work. For example, we have worked with consumer programmes such as BBC One's *Rip Off Britain* and *Watchdog* to create clearer graphic representations of the maths on screen and unpick some of the maths behind consumer issues, such as debt or understanding APR on loans.

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[1] BBC Public Purposes http://www.bbc.co.uk/aboutthebbc/insidethebbc/whoweare/publicpurposes/education.html

9. In our approach to literacy, we have made programmes intended to raise awareness of the extent and impact of poor literacy skills. Dramas, such as *Secrets and Words,* broadcast in the weekday afternoon, are aimed at normalising the issue by making the characters relate-able and demonstrating a positive resolution. Our Radio 2 Book Club focuses on broadening the appeal of reading by extending the coverage across the station and working closely with the Reading Agency to offer a wider selection of books, including Quick Reads, for the less confident reader.

10. Drawing on external partnerships such as these is a key part our approach to enriching our content and we work closely with organisations like Niace to ensure our resources are as effective and as widely shared as possible.

Skillswise is an online resource designed to be tutor mediated and learner facing

11. BBC Learning makes full use of digital, interactive technology to provide specialist learning resources for many audiences, including for adult learners and their tutors. Online is vital to supporting adult learners in developing essential skills and the majority of our adult numeracy and literacy content is available online through the [Skillswise website](.)[2] Skillswise provides over 120 online videos, 60 interactive games, hundreds of quizzes, mobile phone tools and thousands of printable activities for adults learning and teaching maths and English.

12. For significant numbers of low-literacy adult learners in particular, when a tutor introduces them to Skillswise, it is the first website they have used. Skillswise is the most used learning resource by the million plus UK adults in literacy and numeracy classes. There are more than 1 million unique browsers to the website per quarter, with many more experiencing Skillswise content in a classroom setting via interactive whiteboards, and print resources presented by tutors. The website's reach is growing by around 20% each year.[3]

13. The aim of Skillswise is to provide tools for adults to master the global languages of English and maths. This may be part of gaining a formal qualification, or often for enjoyment, boosting self-esteem, brushing up practical skills for work or everyday life, or helping children. Skillswise thus helps to fulfill the BBC's public purpose of promoting education and learning amongst its audience.

Skillswise is aimed mainly at adults who did not achieve a C in GCSE Maths and English (or equivalent).

14. The government's Skills for Life (SfL) survey of adults in England in 2011, projected onto the adult population of the UK as a whole, suggests that around 25 million adults (49%) have maths skills at no higher than primary school level, and that 8 million adults (15%) have a similarly low level of literacy.[4] Over 100,000 16-year olds failed to achieve above an F grade in GCSE maths last year. There is a strong correlation between low maths and literacy skills and low family income, low parental educational achievement, poor mental and physical health and poor overall educational attainment. The stories of how low skills impact UK adults are regularly reported by BBC News.[5]

15. From the BBC's perspective low skills may also impair adults' ability to access the full range of BBC output thus hindering our public service aims. For example, maths and literacy skills are needed for full engagement with news, weather, and other programmes.

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[2] http://www.bbc.co.uk/skillswise
[3] BBC internal online traffic statistic reporting 2011-2013
[4] Skills for Life Survey 2011: https://www.gov.uk/government/publications/2011-skills-for-life-survey
[5] For example - http://www.bbc.co.uk/news/education-25945413

The BBC approach in the context of the adult basic skills education sector

Over recent years the approach to adult basic skills education has changed

16. Skillswise was launched in 2001 in the same year as the introduction of the government's SfL programme. Originally, Skillswise content was aimed at learners working towards Level 1 (or equivalent). More recently it expanded into the lower Entry levels.

17. The SfL curriculum, based largely on the national curriculum for schools with multiple choice exams framework and a programme of free adult literacy and numeracy classes, enabled millions of adults to achieve their first qualification. According to a 2011 SfL survey, the impact on adult skills levels since 2003 was most significant in literacy, where the proportion at Level 2 or above grew from 44% to 57% – although the change in the number of adults at Entry level in literacy was marginal, moving from 16% to 15%. In maths the number of adults at Level 2 or above actually dropped from 26% to 22%, while the number at only Entry level went up slightly from 47% to 49%.[6]

18. Research suggests that those adults with Entry level skills often had negative experiences of school. This may be one factor in the relative lack of engagement with SfL classes by the lowest skilled.[7]

Inspiring Entry level adults to learn new literacy and numeracy skills is a key challenge for BBC Learning.

