

Curriculum development

An evolving model for adult literacy and numeracy education



Change

Social Practice



Critical awareness

Learning


NALA

National Adult Literacy Agency
Áisíneacht Náisiúnta Litearthachta do Aosaigh

Curriculum development

An evolving model for adult literacy
and numeracy education

Written by: Jenny Derbyshire, Pauline Hensey, Bláthnaid Ní Chinnéide

Published by: National Adult Literacy Agency, Dublin, 2009

© NALA, 2009

ISBN: 978-1-907171-07-9

The National Adult Literacy Agency (NALA) was established in 1980 and is an independent membership organisation, concerned with developing policy, advocacy, research and advisory services in adult literacy work in Ireland. NALA has campaigned for the recognition of, and response to, the adult literacy issue in Ireland.

Contact NALA at:

National Adult Literacy Agency

76 Lower Gardiner Street

Dublin 1

Tel: +353 1 8554332

Fax: +353 1 8555475

Email: literacy@nala.ie

Web: www.nala.ie

Acknowledgements

We would like to thank the following people.

- All those who participated in the 'Exploring Curriculum' event in Dublin on 12 February 2009 where the evolving model was presented and discussed
- The 'critical readers' who gave feedback on the draft of this document: Kathleen Cramer, Maggie Feeley, Kieran Harrington, Gretta Vaughan, Michael Power and Karina Curley
- The NALA Executive and staff
- The research team from the National Research and Development Centre (England) who carried out the NALA research project on curriculum in adult basic education from 2005 – 2007: Jane Mace, Juliet McCaffrey and Joan O'Hagan. Their research and reports provided an important resource for this document.

Introduction

This evolving model of curriculum development shows how the principles, philosophy, values and practice described in NALA's publication *Guidelines for Good Adult Literacy Work* (NALA, 2005a) apply to curriculum development in adult literacy work. This is seen as an evolving model to recognise that the model is likely to change, to evolve, as we all learn more about how curriculum development works in practice in Ireland.

The model is relevant to many different contexts and in relation to many different programmes, including literacy as part of training courses, workplace literacy, family literacy, education in prisons and distance learning, as well as work in local adult literacy centres.

We offer this evolving model at a time when the adult literacy movement in Ireland has increasingly moved into the mainstream of the education system. This has followed the International Adult Literacy Survey in 1997, and the subsequent increase in State funding for adult literacy provision. The shift 'from the margins' to the centre, from adult literacy 'movement' to adult literacy 'service', has brought with it increased opportunities and new challenges for adult literacy providers, practitioners, learners and NALA.

One of the challenges is to maintain and strengthen curriculum development processes that are critically aware, flexible, responsive, learning-centred and learner-directed.

In the model and discussion we refer to adults who are working on their literacy development as 'learners'. This is because we wish to include people working in many different settings where a range of terms apply, such as 'trainees', 'participants' and 'distance learners'. We recognise that 'students' is the best word for people studying in adult literacy centres.

Section 1 | Key concepts

There are many theories and definitions of curriculum (Mace et al, 2006, p.10 – 14). This model is influenced by a definition that places a focus on the process by which learners, tutors and other partners 'identify, plan, act and reflect on learning activities' (Mace et al, 2006). The model therefore describes a **process for developing curriculum**. This is a **participative** process carried out by learning partners, such as tutors and learners, with support from organisers, managers and others involved. The model **does not** describe the content of a curriculum. That is created by the learning partners.

The emphasis is on how the learning partners work together in deciding how and what to learn. This understanding of curriculum is in tune with learner-directed approaches, which are core features of adult literacy and numeracy work (NALA, 2005a). In a learning-centred curriculum everyone involved learns through taking part in the process of curriculum development.

The model reflects a view of literacy as social practice and is "informed by an emancipatory interest... which expects both to start with and to transform the learner's experience" (Mace et al, 2006, p.14). One of the main causes of adult literacy difficulties is inequality – social, cultural, educational, economic, political. Education, including adult literacy education, is never neutral. It can maintain unjust and unequal relations of power, or it can reflect and promote emancipation (Freire, 1970; Baker et al 2004). In proposing this evolving model of curriculum development, NALA intends



it to support ways of working that reflect and promote equality, respect, social justice and care.

More than skills

In NALA's definition, literacy development is connected with opportunities for personal and social change:

“Literacy involves listening and speaking, reading, writing, numeracy and using everyday technology to communicate and handle information. It includes more than the technical skills of communication: it also has personal, social and economic dimensions. Literacy increases the opportunity for individuals and communities to reflect on their situation, explore new possibilities and initiate change.”

(NALA, 2005a, p.12).



Curriculum development is central in making these dimensions and opportunities real. Literacy practices, events and texts always involve not just knowledge and skills, but emotions, experience and perspectives. This means that curriculum development is not just about building technical skills, or about developing personal qualities of self-confidence and self-esteem. It is about all of that, and more. It is about creating the conditions that enable adult literacy learners to become increasingly effective participants in multiple literacy practices.

In its publication *Guidelines for Good Adult Literacy Work* (2005a), NALA introduces aspects of the philosophy, principles and approaches that underpin good adult literacy work and guide this evolving model for curriculum development.

NALA sees literacy work as most effective when:

- there is respect and equality between all participants;
- learners explore their needs and interests, their uses of literacy and numeracy and actively choose what and how to learn;

- learners have the opportunity to be involved in all aspects of provision;
- different beliefs, cultures and ways of being are respected;
- it is based on a philosophy of adult education that is concerned with both personal development and social action (NALA, 2005a, p.16-17).

In adult life, confidence in literacy opens many doors related to work and personal development, involvement in children's learning, community and leisure activities. Attention to the social and cultural aspects of literacy supports wider learning, gives meaning to skills-based work and respects the adult's perspective on the role of literacy in their lives (NALA, 2005a).

Numeracy

NALA's definition of literacy includes numeracy as an integral part: "Numeracy and basic technological skills are integral elements of literacy as everyone faces a range of mathematical and technological demands in everyday life" (NALA, 2005a, p.13).

Numeracy's association with literacy gives it strength. However, as there is a need to develop numeracy in its own right, NALA also defines numeracy separately, as a life skill that gives adults the confidence to manage the mathematical demands of real-life situations and to make choices and decisions (NALA, 2004).



People tend to think about numeracy and mathematics in one of two ways (Mace et al, 2009, p.25). Firstly, numeracy can be thought of as a small part or subset of maths. In this view, numeracy is to do with mastering the 'basic skills', such as whole numbers, adding, subtraction and decimals. Another way of thinking about numeracy is to see it as 'bigger' than mathematics. To be numerate therefore means more than 'being good at maths'. It means maths, plus 'other thinking' such as using common sense, understanding context, noticing patterns and relationships,

wanting to shape the world in some way (Mace et al, 2009). This way of thinking about numeracy underpins the NALA definition.

Literacy and numeracy as social practices

The evolving model of curriculum development is influenced by a social practice account of literacy and numeracy.

This view focuses on the ways we use and experience literacy and numeracy and shows that the **context** in which we use literacy is central. This means not only the physical setting (the kitchen, betting shop, job interview, school) but the wider social context.

When we talk of literacy as a social practice, we also understand that there are **different literacies** associated with different domains of life. The ways in which we use literacy at home, in a learning session, as part of our religious practice, or in a medical context vary enormously.

Understanding literacy as social practice recognises that **the value given to different literacies varies**. The literacies associated with powerful institutions in society (such as courtroom, school, banks) are given higher status than the literacies used in everyday life. Individuals and communities who possess or 'take on' these 'powerful' literacies are likely to have an advantage over those who do not (Papen, 2005).

