

# STATE OF THE ART OF „VISUAL LEARNING” IN IRELAND National Report

**Fergus Dolan**  
National Adult Literacy Agency -

Contract Number:	225773 – CP – 1 – DE – GRUNDTVIG – G - 1
Project Title:	visuaLearning
EU-Research Programme and Financing:	Socrates Grundtvig 1
Project Co-ordinator:	Deutsches Institut für Erwachsenenbildung (DIE)
Project Homepage:	<a href="http://www.die-bonn.de/visual">www.die-bonn.de/visual</a>
Reporting Party:	National Institute Literacy Agency (NALA)
Publishing Date:	Dublin, 2006

## Contents

<b>1</b>	<b>Introduction</b>	<b>3</b>
1.1	Irish partner: The National Adult Literacy Agency	5
1.2	Adult basic education in Ireland: contexts and focus	6
1.3	Change and development	7
1.4	Mission statement	8
1.5	Philosophy	8
1.6	Defining adult literacy	9
1.7	Principles for good adult literacy work	10
<b>2</b>	<b>Understanding visual literacy</b>	<b>14</b>
2.1	Visual literacy, learning styles and preferences	17
2.2	Learning styles and Multiple Intelligences theory	19
2.3	Mind-mapping in relation to neuroscience, psychology and education	21
2.4	Curriculum benefits of visual learning in adult basic education	27
<b>3</b>	<b>Development of visual learning in the formal Irish educational system</b>	<b>31</b>
3.1	Development of visual learning in the adult basic education sector	31
<b>4</b>	<b>Description of Procedure</b>	<b>33</b>
4.1	Desk-based research	33
4.2	Interviews with professionals	36
<b>5</b>	<b>Findings</b>	<b>36</b>
5.2	Interviews	37
<b>6</b>	<b>Conclusions and recommendations</b>	<b>40</b>
6.1	Learner-centred ethos and facilitating different learning styles and preferences	40
6.2	Integrating key visual tools	41
6.3	Focus on curriculum	41
6.4	Training Programme	42
<b>7</b>	<b>Bibliography</b>	<b>44</b>

Any communication or publication by the beneficiary, in any form and medium, shall indicate that sole responsibility lies with the author and that the Commission is not responsible for any use that may be made of the information contained therein.

### 1 Introduction

Knowledge based societies today are highly focused on the transfer of information based on text. During school time and later on during vocational training, university studies or further education, learning proceeds through reading and writing. At the same time communication by means of visual images has increased a lot in everyday life as well as in business life. Many work processes in connection with computers work with icons. All software programmes, for example, Microsoft or Apple, guide the user through their programmes by the support of icons. Vending machines are equipped with touch screens as well as computer information sources in museums. They all include visual images, pictures and icons in order to make information more accessible to the user. In all these examples, the understanding of pictures and signs is required.

Common learning theories do not give an appropriate answer to the question of how learning happens through visual processes.

The question about the influence of pictures in learning process as well as their application to everyday life tasks is left to disciplines related to arts, for example, design and advertising, and has not yet been posed by adult educators. From our experiences in basic skills we know that people with literacy and numeracy difficulties particularly depend on processing information with the support of visual imagery. An example of this was highlighted during Gemma Lynch's interview with Jane Smith and Barbara Hammond, visual literacy practitioners from the Bray Adult Literacy Service. They gave the example of a recent advertisement for the shop Harvey Nicholls (known for its stock of exclusive designer brands). The advertisement was made to look like a calendar and on the first day of the month there was a picture of a pair of expensive designer shoes and for the rest of the month there was a picture of beans on toast. The message was very clear to students with literacy difficulties. Depending more on visual prompts is regarded as a compensation strategy for managing daily life. At the same time, it is a special strength or competence that has not been acknowledged or recognised enough as yet because this is an informally acquired competence.

With this project we want to build up on current findings from both basic skills and acquisition of informal competences in order to find out how so called “visual learning” eases the process of learning. One important goal is to strengthen “visual competence”. In Gemma Lynch’s interview with Terry Maguire, numeracy expert, Terry explained that visual learning tools such as photos, visits, posters, walks, paintings, sculptures etc. for discussing mathematics and building mathematical skills and eyes enable people to use their mathematical eyes in everyday life. This will help build their confidence to try new things and develop new skills rather than the deficit model of “I don’t know how to do school maths”.