19. There has been a radical shift in formal adult basic skills education since 2011, partly to engage Entry level adults, away from school-type curriculum-mapped activities such as SfL, towards learning in the context of familiar adult situations, benefitting from adults' own existing knowledge, experience and interests.

20. The new functional skills frameworks – as frameworks in Scotland have done for several years – focus on skills used in authentic, real-world situations. Assessment is largely open-ended, as opposed to former SfL multiple choice exams. For example, speaking and listening skills may be assessed by observing discussions in the workplace.

21. In particular, functional skills frameworks recognise the value of being able to transfer skills from familiar to unfamiliar contexts. For example, the Ofqual framework for functional English – Speaking and Listening is typical:

   - "*Entry level:* Respond appropriately to others and make some extended contributions in **familiar** formal and informal discussions and exchanges.

   - *Level 1:* Take full part in formal and informal discussions and exchanges that **include unfamiliar subjects**.

   - *Level 2:* Make a range of contributions to discussions in **a range of contexts, including those that are unfamiliar**, and make effective presentations."[8]

22. Crucially, the functional skills frameworks recognise that familiar contexts are different for each learner – for an apprentice hairdresser, working out ratios of hair dye at a hairdressers may be a familiar context, whereas crossing rugged terrain may not. Whereas for an army apprentice the opposite may be true. So at Entry level the assessment is devolved to the local training provider who can judge what a suitable familiar context is for individual learners. At Level 1 and 2, written papers assume that by including questions based on at least three diverse situations, at least one will be unfamiliar. If traditional school-classroom type 'transmission' models – of attempting to transmit a curriculum of abstract concepts to learners, in order to test their understanding of them later – are not working well for the lowest-skilled adult learners, what approaches do work best?

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[6] Skills for Life Survey 2011 https://www.gov.uk/government/publications/2011-skills-for-life-survey
[7] Numeracy Research Briefing. NRDC (2008) http://www.nrdc.org.uk/download.asp?f=4022&e=pdf
[8] Ofqual Functional English framework for Speaking and listening http://ofqual.gov.uk/ofdoc_categories/subject-criteria/functional-skills-subject-criteria/

23. The BBC has consulted widely with adult learners, practitioners, academic researchers, representatives of sector skills councils, charitable agencies such as Niace and the Reading Agency, employers, community centres and others to identify what works best for adult learners. We have also visited adult skills classrooms around the country, and held a series of workshops for invited experts at the BBC in Salford and London, on themes such as apprenticeships, reading groups, and the use of videoclips in learning.

24. The BBC has also drawn on published research from the Department of Education and BIS, as well as recent academic research into learning theory and what works best for adult learners in practice. In particular, we have drawn on research from countries which appear to have relatively successful educational practices, such as the Netherlands and Singapore in maths, and the research informing successful online learning environments such as the Moodle platform used by the Open University and many other institutions.

Key insights from our experience, consultation and research

25. We believe that the following points underpin an effective approach to the teaching and learning of basic adult numeracy and literacy skills.

Firstly, learning can be understood as telling new stories about yourself, both to yourself and to others

26. The stories which students are told about themselves and then retell, at home, school and work, and mentally to themselves as 'self-talk,' may be a factor in their attitudes to maths and English. "If you spend all your life being told you can't do something, I think it sticks with you after a while… I had it from school you can't do that. And some things stick with you."[9]

27. In many adult situations paper qualifications are only of limited practical value, and the ability to tell a convincing story about yourself and others is key. For example, in work – at job interviews, in sales, customer service, dealing with suppliers, managing people, in meetings, writing reports, making presentations. At home – telling stories to children, speaking on their behalf to health workers, recounting family stories, allocating household tasks, budgeting. And in everyday life – negotiating deals, swapping stories with friends and family, discussing news and sport, asserting your legal and consumer rights and rights to benefits, engaging with the criminal justice and parole system, talking to doctors.

28. The stories we tell to others and mentally as 'self-talk' to ourselves are closely entwined with our sense of identity. For example a successful apprentice plumber not only achieve a qualification, he or she 'becomes' a plumber in their own eyes and the eyes of a community, they become able to tell new, credible stories of themselves every day, to say convincingly to others and themselves: "I am a plumber" with all the trust, esteem and economic value that confers. The formal qualification, though it may be very useful in telling this story, is not essential to it.