Awareness of the different **power** attached to different literacies is central to curriculum development in adult literacy work. NALA advocates curriculum development in adult literacy that:

- respects and values learners' own literacies as a core aspect of their identity; and
- enables learners to move between contexts and choose to use new literacy practices to their advantage, or to challenge them, depending on their own purposes and judgements (MacLachlann, 2008 p. 31 – 32; Coleman, 2006 p.6).

Section 2

An evolving model of curriculum development in adult literacy and numeracy education

This section outlines the main features of NALA's model for curriculum development in adult literacy and numeracy education.

The model is represented in the diagram at Figure 1. This diagram is not a rigid image or framework for what is involved. We see it as an aid to thinking and talking about curriculum development in adult literacy work.

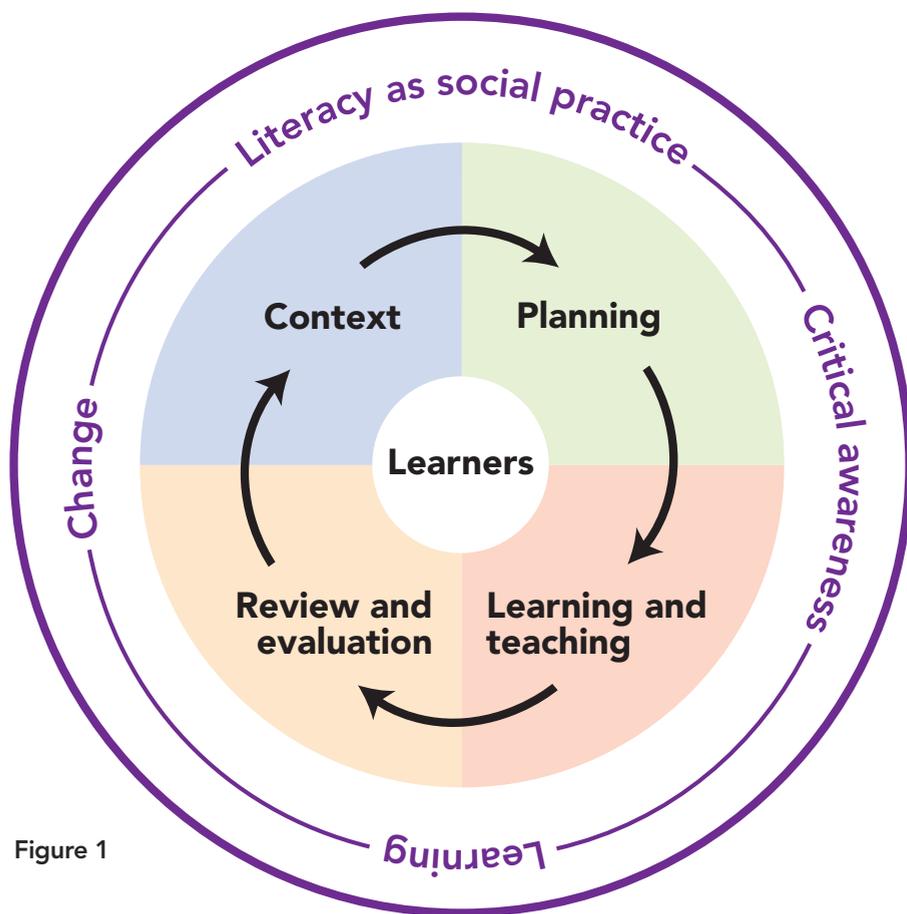


Figure 1

Learners and the context in which they live and learn are at the heart of curriculum development in adult literacy work. This is represented by placing learners at the centre-point of the diagram. The curriculum development process is represented as a set of two circles revolving around this centre point.

In the outer circle are **four key themes** that inform our curriculum development practice and help us to engage more creatively with it. They are:

- literacy as social practice,
- critical awareness,
- change and
- learning.

These themes are essential parts of the curriculum development process and affect all other aspects of the model. The themes appear throughout our discussion of curriculum development and especially in the explanation of the model in Section 4.

The middle circle shows a **curriculum development process** that is learner-directed. It starts with the **context** of learning.

Planning for learning builds on and arises out of our understanding of context.

Learning and teaching flow out of context and planning.

Review and evaluation are part of teaching and learning and feed back into context and planning.

The circles interact with each other in a dynamic model of curriculum development. They do not represent separate parts of a curriculum development process, happening one after the other or independently of each other. All parts of the model influence and change each other.

Section 3 | Key themes

Literacy as social practice

Building curriculum development on an understanding of literacy as social practice involves:

- respecting and valuing learners' language and literacies;
- enabling learners to use new literacy practices; and
- developing awareness of and ways to deal with the different power and status associated with different literacies.

Critical awareness

Critical awareness in adult literacy work is closely connected to the concept of literacy as social practice. It means being aware that literacy and curriculum are shaped by where and how learning takes place and by the wider society in which we live and work.

It also involves helping students to develop critical literacy as part of developing the technical skills of literacy and numeracy. There is more on this in *Learning and Teaching* (p.18).

Change

The evolving model represents curriculum development that creates change.

Effective curriculum development promotes change in the learners' literacy confidence and skills to help them meet their own goals. It includes facilitating learners to take increasing control of the direction of the learning programme. It may involve change in the various contexts of the learners' everyday lives. The curriculum development process may also involve change for tutors, managers and funders.

In adult literacy work, then, change has many aspects and possible effects – personal, social, emotional as well as in skills. Understanding the varied facets of change deepens our understanding of literacy and informs curriculum practice. Issues of change are raised throughout the following discussion of the model.

Learning

Our understanding of the nature and range of learning is a key underpinning factor in the model.

Learning is an active process and is based on prior knowledge, experience and perspectives. It includes the informal learning involved in everyday life.

If curriculum development for adult literacy work is participative and collaborative, then everyone learns through taking part. This includes managers and those responsible for funding, as well as learners and tutors.



Section 4 | Learners

Learners are at the centre of the model because the work in hand is theirs and they are the key actors in developing **their** curriculum for literacy and numeracy learning, supported by the learning partners.

Good curriculum development recognises that how we use language and literacy and who we use it with, help to form who we are and how others see us. It respects and values the learners' language and literacy practices as part of their **identity**.

Good practice will help learners to value their own language and literacy *and* to use confidently the language and literacy involved: in the various **roles, identities and purposes** they choose and the various **networks, communities and contexts** they are involved in (Coleman, 2006).

Learners'

- **interests**
- **goals**
- **experiences**
- **views**
- **feelings** and
- **learning needs**



are the focus of curriculum development in adult literacy and numeracy work.

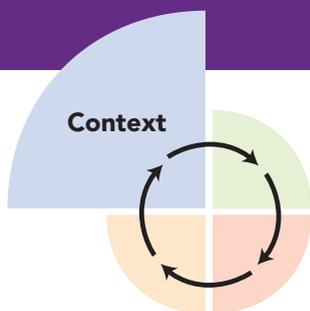
Section 5

The curriculum development process

In this model the curriculum development process consists of four inter-related stages. These are:

- context
- planning
- learning and teaching
- review and evaluation

A. Context



Thinking about context is the starting point in the model. It helps us better understand the range of factors affecting learning, as well as the literacy development opportunities, challenges and resources that exist in the relevant contexts.

Context can be considered under the following headings:

- the wider society
- the immediate learning setting
- the learners' contexts.

The wider society

This curriculum development model reminds us to keep in mind that the wider social, political, cultural and economic context affects literacy policy and practice.

Some questions to consider about the wider social context include:

- How is literacy defined in national policy and strategy?
- Are literacy learners seen as people who 'lack' or are 'deficient' in literacy skills, or as people who engage in varied

uses of literacy and are developing increased abilities to participate in new and varied literacy practices?