### **1.1 Irish partner: The National Adult Literacy Agency**

The National Adult Literacy Agency (NALA) is the Irish partner on this project. NALA is a non-profit membership organisation, concerned with national co-ordination, training and policy development in adult literacy work in Ireland. NALA was established in 1980 and since then has campaigned for the recognition of, and response to, the adult literacy issue in Ireland. NALA’s achievements include:

- Third level qualifications for adult literacy practitioners in partnership with Waterford Institute of Technology. These qualifications include certificate, diploma, degree and masters;
- Inclusion of our key proposals in the first ever government White Paper on Adult Education, Learning for Life (2000);
- Development of a quality framework, including an assessment framework for the adult literacy service;
- A major basic education distance learning project on TV called “The really useful guide to words and numbers” go to [www.rug.ie](http://www.rug.ie) ; and
- Bringing Irish literacy practice onto the international stage.

An Executive Committee is elected at the Annual General Meeting (AGM) to ensure the aims of the Agency are put into practice. NALA currently employ a

staff team of 19 people. The Agency is a registered company with limited and charitable status. A grant for the Department of Education and Science enables the Agency to staff national and regional offices. The Department of Social and Family Affairs provide a grant towards staffing and publicity costs. Finally, the Department of Health and Children and FAS (national training body) also fund specific work.

## **1.2 Adult Basic Education in Ireland : contexts and focus**

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. Good practice in adult literacy work starts with the needs and interests of individuals. It is concerned with personal development and building confidence as well as technical skills. Literacy is deeply connected with the rights of individuals and communities: it is about their right to have a voice in society; to continue and extend their education; to read and to be read.

Adult basic education is a broad term which includes adult literacy work but also a wide range of courses at a basic or foundation level which take place in a range of contexts.

At the heart of the approaches to teaching and organisation in adult basic education in Ireland are the views and experiences of literacy students. “The contribution of learners has always been central to the development of adult literacy work at both national and local level. This ensures that ongoing work and new developments are informed by the learners’ perspective (*Guidelines for Good Adult Literacy Work*, 2005, p. 21).

Adult Literacy students are not a homogenous group. They vary in age, in educational and cultural background, in their work experiences, in reasons for

wishing to develop their literacy and numeracy, the contexts in which they study (*Guidelines*, p. 21). This variety and range affects how individual adults or particular learning groups wish to work on their literacy.

Most importantly students bring a complexity of knowledge, skills and competencies to their studies. The individual student is the only person who knows where their own skills and difficulties lie, what their strengths are and what gaps they wish to work on. Groups of students also discover what their shared needs are, what they can work on together and where they need to study individually. This complexity is at the core of curriculum development in adult basic education, as well as approaches to assessment, tuition and organisation.

### **1.3 Change and development**

In whatever context or setting adult basic education takes place, all are experiencing a period of rapid, and constructive, change and development. In particular, several initiatives relating to quality assurance, assessment, accreditation and curriculum are being introduced. These developments may appear at first to complicate and confuse the core process of enabling adults working on their basic education to develop their confidence and skills. However, if we look closely, it becomes clearer that the various elements are complementary and will provide greater support for students, tutors, organisers and managers.

### **1.4 Mission Statement**

NALA's mission is to ensure all adults have access to a range of high quality learning opportunities.

### **1.5 Philosophy**

Adult basic education in Ireland is based on a belief that effective learning builds on the wealth of life experience that that adults bring to their work on literacy

development. At the heart of this approach is the understanding that a “beginner reader is not a beginner thinker” (Frost and Hoy, 1985). Adult students bring to the process of learning a knowledge and understanding of themselves, their community and the wider society. They wish to engage with their teachers as equals and to support each other as fellow students. This underpins the ethos and development of adult basic education. The work and writings of a number of key thinkers have informed this approach, in particular Paolo Friere, Carl Rogers and Jack Mezirow.

### **1.6 Defining adult literacy in Ireland**

NALA’s definition of literacy states:

*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.*

*Good practice in adult literacy work starts with the needs and interests of individuals. It is concerned with personal development and building confidence as well as technical skills.*

Modern society requires an adequate level of literacy among all its adult members. Confidence in literacy opens many doors in adult life related to work and personal development, involvement in children’s learning, community and leisure activities. Numeracy and basic technological skills are integral elements of literacy as everyone faces a range of mathematical and technological demands in everyday life. For some people learning English as a second language is the core element of literacy learning.