29. Broadcast, online and print media, social media and above all personal mediators – tutors, friends, colleagues, family – can stimulate adults to tell new stories. In order to encourage adults to tell new stories, it is important to listen to adult learners and value the stories they tell. Physical objects, images and other stories can also help catalyse story-telling and dialogue. For example an antique brought into the Antiques roadshow.

30. Online spaces – especially with the advent of social media – may offer relatively safe, supportive environments in which to tell new stories to others about ourselves and things we have done. Moodle, the open-source online learning environment used by the Open University and many other educational organisations, states in its philosophy: "constructionism asserts that learning is particularly effective when constructing something for others to experience. This can be anything from a spoken sentence or an internet posting, to more complex artifacts like a painting, a house or a software package."[10]

31. Reading groups similarly offer informal situations in which people are encouraged to tell stories and give opinions, stimulated by reading a book.

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[9] Adult student, quoted in Beyond the Daily Application. NRDC (2005). http://www.nrdc.org.uk/publications_details.asp?ID=29#
[10] http://docs.moodle.org/24/en/Philosophy

Secondly, people are most confident in telling stories in familiar situations

32. Familiar situations are usually the ones we are most confident in, to take new actions and tell new stories. "The best, perhaps the only, workable way to develop a new discourse is by gradual transformation of a discourse in which the [learner] is already conversant."[11]

33. For educators working with adult learners, this implies identifying a situation familiar to the learner as a starting point. And either visiting this place in the real world, or representing it or referencing it in a learning space.

34. The challenge is how to build confidence in telling stories in familiar situations, and then transfer this into unfamiliar situations we may wish to, or have to, deal with.

Finally, "transferable models" enable learners to model the stories they are telling in familiar situations, then use these models to help them tell new stories in unfamiliar situations

35. Learning theory around "boundary objects" that enable us to cross boundaries from familiar to unfamiliar contexts and communities, suggests that often quite simple, generic objects can help us communicate in unfamiliar contexts. For example an architect's plan can also be used by construction workers, council officers, lawyers and home buyers and empower them all to tell their own stories to each other.

36. Research suggests that systematic use of simple transferable visual models of number is one of the key reasons for the success of Singapore in international maths education surveys such as PISA: "People have different views about the reasons for Singapore students' performance, but one thing that is universally agreed is that the Singapore model method is key."[12]

37. Similarly in the Netherlands, the principle of "Real Mathematics Education" (RME) starting with authentic contexts and modelling them with visual models such as number lines has been a key factor in the Netherlands' success in international skills surveys such as PIAAC. The use of problems in authentic context is very significant in RME. In order to fulfill the bridging function between the informal and the formal, the familiar and the unfamiliar, models have to shift from a "model of" to a "model for." It is also crucial for the RME teaching methods is that students are offered opportunities to share their experiences with others – to tell the stories of what they have done."[13]

38. Transferable visual models and objects can facilitate story-telling in new contexts, for example in story-telling "sacks" or "shoeboxes" used in family learning, in which parents and children keep objects they can tell stories about, and transfer between home and children's centres. Similarly mobile phone-based tools to visualise numbers can be transferred between work and home.

39. The ease with which visual models or concrete objects can be literally seen and grasped means they can be powerful portable 'props' for telling convincing stories to ourselves and others: "Visual realizations may be *symbolic, iconic* or *concrete.* The special strength of iconic and concrete mediators is that they may lead to new endorsed narratives, with only a relatively small number of verbal manipulations (reasoning actions). The symbolic means, on the other hand, are basically verbal and thus exert greater demands on one's memory."[14]

40. For maths, simple "Singapore style" blocks, based on a unit block – either concrete or drawn – can support learners in talking about most mathematical situations, and are transferable to a wide variety of contexts.

41. For English, representations of words, sentences and texts as visual models can support thinking and talking about the language – either literally representing the sounds of written words, visualising parts of speech by colour coding,[15] or visualising dialogue as speech bubbles. This enables learners to compare words and patterns of language used in diverse familiar and unfamiliar contexts.

[11] Sfard, A, Thinking as Communicating, p.259
[12] http://www.bbc.co.uk/skillswise/0/24925787
[13] http://www.did.stu.mmu.ac.uk/msm/rme.html
[14] Sfard, A, Thinking as Commiunicating, p.162d
[15] https://www.teachingenglish.org.uk/article/cuisenaire-rods-language-classroom

42. Transferable models of a familiar situation may empower learners to understand that situation, i.e. to tell convincing stories about it, both to themselves mentally and to others verbally; and then to understand other situations more easily. For example a hairdresser wishing to make up a total 150ml volume of dye and releaser in a 1:3 ratio may find it useful to visualise it as a 'bar' of 150ml split into four equal parts, 1of dye and 3 of releaser. The same visualisation model might be used by an army logistics apprentice to visualise the average daily distance they need to cover to travel 150 miles in four days, or by a bus engineer investigating an accident to calculate the weight per wheel of a 15 tonne bus. With re-use these models themselves become familiar, useful tools to visualise, think about and solve problems.