- What purpose is adult literacy provision being asked to serve in the present economic, social and political context?
- What pressures or influences do factors such as these exert on curriculum development in adult literacy? How do they affect a learning-centred, learner-directed curriculum development process?

The way funders and organising institutions define literacy can affect how curriculum is planned and enacted.

This evolving model of curriculum development is supported by the following institutional context:

- The institution's **policy** is that literacy programmes – their content, processes and timescales - should be centred on learners' own purposes and needs, and be negotiated with the learners.
- **Funding** for adult literacy programmes does not depend on, and does not prioritise, achievement of certification.
- There is an organisational **ethos** of equality, professional trust and care.
- There is ongoing professional training in participative, learning-centred curriculum development.

■ Curriculum in practice: some questions to consider about the institutional context

- Which of the institution's policies, structures and practices enable the local centre to do curriculum development in the way outlined here and in *Guidelines for Good Adult Literacy Work* (NALA, 2005a)?
- Are there any constraining policies or practices?
- Is there a way to negotiate these, to enable a more locally-responsive and learner-directed approach to curriculum development?

The immediate learning setting

Adult literacy work takes place in a wide range of centres. The main **purpose** of the centre will affect how we do curriculum development in literacy. For example, the main purpose of an adult literacy center is different to that of an addictions centre, a vocational training centre or an employment services centre. In each context, curriculum development for adult literacy should be negotiated with learners and centre management so that it serves the primary purpose of the learner. Sometimes, this will involve adult literacy tutors integrating literacy development into other activities, in co-operation with other staff, as well as providing discrete literacy tuition.

In all centres, management and tutors can facilitate and encourage learners to get involved in the life of the centre as a whole. This can be a meaningful context and resource for literacy development.

The use and layout of physical space and furniture, the choice of texts, materials and methods, and especially the **relationship between tutors and learners** are all part of the curriculum development process.

■ Curriculum in practice – some questions to consider about the immediate learning context

- What influence will the context or curriculum setting have on the purpose for learning, the learning activity and the participants involved?
- What type of relationship between learners and tutors creates the best context for learning?
- Would learners be interested in taking part in or organising social activities in the centre? How might this relate to literacy and numeracy development?
- How can we facilitate learners in the centre to take a greater role in decision-making and planning?
- How can we build on activities and other aspects of the setting in our literacy and numeracy work?

Learners' contexts

So far we have considered 'context' in terms of the wider society, the institution and the immediate learning setting. The point is to work effectively with *particular* learners to discover with them how their various contexts can support their literacy development.

The following diagram (Figure 2) illustrates some aspects of the learners' contexts that should be considered and drawn on in the curriculum development process.

Learners bring to adult literacy sessions a rich resource of prior knowledge and experience, including background **knowledge and experience of texts**. Good curriculum development values the learners' **social, cultural and community** contexts, which influence choices of materials and methods. It identifies and builds on learners' existing **uses of literacy**. It draws on these to help extend literacy according to learners' goals.

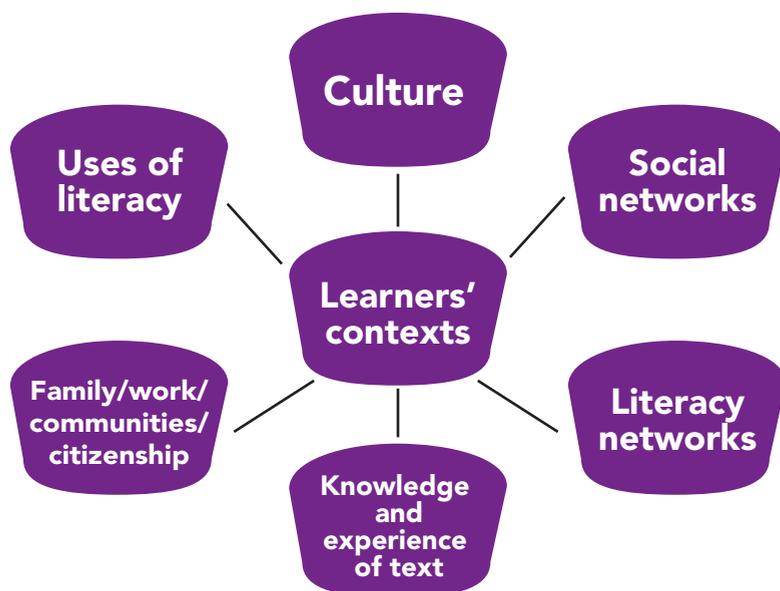


Figure 2

Learners also have **literacy networks** – people in their lives who assist them from time to time with particular reading and writing tasks. Good curriculum practice affirms these literacy networks and encourages their development. It also facilitates the learner to participate in an increasing range of **social networks**.

Learners' contexts provide motivation and resources for literacy development. Learners will assess their progress in terms of the changes they have made in their contexts (Scottish Executive, 2005) and their confidence in moving between contexts.

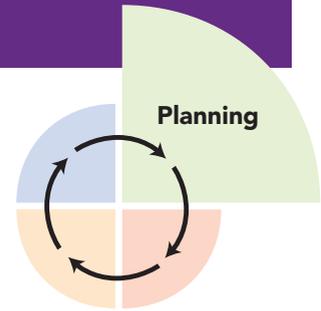
■ Curriculum in practice – some questions to consider about the learners' contexts

- As learners develop their literacy, are they also developing confidence to act in a range of contexts?
- In our work on literacy development, are we aware of the value of learners' literacy networks?
- Are we aware how feelings about texts affect learning? Are we open to exploring this, if learners wish to?



B. Planning

The next step in the curriculum process involves planning – whether individual sessions or programmes for individual learners or groups. Clearly, planning is influenced by and takes place in context: it builds on the various aspects of context discussed in part A. While learners and tutors are engaged in planning their learning they are, at the same time, influenced by and acting on the wider and immediate contexts in which they work.



For tutors and organisers, a key aspect of planning is getting to know the learners they will be working with. Unless tutors or organisers know the learners involved, it is difficult to write a specific programme for a course before the learners start to work as a group with the tutor. For this reason, if written programmes are required beforehand, they should be expressed in open, general and flexible terms so that they can be adapted for and by the particular learners.

Getting started and initial assessment

Before learners start to take part in learning sessions, they are likely to engage in an initial assessment process. This is often led or supported by an organiser or manager. Other people involved may include other learners, tutors, family and friends.

Initial assessment takes place over a period of time; it is not a once-off event.

The purpose of initial assessment is to help learners to clarify:

- the prior knowledge and skills they can build on;
- their current uses of literacy and numeracy;
- what they most want to learn;

- where and how they would like to work on their literacy and numeracy; and
- who and what will help their learning.

As with all curriculum development, initial assessment is affected by and involves context.

Negotiated planning

Negotiated planning is central to learner-directed adult literacy work. The key point is that learning is worked out between all partners - tutors, managers, learners and others involved in the process such as family, friends or work colleagues. As learning progresses, both learners and tutors may need to extend their view of what they are doing and the possibilities for development. Planning takes place through discussion and negotiation. This can be supported by the framework in *Mapping the Learning Journey (MLJ)* (NALA, 2005b) and guidance in *Getting started in adult literacy and numeracy* (NALA, 2008). Tutors and learners may find formats such as individual learning plans (ILPs) or learning logs and diaries helpful. These may give a structure for learners, tutors and organisers to record their planning together, at specific stages in the learning journey.

Such a record of individual and group plans often includes:

- general learning purposes and goals;
- a summary of initial discussions and assessments (the four *MLJ* cornerstones (NALA 2005b) are often useful here);
- specific objectives for literacy and numeracy development that learners would like to achieve; and
- a note of when the learner and tutor will review the plan to identify development, issues arising and possible changes to the plan.