Experiencing difficulties in any of these areas can create considerable barriers for people and can limit their capacity to participate fully in family, social and community life. In addition, the experiences which led to literacy difficulties and the expectations of society can seriously undermine people's self-confidence and self-esteem.

### **1.7 Principles for good adult literacy work**

- **Adult literacy work is based on a philosophy of adult education which is concerned with personal development and social action.**  
Because literacy in modern society is a complex issue, adult literacy work must enable students to connect their literacy and numeracy learning with the reality of their daily lives and with past experiences. 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 societal issues. They may then wish to become involved in local or national action for social or educational change.
- **Adult literacy learning is an active and expressive process. Students have a right to explore their needs and interests, set their own goals and decide how they wish to learn.**  
Adult literacy learning is most successful when the students are actively involved in the process and are encouraged to express their ideas and draw on their experiences. Students should also be enabled to explore the methods and materials which help them to learn most effectively and to take an active part in defining their goals and planning the learning programme. This has implications for training of tutors, teaching and learning approaches, choosing materials and the assessment of learning.
- **Adult literacy work respects different beliefs, cultures and ways of being. An ethical code of trust and confidentiality underpins all aspects of the work.**



This addresses the central issue of respect for difference and diversity. Adults who return to learning come from many different backgrounds, both from within Irish society and increasingly from other parts of the world. Adult literacy tutors and other organisations need to operate from a clear position of respect for different beliefs, languages, cultures and ways of life. This variety should be seen as providing opportunities for learning for all participants in a learning group or programme.

Confidentiality and respect must be established from the outset in order for students to feel safe. They can begin to develop the trust that is needed if meaningful learning is to take place.

However, a commitment to confidentiality should not reinforce any sense of embarrassment or stigma. This is important in order to lift the burden of responsibility or blame for individual students. Providers should make it clear that literacy difficulties are not in themselves something to be kept hidden.

- **Students' knowledge and skills are vital for the effective organisation of adult literacy work. Students should have the opportunity to be involved in all aspects of provision.**

Adult students have experience and knowledge which are essential for the successful planning, development and evaluation of adult literacy provision. Their views and understanding need to inform the way provision is organised, particularly publicity, course options, student support, resources and social activities. Students should be actively encouraged to become involved in the organisation. However some students choose to attend only for tuition and this choice should be respected.

- **Adults learn best when the decision to return to learning is their own and the environment is supportive, relaxed and friendly.**

Adults who decide to work on their literacy have taken an important and often difficult step. Students are more likely to attend regularly and stay in tuition when they see that their needs and concerns are at the heart of the

organisation, and that good tutoring and resources provide the best possible conditions for learning. It is impossible to avoid pressure from economic or political organisations to link adult literacy learning to welfare benefits or employment. Students based in other settings, such as training workshops, the workplace or in prisons, should have the right to decide whether they wish to work on their literacy skills.

Adults learn best when they enjoy the process. Learning provides opportunities for new social relationships. Adults and young people often find that their learning benefits from the chance to relax informally with other students and tutors. In addition, interaction in a learning group contributes to the learning process, and to the development of both the individual students and the organisation.

## **2 Understanding visual literacy**

There are many definitions of the term visual literacy, according to the International Visual Literacy association. John Debes first defined the term visual literacy in 1969 as referring to:

“ a group of vision competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences. The development of these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects, symbols, natural or man-made that he encounters in his environment. Through the creative use of these competencies, he is able to communicate with others. Through the appreciative use of these competencies, he is able to comprehend and enjoy the masterworks of visual communication” (International Visual Literacy Association website).

According to Dr Anne Bamford, University of Technology, Sydney (2003), visual literacy involves many different types of visual communication including: gestures, objects, signs and symbols. Dr. Bamford explains that visual sign systems are everywhere (for example, dance, film, fashion,

hairstyles, exhibitions, public monuments, interior design, lighting, computer games, advertising, photography, architecture and art). To be visually literate, she says, a person should be able to:

- Understand the subject matter of images;
- Analyse and interpret images to gain meaning within the cultural context the image was created and exists;
- Analyse the syntax of images including style and composition;
- Analyse the techniques used to produce the image; evaluate the aesthetic merit of the work;
- Evaluate the merit of the work in terms of purpose and audience; and
- Grasp the synergy, interaction, innovation, affective impact and/or “feel” of an image.