There are ongoing challenges in supporting adult learning

43. There are significant issues with audiences with low levels of literacy skills, in particular in terms of communicating and engaging using written text, and correlations with lower ICT skills, for example the use of QWERTY keyboards to type into search engines. Increasingly, as desktop home broadband penetration plateaus and smartphone penetration continues to rise, mobile phones are becoming a more viable option for accessing BBC content online and offer a more familiar tool than a desktop computer for some adult learners. For this reason, BBC Learning in the process of revamping its online knowledge and learning product (the BBC's online home for all our factual and educational content, including Skillswise) to become fully responsive. This means that the websites adapts and works consistently whatever size of screen, whether laptop, tablet or mobile. The recently launched iWonder interactive guides for the World War One season (http://www.bbc.co.uk/ww1) demonstrate this.

44. For low-skilled adults in general, and low-literacy adults in particular, a personal face-to-face approach, mediated by a tutor, family member or colleague, may be equally, if not more effective, than a TV or radio broadcast in engaging an adult in learning activities. The role of informal mediators has particular potential in workplaces where employees and union learning representatives often informally support colleagues and apprentices; in community settings where friends and informal mediators such as respected local community figures, librarians and networks around leisure activities or places of worship may support learning, as well as members of online communities; and in family learning where Children's centre staff, nursery staff or primary school teachers for example may mediate in parents' learning.

45. The BBC is a story-telling organisation. Education can be understood as 'drawing out' new stories from learners. As well as aiming to inform and entertain by telling stories – news stories, factual documentaries, sitcoms, dramas etc – the BBC also has a tradition of 'educating' not just by supporting educators, but by literally educating or 'drawing out' new stories from audiences. In the educational sense, the BBC for many adults is a trusted brand and BBC-hosted places, whether on TV, radio, in real-world events or online, may be seen as a relatively 'safe' space for story-telling, free from motives of commercial exploitation.

46. Based on the three principles outlined above, a key challenge is then: (a) How can we encourage learners to tell stories about situations familiar to them, (b) using 'transferable models', (c) re-using these models as tools to tell new stories in unfamiliar situations?

Examples of the BBC's approach based on our key insights

a) Encouraging learners to tell stories about familiar situations

47. **BBC Skillswise maths and English topic intro videos:** The short-form videos introducing each topic present adults telling stories of how and why they use numbers or language in authentic everyday situations. Each includes at least three different real-life contexts, with the aim that at least one will be familiar to a given learner. By showing adults talking about maths and English in familiar situations, the films are designed to stimulate learners in class to articulate similar stories from their own experience. Tutors may then use learners' own stories as starting points to build their confidence and skills with the concepts. For example:

      (1) Stories of negative numbers in lifts, bank balances and electricity meters: http://www.bbc.co.uk/skillswise/topic/negative-numbers

(2) Stories of reading football match programmes, children's books, romantic novels and recipes: http://www.bbc.co.uk/skillswise/topic/reading-for-pleasure

48. **BBC Skillswise *Secrets and Words* video-clips and printable resources:** BBC Learning commissioned six dramas with lead characters who struggle with literacy. Skillswise produced online resources around short-form clips edited from the dramas. For example, modelling a father and his daughter taking turns to read a story aloud (http://www.bbc.co.uk/skillswise/learners/secrets-and-words/secrets-and-words-kathleen-megan-and-jimmy). To encourage adults to try this themselves after watching the clip Skillswise published a script of a dramatic scene from Dr. Who for parents to read aloud with a child. Research by the NRDC (http://www.nrdc.org.uk/publications_details.asp?ID=109) suggests screenplays are a valuable resource to boost skills and confidence in reading and listening to stories, which may then be transferred to telling your own stories.