Learning plans need to be real and meaningful to learners. They do not always need to be formal written documents. In particular, learners must always have the right to choose whether or not to

draw up and sign written learning plans or learning logs. These documents can affect our approach to learning and teaching. As with any text, we need to apply critical awareness in the way we make and use written plans so that we understand that a) we can change the plans and b) plans are there to support, not to dictate, the work we do.

Reviewing plans regularly helps learners and tutors to clarify change and progress, for example how goals have developed and changed, as well as new skills that learners wish to work on. *Getting started in adult literacy and numeracy* gives useful ideas on planning (NALA, 2008, Section H).

Certification

Access to certification and the opportunity to gain external recognition for literacy and numeracy learning has been an important development in the field. The key words here are 'opportunity' and 'access'. We need to make sure that certification is felt as a positive option by learners and practitioners and does not become a limiting factor in curriculum development.



In terms of planning, moving towards certification or accreditation relates to the learners' goals and purposes but also to the goals of the institutions that are organising or funding their studies. Accountability should not depend on certificates as a way of recording progress. Learners may be encouraged to consider preparing their work for certification, but it is important that this does not become imposed as a goal. There may be a fine line between encouragement and insistence, but it is part of the work of adult literacy tutors and managers to ensure the difference and to keep the learners' own purpose and goals as the focus.

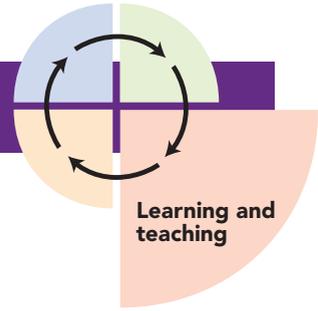
Centres should ensure they have the necessary arrangements in place to provide learners with the option of certification. At this

point, programme validation becomes part of curriculum development. When learners decide that certification is a goal that suits their purpose, planning curriculum to meet the requirements of the awarding body becomes an important part of what learners and tutors do in flexible and responsive learning sessions.

■ Curriculum in practice – some questions to consider about planning

- Is a joint process of initial assessment part of the learning process in our centre?
- Do we build new learning on prior knowledge revealed in initial assessment processes?
- Are learners and tutors helped to decide freely and without pressure whether or not they wish to work towards certification?
- How is our curriculum development process affected by certification? What specific steps can we take in our centre to ensure that our programme planning and evaluation create space for and value non-accredited learning? What steps can we take in our learning sessions to ensure we continue to be flexible and responsive while giving learners the opportunity to gain certification?
- Is negotiated planning an integral part of learning for tutors, learners and managers?
- Is the idea of negotiated planning part of training for all tutors?
- Are the publications *Mapping the Learning Journey (MLJ)* (NALA, 2005b) and *Getting started in adult literacy and numeracy* (NALA, 2008) available in the centre? If the centre is a vocational education and training centre is the publication *Integrating Literacy Guidelines* (NALA, 2002) available? Are tutors and learners supported in using *MLJ* if it would be useful to them in developing curriculum?
- Do we ensure that individual learning plans support learning and curriculum development, rather than become another layer of paperwork?

C. Learning and teaching



Learning

A learning curriculum recognises and builds on the following features of learning.

- Everyone is learning, all the time and in all aspects of life.
- Learning takes place in interaction with others and leads to greater participation and awareness of belonging. Learning activities cannot be separated from the social and cultural context in which they take place.
- Learning involves developing understanding, knowledge and skills, together with increased awareness of *how* we learn.
- Learning has emotional dimensions (Illeris, 2004): attitudes, feeling and motivations are central.
- Learning involves reasoning, evaluating, thinking clearly and *thinking critically* (MacLachlann, 2008).

Teaching

The role of the tutor in curriculum development includes acting as teacher and guide (Mace et al, 2009). Teaching is concerned with planning, facilitating and reviewing learning in ways that respect, support and challenge students. Tutors have a responsibility to provide expert guidance on literacy skills development in line with learners' goals. They do this in negotiation with the learners and in ways that increase learners' capacity to take more active control of the process.

In this section we include some suggestions on how teaching can take account of the features of learning outlined above.

Building on learners' uses of literacy and numeracy

Effective curriculum development builds on and extends learners' uses of literacy and numeracy and explores the relationship of context and literacy as part of the learning. To do this it is vital to work with learners to research and record literacy and numeracy activities, texts and artefacts.

There are many different ways to gather accounts of peoples' uses of literacy and numeracy. These include photography (see Appendix 3), discussion and analysing documents and pictures (Mace et al, 2009, p.84 and 89).



At times we need to reframe with learners how they think about their own everyday use of words and numbers. Catherine Byrne, a tutor in a Dublin prison, describes how a learner discovered his numeracy strengths.

John came in to the Education Unit to do maths one day and when we started chatting he told me he had trained greyhounds. He talked about how drugs were used to fix races and the money that was involved. He knew how certain drugs could speed up a dog and some would slow down a dog and by how much... He told me about the complexity of the betting and fixing system and explained some of the detail about the effects of drugs on finishing lengths and times.

John didn't think he was any good at maths. When we talked about the maths skills he had just outlined – measurement, comparisons, percentages, money, distance, body weights, statistics, probability... he was surprised (Mace et al, 2009, p.89).

As well as encouraging learners to realise their strengths and to value their own literacies, tutors and managers may need to guide

learners to consider the way language and literacy is used in more formal contexts. This includes both spoken and written forms and is a key part of helping learners to use a wide range of literacies with confidence. As well as changing across contexts, literacy changes over time. Understanding that there is no single fixed 'literacy' is helpful in developing the skills needed for particular purposes.

Helping learners to learn from each other

One of the ways we can support learning is by creating conditions in which learners learn from each other. In supportive environments people are encouraged to learn by working with a more skilled and knowledgeable partner. This learning strategy is often referred to as **scaffolding** and involves both learners and tutors. It can become a useful feature of participative curriculum development.

Scaffolding is a way to support learners in tasks that are slightly more difficult than they can manage on their own, but which they can accomplish with sensitive guidance (Scottish Executive, 2005. p.17; Coleman, 2001 p16). It involves a tutor or peer building bridges from the learner's present knowledge, understanding and skills so that they can reach a new level of knowledge, understanding or skill. In the process of jointly performing a task, the tutor points out links between this particular task and those the learner can already do. When working on spelling for example, tutors can facilitate learners to build on their knowledge of other words. Scaffolding also involves the gradual removal of the support system once the learning has been internalised and the learner is able to perform the task without help (Coleman, 2001).

Another way tutors and learners can learn from each other is through **making thinking explicit**.

For example, in supporting learners to develop the literacy practices involved in doing up a patio, a tutor or another learner

could talk through the thinking processes involved: “What’s needed to improve this patio? What is the problem with it? What do we need to do? What tools and materials do we need? Let’s talk it through, make a list, work out quantities...” Learners can use the language and thinking processes modelled in doing similar tasks (Wrigley, 2008).

Learners can be invited to make their own thinking explicit by talking through processes such as how they work out a spelling or how they did a multiplication problem. By encouraging learners to think aloud and explain what they are doing, we validate what learners already know, deepen learners’ understanding of their own methods and help them share with others in the group how they go about solving problems.

If the methods learners use are connected with particular cultures, learning can lead to deeper understanding of those cultures. ‘Counting beyond 10 is likely to lead to interesting discussion of how larger numbers are created. For example, learners might compare the English derivation of ‘fifty’ from ‘five tens’ with the Yoruba ‘aadota’, which derives from ‘twenty three ways minus ten’ (Mace et al, 2009, p. 63).