“ A visually literate person is able to discriminate and make sense of visual objects and images; create visuals; comprehend and appreciate the visuals created by others; and visualise objects in their mind’s eye” (Dr. A. Bamford, 2003, p.1)

Dr. Bamford goes on to stress that visual images are becoming the predominant form of communication in teaching and learning. She believes that this means visual literacy is now crucial for obtaining information, constructing knowledge and building successful educational outcomes. As a result she says that the teaching of visual literacy needs to help students to:

- Develop critical thinking skills in relation to visual images.

Jane Smith and Barbara Hammond refer to this in their interview with Gemma Lynch when they outline how graphics, IT, film are replacing books, although thought-provoking film is needed. Using film is an excellent tool to develop comprehension and critical thinking. For example “Why did X happen?” – critical analysis – to answer this question with a book you just have to flick back to the relevant page, in a film you tend to let it go/are less likely to rewind. You can use film to develop a student’s ability to process deeper meanings. Film involves more passive learning, where reading is more

active, but it is possible to use new media more deliberately and use them in the same way as we would have used books in the past.

- Enhance verbal and written literacy skills and vocabulary and be able to talk and write about images;
- Introduce image production, manipulation techniques and software.....;
- Integrate visual literacy across all curriculum areas;
- Ensure there is a balance between visual and textual literacies in the classroom;
- Be aware of visual literacy principles in the design of teaching and learning objects;
- Pose questions to students about images;

Jane Smith and Barbara Hammond state in their interview with Gemma Lynch that visual learning is a powerful tool to teach students to question and not just to receive information.

- Encourage students to look at underlying assumptions that are embedded in the images surrounding students; and
- Encourage students to critically investigate images and to analyse and evaluate the values inherently contained in images (2003, P.5).

According to Paul Messaris the ability to decode and interpret visual images is built on our everyday skills of physical and social perception. This, he believes, makes visual images a unique way of communication that is quite distinct from language or other forms of communicating. Messaris believes that visual images can have an impact on our “cognitive abilities, aesthetic sensibilities and responses to manipulative uses of media” (1994, p. 40). They are sources of information but they are not a language.

## **2.1 Visual literacy, learning styles and preferences**

Picking up on Dr. Bamfords recommendation that visual literacy be integrated across the curriculum, the National Adult Literacy Database (NALD), Canada describes three types of learning styles as follows:

“people who only see information will probably remember about 10% of it;  
People who both hear and see information will probably remember about 20% of it; and

People who hear, see and do something with information will probably remember 80% of it” (NALD, Canada). Smith and Hammond, in their interview with Gemma Lynch recommend ‘learning by doing’ rather than being handed a pack.

They say that learning styles are really just the many ways that people learn. The three styles above are grouped on the physical aspects of learning, or “visual (seeing), auditory (hearing) and kinaesthetic (motor learning)”. Visual learners then prefer print materials, diagrams and charts. NALD proposes that visual learners can benefit from:

- Having the spoken word turned into pictures;

Smith and Hammond outlined that at a recent NALA ESOL Conference a speaker discussed the importance of using “emotional” pictures, so that people can relate to them. Another speaker discussed the use of emotional objects, like a ring which can help visualise ideas and stimulate learning.

- Being helped to “see” the item of instruction (a drill bit, a thermostat);
- Practicing and look-say method;
- Underlining or highlighting key points or words with coloured pens; learning to clearly separate concepts on each page when note-taking;
- For maths, use of flash cards for problems, formulas, equations; visualising story problems; In her interview with Gemma Lynch, Terry Maguire stated that if students can visualise everyday mathematical shapes, forms, patterns, relationships, quantity and number, then everyday maths becomes visible to people and gives them the confidence to try new things and develop new skills.
- Using acronyms to visualise words in his mind; In their interview with Gemma Lynch, Jane Smith and Barbara Hammond stated that students

use acronyms and other methods such as visualising numbers in bundles – 10, 100, 1000 to help them visualise words. When learning about the word “night” the tutor draws a crescent moon instead of the dot over the “i” so that the learner pictures night time and the moon when they see or think about the word “night”. Another example is tracing the word “bed” to look like a bed.