49. **Reading groups: Simon Mayo's Book Club on Radio 2; Skillswise audio, video and printable resources for reading groups**: Reading groups stimulate adults to tell and listen to each others' opinions about the books they have read, which often leads to people telling stories about relevant experiences from their own lives. Taking part in a reading group can now count as a formally assessable credit, in speaking and listening skills, towards a functional English qualification. BBC Learning works with Simon Mayo's Book Club on Radio 2 to promote reading groups and Skillswise produces resources to support reading groups for low-literacy adults, based around the easy-to-read Quick Reads books (www.bbc.co.uk/quickreads).

50. **Phonics with accents:** Synthetic phonics is a valuable approach to reading for adults as well as children, which starts with the familiar – spoken English – and breaks downs words into sounds before looking at how the sounds are commonly written. Many synthetic phonics resources assume that learners speak 'received pronunciation' English, whereas in practice most learners have distinct regional accents. For example the word 'car' consists of two sounds in received pronunciation 'c-ar', but many learners with Scottish, Northern Irish or West Country accents would pronounce the 'r' as a third sound 'c-a-r'. The Skillswise phonics tool enables users to choose an accent most familiar to them and break down words in that regional accent: to map the sounds they speak to letters (http://www.bbc.co.uk/skillswise/factsheet/en01soun-e3-f-phonics-tool-guide).

b) Using 'transferable models'

51. **Visual models of number used in BBC One's Rip Off Britain**: BBC One Consumer show *Rip Off Britain* has worked with Skillswise to promote the use of 'Singapore maths-style' visual models of number for modelling familiar and unfamiliar consumer scenarios:

(1) The programme promoted a Guide to Getting a Good Deal booklet (free to download or receive by sending an SAE http://www.bbc.co.uk/skillswise/learners/rip-off-britain/article-learning-rip-off-britain) which used transferable visual bar models to model pensions (p.15), sales discounts (p.19), and gold price and purity (p.20).

(2) The programme featured sections showing how shoppers can use Skillswise's interactive visual bar model on their mobile phone to model percentage discounts in sales (http://www.bbc.co.uk/skillswise/video/ma18comp-v-whats-the-deal).

(3) Skillswise edited in graphics based on visual models into clips from the programme to model a story on mortgages (http://www.bbc.co.uk/skillswise/video/ma16perc-v-pennys-story-shared-appreciation-mortgage).

52. **Interactive visual models of number linked to BBC news articles**: Skillswise produced articles and interactives based on visual models of number:

(1) **Article on Singapore maths models:** http://www.bbc.co.uk/skillswise/0/24925787

(2) **Interactive payday loan calculator:** http://www.bbc.co.uk/consumer/24746198

53. **Visual models of the sounds of English.** In the Skillswise Phonics tool, which learners can click on and move around on screen (http://www.bbc.co.uk/skillswise/factsheet/en01soun-e3-f-phonics-tool-guide).

54. **Visual models of English word roots**. Printable resources around a Quick Reads book visualised the etymological roots of the words on the first page of Lynda La Plante's Quick Read *The Escape* (http://downloads.bbc.co.uk/skillswise/quickreads/qr2014/a-locked-room-qr2014.pdf).

c) Using 'transferable models' to tell new stories in unfamiliar contexts

55. Wherever possible the transferable models described above are designed not just to be used in their original context but also to be transferable into new contexts, in particular on mobile devices, which enable interactive models to be literally carried into new situations and used as tools for understanding and problem-solving. For example from the classroom to the home, from the workplace to shops and restaurants etc.

56. The mobile phone percentage tool can be used to model sales discounts in the classroom, then carried into shops in the real world to work out discounts in practice, into restaurants to add a percentage service charge, or into the workplace to add VAT (http://www.bbc.co.uk/skillswise/learners/mobile-tool).

57. The interactive payday loan calculator is designed to encourage users to play with it, to ask "what if?" to model and tell new stories from imagined contexts. For example what if I couldn't pay back my payday loan on time and had to refinance? What if I borrowed from a credit union instead of a payday loan company? The model enables users to visualise these new situations by physically dragging the bars in the model (http://www.bbc.co.uk/consumer/24746198).

58. The printable cut-out counters in the Singapore maths article are designed to be used with children in a range of more or less familiar contexts, to encourage them to transfer the visual 'box' model to new situations: to count age in years, pieces of fruit, goals in football etc (http://www.bbc.co.uk/skillswise/0/24925787).

59. The phonics tool can be used to model new words and phrases as well as the pre-set vocabulary. In Stage 3 of the tool users can type or paste in new phrases and convert them into phonemes (http://www.bbc.co.uk/skillswise/factsheet/en01soun-e3-f-phonics-tool-guide).