Supporting the transfer of learning

Transfer means using knowledge and skills in new or different situations. It is reflected in the notion of ‘literacy mobility’ where learners transfer the literacy and numeracy skills and knowledge they have learned from one context and role to another (Greene, 2008).

The effective transfer of learning can be supported in a number of different ways.

- Learners can be encouraged to think about how they learn or what helped them learn and how these strategies could be transferred to new tasks.

- Learners can be encouraged to identify similarities between different learning tasks, contexts or experiences.
- Transfer can be supported by tutors or peers building bridges between what a learner already knows and a new task.
- Transfer can be supported by using tasks that are as authentic as possible.

Developing critical awareness

Critical awareness shapes our approach to learning and teaching, as tutors and learners work with texts in a way that goes beyond the surface meaning. It encourages us to explore the relationships between the people who create texts and those who use them. Learners learn to read between the lines: to explore the broader literacy practices that lead to the text, to examine the value placed on the text and who decides this value. Such activities help us to develop 'critical awareness and depth of understanding', a cornerstone of literacy development (NALA, 2005b).

In relation to particular texts, we can encourage learners to develop critical awareness by exploring questions such as:

- What are the essential features of the style and structure of the text? What do the images, layout and words suggest?
- What is the purpose of the text? What is the text about? How do we know? What does the writer want us to know? Who would be most likely to read or see the text? Why?
- Who benefits from this text? Whose voice and views are included? Whose voices and views are excluded? Why is it written the way it is?
- How are we affected by the text? How do we feel as we engage with it? What view of the world is portrayed? Is it different to ours? How does the text define and position us as readers?

Exploring social issues and connecting literacy learning to social action

As NALA's definition of literacy states: "Literacy increases the opportunity for individuals and communities to reflect on their situation, explore new possibilities and initiate change" (NALA, 2005a p.12)

Guidelines for Good Adult Literacy Work explores this topic further:

"As learners develop their confidence and their literacy, they may wish to explore the social context of their educational experience. This may include the causes and the effects of their difficulties with literacy. The social and political context is a topic for study and debate, sometimes leading to action within communities. Literacy learning can be part of this social and political engagement." (p.15)

"Because literacy in modern society is a complex issue, adult literacy work must enable learners to connect their literacy and numeracy learning with the reality of their daily lives, and with past experience. Personal development is therefore an integral part of the learning process. In addition, literacy learning may lead individuals and groups to relate their own experiences to wider social issues. They may then wish to become involved in local or national action for social or educational change." (p.16)

Curriculum development involves an openness in our work to exploring and discussing social issues and connecting literacy learning to social action. The case study in Appendix 1 and the examples in Appendix 3 show how these connections have been made by various groups.



■ Curriculum in practice – some questions to consider about learning and teaching

- Does our work in literacy and numeracy take account of the different kinds of learning?
- Are learners moving towards greater control of their learning?
- How can we help learners to identify the prior knowledge, experience and meanings they bring to a topic or learning situation?
- Do we help learners to clarify how they wish to work on skills development?
- In planning and facilitating learning, do we keep in mind support for the transfer of learning?
- What practical ideas can we put in place to encourage collaborative learning and scaffolding? How can we create learning environments in which tutors, learners and managers learn with and from each other?
- Is there enough training and support for tutors in all aspects of curriculum development?
- Do we connect our literacy work to issues in our communities and build on opportunities to connect learning to social action?
- What role does the language experience approach play in literacy development? (NALA 2006b)

D. Review and evaluation

Learning builds on and grows through experience. Review and evaluation are therefore integral to the process.

While review and planning are part of every session, it is likely that evaluation occurs at certain points – it represents a pause, taking time to consider the various elements of the curriculum development process that tutors and learners have engaged in.

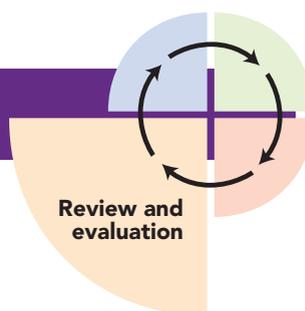
Often **evaluation** takes place after or during the closing session of a specific programme or course. The assessment carried out by learners, tutors and organisers helps in planning future programmes. This process also helps learners to plan their next steps.

At times it is important to review and evaluate how a service, programme or project is working overall. The *Evolving Quality Framework User Guide* offers ideas and guidance on this process (NALA, 2006a, p.108 – 109).

Reflection in action

Ursula Coleman explains an important kind of review in adult literacy development. She describes reflection-in-action as a process in which “our thinking serves to reshape what we are doing while we are doing it”. For example:

“... a tutor is explaining a new concept to a group of learners and realises that they are not following her train of thought... so she... tries to find another way to represent the idea. Schon maintains that really skilled practitioners can integrate this form of reflection-in-action into the smooth performance of an ongoing task” (Coleman, 2001, p.35).



In adult literacy learning, learners are also encouraged to develop the skill of reflection-in-action. As tutors and learners develop this skill, they become aware 'in the moment', as they work their way through a particular piece of learning. They begin to notice if the way they are learning needs to be re-visited or re-thought to be more effective.

Formative assessment

Formative assessment involves regular review to identify learners' progress. Its goal is to support the learning process rather than to measure its outcome. It provides us with information on how the learning is going so that we can adjust our teaching and learning in response to points that emerge. Both learners and tutors benefit from formative assessment. It helps us to adjust teaching and learning approaches and materials, to enhance our understanding of learning processes and to revise the learning goals. *Mapping the Learning Journey (MLJ)* (NALA 2005b) is an example of a formative assessment tool.

Formative assessment informs a dynamic curriculum model in which the reflection on learning influences and colours the content, emphasis and direction of the learning experience (Mace et al, 2006, p.20).

Viewing literacy through the lens of change helps us to understand the process of review and seems to mirror how literacy learners describe the impact in their lives of learning to read and write and use numbers. In describing their progress in literacy learners often refer much more to changing their lives rather than improving their skills. These include changes in terms of the literacies learners use, the roles they play in their lives, the changing attitudes and values they attach to particular literacy practices, their sense of identity and the communities they participate in (Fowler in Mace & Fowler, 2005).

■ Curriculum in practice – some questions to consider about review and evaluation

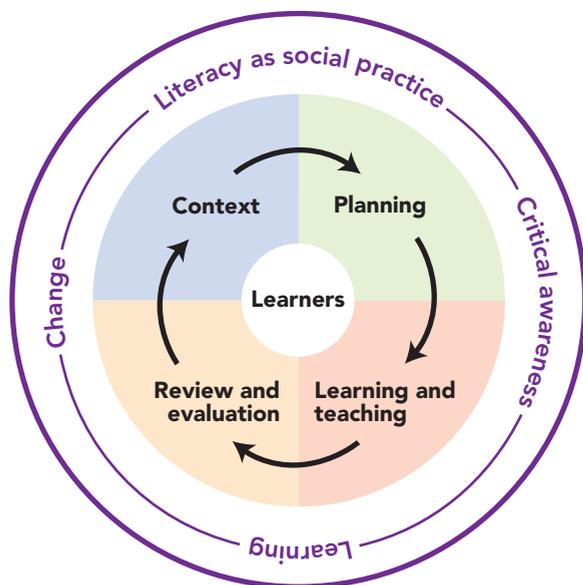
- Do all tutors and learners include review as part of their learning sessions and use this to plan the next steps?
- How do we carry out our evaluations? Do we see evaluation as an integral part of curriculum development? Do we make sure that points arising affect planning for learning?
- Do tutors, learners and organisers in the centre refer to the *Evolving Quality Framework Users' Guide* (NALA, 2006a) for ideas and guidance on evaluation?
- Do learners see a clear link between their purposes and what and how they are learning?
- How far do we build in reflection-in-action?
- How do we use formative assessment to support the learning process?
- Are tutors and learners supported in using *Mapping the Learning Journey* (NALA, 2005b) to guide their formative assessment as part of learning?
- Are learners supported in decisions about progression?