- A variety of visual aids such as drawing/writing on the chalkboard, use of overhead projectors, visual materials, movies, film strips and video tapes;
- Using drawings, maps and graphs to complete assignments and present his/her ideas.

Discussions of learning styles in teaching and learning in adult basic education in Ireland cannot meaningfully take place without reference to multiple intelligences theory.

## **2.2 Learning styles and Multiple Intelligences theory**

“There is a constant flow of new information on how the human brain operates, how it differs in function between genders, how emotions impact on intellectual acuity, even how genetics and environment each impact on our...cognitive abilities. While each area of study has its merits, Howard Gardiner of Harvard University has identified different KINDS of intelligence we possess. This has particularly strong ramifications in the classroom, because if we can identify (students’) different strengths among these intelligences, we can accommodate different (students) more successfully according to their orientation to learning”. (McKenzie).

Howard Gardiner began with seven Multiple Intelligences, they were:

1. linguistic – words and language
2. logical-mathematical – logic and numbers
3. musical – music, sound, rhythm
4. bodily-kinaesthetic – body movement control

5. spatial-visual – images and space
6. interpersonal – other people's feelings
7. intrapersonal – self awareness

This theory has been added to (and is as yet incomplete as Gardiner believes the number of possible intelligences that may exist has not yet been reached) and three new intelligences have been added

8. naturalist – natural environment
9. spiritual/existential – religion and “ultimate issues”
10. Moral

Mark K. Smith notes that project SUMIT (Schools Using Multiple Intelligences Theory) have identified indicators to characterise success in schools applying multiple intelligences (MI) theory in practice. They are:

- Culture – support for diverse learners and hard work. Acting on a value system that maintains that diverse students can learn and succeed, that learning is exciting, and that hard work by teachers is necessary.
- Readiness: awareness-building for implementing MI – building staff awareness of MI and of the different ways that students learn.
- Tool – MI is a means to foster high quality work. Using MI as a tool to promote high quality student work rather than using the theory as an end in and of itself
- Collaboration – informal and formal exchanges. Sharing ideas and constructive suggestions by the staff in formal and informal exchanges. In their interview with Gemma Lynch, Jane Smith and Barbara Hammond stated that regarding recognition of visual objects a picture of photo is a great method to develop a relationship with a person or allow a relationship to develop in a group.
- Choice – meaningful curriculum and assessment options. Embedding curriculum and assessment in activities that are valued by both students and the wider culture sciplines.

Smith concludes that this classification of indicators could be useful to informal education practice:

“Arguably, informal educators have traditionally been concerned with the domains of the interpersonal and intrapersonal, with a sprinkling of the intelligences that Howard Gardiner identifies with the arts. Looking to naturalist linguistic and logical-mathematical intelligences could help enhance their practice”.

### **2.3 Mind-mapping in relation to neuroscience, psychology and education**

“Educationalists are becoming increasingly aware of the advances in understanding that neuroscience is making, and are looking for insights it can offer to improve their practice” (Hall, 2005, p1).

Hall discusses the links between neuroscience, psychology and education and characterises them as follows:

- Neuroscience – where science is interested in the inner workings of the brain
- Psychology – where science is interested in the behavioural impact of various types of input applied in certain contexts
- Education – where science is interested in the practical application of knowledge about human behaviour to promote effective teaching and learning (p. 1).

These links between the brain as a physical organism, the behavioural impact of certain stimuli on the brain and understanding human behaviour to promote effective teaching and learning are evident in the field of “mind mapping”.

Tony Buzan (1988) is a leader in the field of mind-mapping and making the most of your mind. In talking about the potential of the brain, he notes that it was not until the 20<sup>th</sup> century that significant progress was made in understanding how the brain works. Major breakthroughs have been made since then that have implications for educational psychology (p. 10). Buzan discusses research by Professor Ornstein of the University of California. His research looked at how



different activities are handled by the left and right sides of the brain. He found the following:

Left brain handles activities related to:	Right brain handles activities related to:
Logic	Rhythm
Lists	Colour
Linearity	Imagination
Words	Daydreaming
Numbers	Dimension
Sequence	Spatial awareness
Analysis	Music
Other similar activities	Other similar activities

(1988, pp 11-12)

Basically Ornstein found that if a person trained to use one side of the brain, they had difficulty with the activities involved with the other side. However if both sides of the brain are stimulated overall effectiveness and ability are increased. In her interview with Gemma Lynch, Terry Maguire outlined that mathematics are often taught in a vertical fashion but a horizontal approach is very important for becoming happy, comfortable and engaged in their own mathematics and mathematical understanding.