Conclusion

The evolving model for curriculum development in adult literacy and numeracy education shows how understanding and acting on context is integral to adult literacy work.

The model applies the principles and values explored in *Guidelines for Good Adult Literacy Work* (NALA, 2005a) to the topic of curriculum development. Readers will also find practical supports for the process described in the model in several NALA publications, especially *Mapping the Learning Journey (MLJ)* (NALA, 2005b); *Evolving Quality Framework Users' Guide* (NALA, 2006a); *Preparing Learning Materials* (NALA, 2006) and *Getting Started in Adult Literacy and Numeracy* (NALA, 2008) and *Integrating Literacy Guidelines* (NALA, 2002).

We hope that this model will support the work of tutors, learners, organisers, people working in tutor-training and others engaged in adult literacy and numeracy education.



References

Baker, J., Lynch, K., Cantillon, S and Walsh, J., 2004. *Equality: from theory to action*. Basingstoke: Palgrave Macmillan.

Borders, T., 2006. *Curriculum Theories Connexions*, March 13th 2006 <http://cnx.org/content/m13293/1.9>

Coleman, U., 2001. *Curriculum Matters*. Dublin: City of Dublin VEC

Coleman, U., 2006. *Reflection on Draft Curriculum Report* (unpublished paper) for National Adult Literacy Agency

Fowler, E., 2005. 'Researching informing practice' in *Outside the classroom: researching literacy with adult learners*. Leicester: NIACE

Fowler, E. and Mace, J., eds, 2005. *Outside the classroom: researching literacy with adult learners*. Leicester: NIACE.

Freire, P., 1970. *Pedagogy of the Oppressed*. London: Penguin.

Freire, P. and Macedo, D., 1987. *Reading the Word and the World*. South Hadley, MA: Bergin and Garvey.

Greene, M., 2008. The balancing act - How we strike the balance in the Co.Clare Adult Literacy Service. Paper presented at the National Adult Literacy Agency's Adult Literacy Organiser's Forum, 24th-25th April 2008, Athlone.

Illeris, K., 2004. *The three dimensions of learning*. Leicester: NIACE.

Mace, J., McCaffery, J. and O'Hagan, J., 2006. *Adult basic education in Ireland: towards a curriculum framework*. Dublin: NALA

Mace, J., McCaffery, J. and O'Hagan, J. 2009. *Developing the Curriculum for Adult Literacy and Numeracy Education in Ireland. Report of an NRDC curriculum research project tin Ireland* Available on www.nala.ie

Maclachlan, K., 2008. 'If you really want to hurt me., talk badly about my language' Social practices and critical literacy in Lawless K. (ed) *Literacy as a social practice More than reading and writing*. Dublin: NALA.

NALA, 2002. *Integrating Literacy: Guidelines for further education and training centres*. Dublin: NALA.

NALA, 2005a. *Guidelines for Good Adult Literacy Work: Policy Document of the National Adult Literacy Agency*. Dublin: NALA

NALA, 2005b, *Mapping the Learning Journey*. Dublin: NALA.

NALA, 2006a. *Evolving Quality Framework Users' Guide*. Dublin: NALA.

NALA, 2006b. *Preparing Learning Materials: a tutors' guide*. Dublin: NALA.

NALA, 2008. *Getting started in adult literacy and numeracy work*. Dublin: NALA.

Papen, U., 2005. *Adult Literacy as Social Practice*. London: Routledge.

Scottish Executive, 2005. *An Adult Literacy and Numeracy Curriculum Framework for Scotland*. Edinburgh: Scottish Executive.

The Open University, 2002. *Language and Literacy in a Changing World*. Milton Keynes: The Open University.

Wrigley, H., 2008. Functional, Critical, and Literacy as Social Practice. Paper presented at the National Adult Literacy Agency Conference on Social Practice, 12th March 2008, Dublin.

This case study describes learner-directed curriculum development in action. Here we see how the evolving model relates to a particular group of learners.

The tutors concerned work with a group of women from the Travelling community. The women are participants on a FAS-funded education and training programme. Literacy and numeracy sessions are held as part of that broader programme.

The tutors were keen to build literacy and numeracy development into activities and themes that the women would find interesting and that they would want to engage with actively.

Tea break talk

During a tea break early on in the course, some of the women were talking about a particular plant that was reputed to have 'miraculous powers'. The women called it 'The Lourdes Plant'. Lots of the women joined in and seemed to know something about this plant. The tutors – one of whom had expertise in gardening and community horticulture – also joined in the conversation.

Some of the women had the plant and some didn't. All wanted to have it after hearing the stories. Among the women who had the plant, there was a fear of something happening to it and it dying. This was stopping the women doing anything to the plant apart from a little watering.

The conversation continued for the rest of the morning's session. It developed into a conversation about plants in general. The women talked about the kinds of plants that would suit their homes and immediate environment.

One woman – Mary - agreed to bring her plant to the next session to show people what it was like. It also needed to be re-potted and she was reluctant to do this herself. The tutor said she could help with this. All agreed they might take cuttings from the plant – depending on how strong and healthy the plant was.

Much of the knowledge and language involved in this initial discussion was new to the women. Nobody had known what a 'cutting' was or what it meant to 're-pot' a plant. The word 'soil' was new and technical, as was the knowledge that it is a life environment and that it contains all sorts of organisms.

Interest grows

When Mary brought in her plant the tutor recognised it as the plant commonly known as 'The Wandering Jew'. This was good news because it's a very hardy plant and suitable for cuttings.

The group made a plan. They listed things to be bought in the gardening shop to re-pot the original plant, take cuttings and to pot those. After the break, five of the women and one tutor headed out to the gardening shop.

The rest stayed with the other tutor, got the room ready for the work and used the computers to make labels for the pots. In the shop, the women got various items on their list. None of the women had been in a gardening shop or flower shop before and they exchanged views on plants they would like to see in their own gardens or containers.

They went back to the centre and joined the others. Following a demonstration from the tutor, each of the women took and planted their own cuttings. They then put the labels into the pots and each woman wrote her name on the outside of the pot. They finished by watering the plants. During the activities the tutors chatted with the women about 'soil', 'nutrients' and the importance of light and water. In their evaluation it was clear that the women had

thoroughly enjoyed the session and were keen to learn more about gardening and plants.

Making the case for funding

The next session started with the group checking the young cuttings. The group discussed continuing to work with plants as the core of their programme with the literacy tutors over the next 10 weeks. They discussed a project plan and what it would cost. They agreed to ask the manager to come to the next meeting of the group at which the members would present the aims of the horticulture project and outline all the advantages to justify the costings. They spent the rest of the session working on the plan and preparing to make their case for funding.

Before the third session, the tutor called the manager and explained what was happening in the group. The manager agreed to the tutor's proposal that the women should cost the project themselves and meet her to put in the funding application.

The manager came to part of the next group session. The women made their case, the manager agreed to the funding and the project proceeded.

Further learning

The project involved planning what to do, choosing plants in stock and visiting the garden shop to get the supplies. There was plenty of reading, writing and numeracy involved in activities such as following instructions on seed packets and looking up gardening books, diagrams and designs for planting.

As well as improving the work environment through planting, and building portfolios for FETAC certification in Horticulture, the women began to apply what they were learning to their own homes. They started to introduce planting, they shared the knowledge and activity with their children and persuaded husbands

to put up brackets for hanging baskets. As the weeks went on, their conversations and questions showed growing interest in and understanding of gardening and of the environment.

Learning and social action

At the time of recording this story, five of the 16 women in the group had completed portfolios for certification and others were working towards this. An equally important outcome was the confidence evident in the way that the women engaged in a consultation meeting with the city council.

For many weeks the women had been concerned about a part of the environment near where they lived, which had been affecting the health of old people and children. The city council had arranged to have a meeting about this. At first, the women did not talk of going to this meeting. They usually didn't attend these kinds of meetings, and it would co-incide with their literacy session.

The tutor invited them to think and talk again about the environmental problem that concerned them and what they could do about it. The main response they came up with was to go to the meeting and give their views to the council about what could be done. They were making the connection between what they had been learning and doing in the class and in their homes with what the council was trying to do.

It was agreed with the management that instead of attending the centre that morning, they would go to the meeting. They were the only residents there (although two other residents gave apologies – attendance was difficult on that particular morning for others on the site). At the meeting, the women took full part in giving their views and suggestions to the council representatives.

(Margo Kelly, City of Dublin VEC)

Discussing the case study in relation to the curriculum process in the evolving model

The learners and the context

The evolving model reminds us that curriculum development starts with the context in which the literacy learning is taking place.

In terms of **wider society**, many of the learners are experiencing prejudice on a daily basis. Much of the history and culture of the Travelling community is different from that of the settled community and, more importantly, is often not treated with equal respect. The **curriculum setting** is a training and education centre specifically for Travellers. Learners have many reasons for attending the centre. Some of the learners see literacy development as a reason for attending the centre; many do not. Motivations therefore vary and are not always connected to literacy. Context must clearly be part of the process of curriculum development.

The centre itself has to pay attention to the requirements of the organising and funding bodies. There is increasing attention to providing evidence of 'progress' and to certification as a way to prove that progress is taking place.

Centre management have an important role in appreciating the way that learning is taking place in the literacy sessions, trusting that the literacy professionals know what they are doing, realising that projects such as this horticultural project support literacy and numeracy learning and giving the kind of support needed in terms of funding and flexibility.

The case study shows learners involved in planning, review and evaluation. In particular it shows the important role of reflection-in-action. We see how planning evolves out of interest and how a group can create a programme together. Evaluation of the initial session helped the tutors and learners to agree plans for the next

one, and ongoing evaluation built on this throughout the programme, helping to maintain engagement and increase active participation. The discussion of context begins to introduce us to this particular group of learners, especially in terms of identity, goals and feelings about learning.

As the tutors note, many of the women are experiencing the problems associated with groups that are marginalised in society. In particular, their relationship with literacy is not straightforward. At times it is seen as a route to better living conditions, to a better life for their children and opportunities for paid work. It can also be seen as irrelevant to, or less important than, other needs and goals. Tutors and managers need to be intensely aware of this aspect of the work, as it affects motivation, the learners' feelings about learning and therefore their capacity to learn.

In this context it is clearly important to help learners to discover and build on their own literacy uses, practices and especially their networks. It is also vital to encourage the learners to see themselves differently in relation to literacy and numeracy so that they start to own their literacy capabilities. Discovering and extending areas that may be of interest to the learners play a key part in helping them to make sense of and to own their literacy and numeracy learning. The case study shows how responding to, building on and extending interest is central to curriculum development in adult literacy work.

Planning

The case study shows how learners are involved in planning their work even if they appear at first to be reluctant or resistant to taking this on. If tutors work on the basis that this involvement is essential to curriculum for adult learners, learners realise that their views are vital and that curriculum will not develop effectively without their engagement. This learning is in itself part of the curriculum. We also see how curriculum planning evolves from interest and how a group can create a programme together.

In relation to certification, it is clear that while this was immediately relevant for some learners, others needed longer to work on their learning before deciding whether they wished to present a portfolio. Flexibility in relation to whether learners wished to work towards certification was essential.

Learning and teaching

In this case study the approach to curriculum development is learning centred. We can identify key points in the Learning and teaching dimension, especially:

- building on and extending learners' uses of literacy;
- taking account of the social, cognitive and emotional aspects of learning; and
- building towards learner-directed learning.

Work on skills was closely related to interest and the needs that arose as part of the project. The participants developed knowledge and use of particular terminology, language and concepts, and they developed confidence and skill in a range of real-life reading, writing and numeracy activities. The purposes for the learning were clear and immediate.

The women clearly transferred their learning to their home environment. Their decision to take part in the meeting with the council also shows how learning was transferred to a new context and how literacy work led to personal development and social action.

Meeting the manager to make a case for funding, and then meeting the Council, meant taking on new and more formal contexts for listening and speaking. Preparing portfolios for certification also demanded new uses of literacy. Tutors and learners scaffolded new learning in the supportive environment of the literacy group, which made it possible to take risks in order to try out the new literacies. This was all part of curriculum development and skills development with the group.

Review and evaluation

The case study shows how review and evaluation can be integral to the learning and teaching process.

Review of the initial session helped the tutors and learners to agree plans for the next one, and ongoing review built on this throughout the programme, helping to maintain engagement and increase active participation. Management support in allowing flexible programme planning was vital.

Note: A case study and discussion based on this story also appears in the report of the NRDC curriculum research project (Mace et al, 2009).

Appendix 2 | Using photography

Mace et al, 2009, p120 - 122

In South Tipperary VEC, Shelagh Murphy was working with a group of learners on a Return to Learning programme. The three men — Pat, Mark and Jack — were all employees of the county council, in their 40s and 50s. Shelagh invited them to think about how they might take pictures of the numeracy practices of their working lives. To do this, they began with thinking about their daily life and how and when numeracy cropped up. This is her reflection on four sessions of work they did on this.

1. The group named different work activities. They were all familiar with them, although they had varying levels of experience, depending on their years of service in the council.

We then talked about their jobs, looking at what was involved, breaking down the tasks, and named the skills required for them. We focused on maths, but it was very apparent to us that there was considerable crossover with literacy and communications skills. I used the flipchart to record the tasks and skills we identified for each.

The men expressed surprise at the multitude and complexity of skills required to do the various jobs. We also talked about their sports interests - darts, golf, soccer and Gaelic football - and the maths that they involved.

Jack said: "You would never think there was so much in it [the tasks]," and "There's a lot going on." Pat said: "You wouldn't realise there is so much maths in it."

I summarised and printed out the flipchart notes for the following week.

2. We recapped on the project and discussed the method we would use to photograph the activities and the issues involved. Pat planned to use the camera on a mobile phone, but this means sorting out existing photographs in the camera and learning how to store and retrieve photographs from camera and card memory, skills he was happy to learn.

Mark and Jack, who work together frequently and know each other outside of work, agreed to share the use of a disposable camera. They were happy with its low cost and ease of use.

The issues raised were:

- Who will see the photographs and what will they be used for?
- Should people's faces be included in the photograph?
- Was the permission of the supervisor required?
- The content of the pictures: signs to be included or not?

We agreed that they would tell the supervisors what they were going to do, and I would ask the co-ordinator of the Return to Learning project to support any queries. We also agreed to include pictures of people doing work but only photograph faces if people were happy about it. With regard to content of the pictures, they decided they would include signage, for example "hedge cutting in progress" and try to get pictures of as many of the activities we had identified.

This is a selection of the tasks, maths and skills that we came up with.