Interpreting this into an adult education context, Buzan highlights that traditional education has focused on the “three R’s” of reading, writing and arithmetic. These are all left brain activities. Traditional education has tended to undervalue the skills and activities involving the right brain. Maguire echoes this when she recommends that the methods must also get outside the classroom so numeracy through dance, musical rhythm, mathematical walks, how to communicate visually aspects of our political system/government etc. Taking this a step further, Buzan expands that discussions of the left and right brain refer to the upper brain. The upper brain, therefore, handles intellectual activities. Conversely, the lower brain handles emotions and the kinds of activities that the upper brain doesn’t need to be aware of for example, temperature control or digestion. To

maximise the potential of the upper and lower brains, Buzan recommends clarifying one's goals and visualising how they can be achieved. A key point that Buzan makes in relation to adult education is that if the brain is stimulated, no matter at what age, we can learn new things. In her interview with Gemma Lynch, Terry Maguire outlines that visual learning is particularly good for mathematics because many tutors and students have anxieties around mathematics and have often many adults have had troubled mathematics histories. So we need new and innovative ways to engage them or get them to "buy in" or un-learn/re-learn mathematics for everyday life. In order to do this, Buzan recommends developing memory skills. He states that there are two simple rules for developing memory:

1. Links. You must make dramatic and simple links between the things you want to remember, or between the things you want to remember and specially prepared memory code lists. This means that you throw things together, place things on top of each other, blend them with each other, or substitute one for the other.
  2. Outstandingness. You must exaggerate in every way possible the combined image, using all your senses in the process. This means that the combined image must be larger than life, garishly coloured, humorous or absurd; and you must, where possible, be able to imagine yourself tasting, touching, hearing, seeing and smelling it.
- (1988, pp 43-44)

This, in essence, is the theory behind mind mapping. Mind mapping itself involves (JCU Studies On-line) writing an idea at the centre of a piece of paper and adding related ideas that radiate out from this central idea. Visually representing ideas and links on paper in this way facilitates understanding and ability to remember new information. The following steps are central to mind mapping:

Look for relationships	Show connections between ideas using: lines, colours, arrows, etc.
------------------------	--

	Personalise the map using personal symbols and designs (doodles) as these will create visual and meaningful relationships between ideas to assist understanding and memory/recall.
Draw quickly on unlined paper without pausing, judging or editing.	This avoids linear thinking and allows for every possibility to get on the map – the least likely possibility may turn out to be key
Use capitals	Using capitals promotes sticking to the essential or key points and they are easier to read in a diagram
Put main idea in the centre	Landscape style facilitates this as it maximises the room for ideas to radiate out from the centre
Leave lots of space	This allows for the mind map to be added to over periods of time

Tony Buzan developed mind maps in the 1960's to help his students to take notes that involved only key words.

#### Advantages of mind maps

- They work the same way the brain works
- Memory is made up of thousands of links and mind maps are a visual representation of how memory works

It is easier to recall mind maps than linear notes because they are a visual representation of thoughts and links and key words to trigger memory.

Terry Maguire tells us that as we move into the future students will need a sense of shape, space and pattern, an ability to see relationships and interpret data.

- Starting at the centre of the page allows thoughts to spread out in all directions
- How a mind map is organised reflects how the brain organises ideas

- Mind maps are easy to review and reviewing mind maps reinforces memory
- The mind remembers what stands out and mind maps are so visual that it is easy to make the key points stand out and therefore remember them.

Mind maps are useful for: notes, recall, creativity, problem solving, planning and presentations.

In Gemma Lynch's interview, Jane Smith and Barbara Hammond gave the example of adult literacy students using photos. The students can take a picture of something they like and something they don't like and then discuss this with their group/tutor. Pictures are more emotional and more engaging than words. Memories and stories come out of pictures and discussions. Presentation of the photos can include visual skills, for example, given the space on a page, how many pictures would students include? Students in the County Wicklow adult literacy service were involved in a project to include a photo in a poster on County Wicklow that will be produced in September 06.

Discussing mind-mapping in relation to neuroscience, psychology and education, then is all about understanding how the brain works and what visual techniques we can employ to aid the teaching and learning process. Curriculum is also fundamental to the teaching and learning process.