Activity	Maths involved	Skills
Wet mixing: preparing mix, ordering concrete, preparing the road	Measuring amount of mix, Estimating, marking out distances	Multiplying; division; calculating; measuring distance in metric and imperial
Chipping, preparing signs, using correct size of stones	Estimating, measuring, mapping, describing distances, right and left	Spatial skills, mapping skills; visual discrimination; calculating volume; quantity and size
Weather-related road works	Temperatures, seasons	Understanding and reading temperature gauges; judging; planning; knowledge of regulations
Patching	Planning, estimating, measuring materials	Planning skills; efficient use of time and manpower; measuring materials
Kerbing/gully and manhole work, wall building	Measuring, calculating numbers of blocks and sand, cement, measuring distance, size of blocks, stone and levels	Knowledge of imperial and metric units of measurement; calculating quantity; estimating time, volume and number, levels
Leisure pursuits, including darts and golf	Multiplying, dividing, adding, subtraction, calculating, planning	Judging distance, speed and accuracy; mental calculations; estimating; planning; reading league tables, scorecards

3. We spent some 20 minutes discussing progress with taking the pictures. Jack had taken about 12 photos and had a few laughs with his co-workers in the process. Pat had taken three with his camera phone and sorted out his storing of pictures. The challenge now was how he could send the photos to his email address. This he managed to do; the photo was good and we printed it off. Mark had not taken any photographs but agreed to take the disposable camera for the coming week and take some, including any leisure activities that struck him as useful. He also agreed to get the film developed before the next class to save on time.
4. The class missed a week, but we completed the project a week later by:
 - selecting photographs;
 - using the computer to edit and print them; and
 - writing a heading and detailing the maths in each.

We then put together the pages in a folder. At a later stage with this group we may look at using computers to produce a more finished portfolio, presented as evidence for FETAC accreditation. Despite the missed week, we completed the project we had set for ourselves. The decision-making and writing work was where I saw the most active learning going on in class. Having the folder completed and looking so well gave the learners a sense of completion and pride.

from Mace et al, 2009, p31 – 35

In community development work, educational activity follows a sustained period of firstly, listening to people expressing their concerns. Alan Rogers' useful catchphrase 'literacy second' is relevant here.

Our community workers start work on a housing estate in consultation with workers from other agencies who may already be working there. To date, we have worked intensely in four estates. We have learned that inviting people to attend meetings by putting up notices and invitations does not work. The best way is face-to-face contact. If there are people already active in the community, our workers work with them to make door-to-door contact with others. Only then do we hold a public meeting.

At that initial meeting, we identify issues that seem relevant to the people there. Over time, the needs are discussed and prioritised, and we encourage residents to form a group and undertake committee skills training. It is then that our support workers need to show sensitivity to any literacy and numeracy needs. Once the group is formed, we support them to develop the aims and objectives, constitution and ground rules that they need for the group to become a residents' association.

We offer time to discuss issues and mentor those who take on roles such as secretary or treasurer. This support will carry on until members feel empowered to carry out these roles unaided. They are encouraged to switch roles and thus gain new experiences. Literacy and numeracy support is an integral part of this process – for example, the secretary learns ways to write and keep the minutes. All committee members will learn about fundraising,

sourcing funding and keeping accounts of monies acquired and spent. They are also supported to: liaise with other key contacts in the area, such as county council officials and elected representatives; write grant applications and source funding for education and training needs. Such additional training has included child protection training, childcare training, computer training and attendance at arts and crafts courses.

A key outcome has been the willingness of residents to represent their area on committees and groups in the wider community and, more importantly, to feel empowered to have a voice on such groups. Also of significance is that parents begin to recognise and demand greater support for their children. Parent and toddler groups, homework clubs and youth development activities are some of the activities that have emerged as a result of the work. (Karina Curley, OAK partnership)

Our next two examples give the focus to mathematical learning and come from work outside Ireland.

Gelsa Knijnik worked during the 1990s as a teacher and researcher in a settlement of the Brazilian Landless Movement, organised to achieve land reform in Brazil. The educational activity she did was centred on the settlement's main productivity (growing and selling melons), was designed with the community and, she argues, contributed to the Brazilian Landless Movement's political struggle. These two experiences show something of the relationship between social action and mathematics.

The measurement of land

Here Gelsa describes two approaches to the measurement of land: a conventional, 'academic' method, measuring the land in terms of hectares (squares of 100 metres each side) and a measurement based on the length of time needed to work the land.

The discussion took place in a context where ideas about the 'size' of land are very significant for people involved in a struggle over its control and ownership. Two of the peasants used the 'tractor time used to hoe' as a parameter to determine the size of a surface. One of them explained to the pupils: "One places the tractor on the land. Working with it for three hours makes exactly one hectare."

The question of measuring the land with time was analysed jointly with the pupils and the farmers. What appeared to be 'inappropriate', as the pedagogical work began, was then more clearly understood by the group as examples of linear distances expressed by measure of time.

For farming purposes, the hour of tractor use is more relevant data than the precision related to square meters of land. As a peasant said, "a few meters more, a few meters less, it doesn't really matter too much."

Commentary

This account suggests how the social context from which mathematical thinking emerges may influence that thinking. The purposes to which mathematics is being put may generate a variety of mathematical ideas or procedures, and the teaching and learning process involves choices about how to respond to and value this variety. As we saw in this example, different ways of thinking about the 'size' of the land were expressed in different pieces of mathematics.

Gelsa Knijnik took an 'ethnomathematics'¹⁴ approach, seeing mathematics as a 'cultural system permeated by power relations'. This means she was committed to acknowledging all kinds of mathematical thinking, not merely the variety she was trained in. It also means that she took it for granted that she should explore learners' ways of thinking, instead of insisting on the conventions of 'academic' maths.

In the second example from this work, we see how the planned work of the group is disrupted by a hailstorm, which destroyed most of the melon crop. The storm had ruined the learners' livelihood. How could it not affect their lesson plan?

The hailstorm

The group had been planning to do some mathematics related to the size of the crop and its likely sale value. But the hailstorm catastrophe became a key factor of whether and what mathematics would be studied. The social context determined the curriculum in both the 'process' and 'product' sense. In Gelsa's words: "The young people of the more advanced classes refused to discuss the subject. As one of them said: 'What has happened has happened, one cannot think about it'. They would not even analyse the size of the loss. As one of the girls said: 'It was a total loss.' This was greater than knowing how much the total was!"

Gelsa and her learners did eventually do some pedagogical work related to this disaster by taking up a suggestion made by a woman in the group:

She brought [up] the question of agricultural insurance. This was a theme that allowed one to take up the discussion on melon production again in the various classes, even though the assessment of the losses, which more directly involved mathematics, was impossible to perform, having met with resistance on the part of pupils.

Commentary

A tutor may have a particular set of desirable mathematical learning outcomes in mind, but if the primary purpose of the educational activity is to support the life of the community in which their learners live, she or he needs to be ready to adapt these. Gelsa expresses this thus:

“We got the community (especially the melon producers) to participate in the pedagogical process to qualify the ways of production, and not simply for the purpose of collecting ‘frozen’ elements which would allow the study of mathematics.”

In the Irish context, similar issues arise. In the earlier example, about the work of the OAK partnership, community development workers and learners decided that they wanted to be involved in a particular piece of social action and derived a literacy and numeracy curriculum from that. In Brazil, tutor and learners did likewise.

Both situations required decision-making about what counts as valid numeracy. Such decisions are at the heart of the co-operative negotiation between tutor and learners about what and how to learn.

The National Adult Literacy Agency (NALA) was established in 1980 and is an independent membership organisation, concerned with developing policy, advocacy, research and advisory services in adult literacy work in Ireland. NALA has campaigned for the recognition of, and response to, the adult literacy issue in Ireland.

**National Adult
Literacy Agency**
76 Lower Gardiner Street
Dublin 1
Telephone (01) 855 4332
Fax (01) 855 5475
Email literacy@nala.ie

NALA Cork
Telephone (021) 427 8655
Fax (021) 427 8665

Freephone
1800 20 20 65

www.nala.ie
www.writeon.ie



National Adult Literacy Agency
Áisíneacht Náisiúnta Litearthachta do Aosaigh