## **2.4 Curriculum benefits of visual learning in adult basic education**

Curriculum in adult basic education in Ireland is grounded in the principles of good adult literacy practice and is underpinned by the theoretical approaches outlined earlier in this paper. There is no core curriculum for adult basic education (ABE) in Ireland. As ABE is learner-centred, curriculum is negotiated between tutors and students based on what students already know and can do and what they want to be able to do at the end of their learning journey. Short and long term goals are agreed as are the types of "exercises" that will be used to help students reach those goals. Curriculum, in this sense, is individualised,

learner-centred and contextualised. It is often written up as an individual learning plan.

Linking curriculum and visual learning, Keith Lightbody notes that students learn better when tutors support a variety of learning styles. In her interview with Gemma Lynch, Terry Maguire notes that the ability to be able to see and think in more than one dimension comes from a visual approach to developing mathematics. Reading and writing skills can be improved through the use of visual learning tools. Linking with Howard Gardiner's Multiple Intelligences theory, Lightbody says that visual literacy can contribute to visual-spatial, bodily-kinaesthetic, musical, interpersonal, intrapersonal, linguistic and logical-mathematical intelligence.

Lightbody quotes the New Jersey Core Curriculum Content Standards (Language, arts and literacy standards and progress indicators) of May 1996, as follows:

“Students learn how to view critically and thoughtfully in order to respond to visual messages and images in print, non verbal interactions, the arts and the electronic media. Effective viewing is essential to comprehend and respond to personal interactions, live performances, visual arts that involve oral and/or written language, and both print media (graphs, charts, diagrams, illustrations, photographs and graphic design in books, magazines and newspapers) and electronic media (television, computers, film). A media-literate person is able to evaluate media for credibility and understands how words, images and sounds influences the way meanings are conveyed and understood in contemporary society. Students need to recognise that what they speak, hear, write and read contributes to the content and quality of their viewing”

Lightbody also states that

- Visual skills can be learned
- Visual skills are not usually isolated from other sensory skills
- Teachers can provide appropriate learning environments and materials

- Teachers can allow students to create their own visual messages
- Digital literacies (for example, computer, visual, audio, print reading, information, multi-media) each require different skills
- Competency in one literacy does not necessarily transfer to another
- Visual arts can affect student emotions and aid understanding
- Students need to learn how to recognise and respond to visual and print messages of humour, irony and metaphor
- Students require guidance to distinguish between factual and visual representations

Some elements that Lightbody believes may contribute to the “look” and “feel” of visual resources include:

colour, proportion, form, shape, texture, emotion, feelings, typography, design and composition.

“As technology advances, new ways of transmitting knowledge are developing rapidly. When we expand our methods of literacy instruction by including TV, drama, multimedia, comics and other formats, we may be able to reach more students in the .....classroom and meet students’ different learning styles that would be the case using purely traditional methods” (Chia-Hui Lin, December 2003).

### **3 Development of visual learning in the formal Irish educational system**

According to Brian O’Neill (2000, p57), there has been a rapid development and growth in the popularity of media-related courses in Ireland in recent years. Media teaching is now within the core curriculum for the general student population. It is evident in the core curriculum either as a subject in its own right or part of another subject, for example, English.

“The aim of achieving computer literacy and being equipped to participate in the information society have received massive encouragement and investment because they are seen as vital to Ireland’s future economic well-being” (O’Neill, 2000. P 63)

O’Neill concludes (200, P 64) that the same vigorous response is needed in the development of a far more reaching and imaginative media education initiative

#### **3.1 Development of visual learning in the adult basic education sector**

To date NALA has not conducted a national survey of visual tools in use in ABE practice nor is the Agency aware of any other similar study.

However in its daily support, co-ordination and training role NALA is aware of the importance of visual learning tools to adult literacy practice. In her interview with Gemma Lynch, Terry Maguire stated that an advantage of visual learning in numeracy was that it offered opportunities to develop new skills and helped build students’ confidence.

NALA is aware, for example, that services working with people with learning disabilities have a number of visual materials at their disposal to support their literacy students.

Vocational Education Committees, Community Development and Workplace Basic Education programmes use a number of visual tools from photographs to drama to art to support literacy learners. In their interviews with Gemma Lynch Terry Maguire recommended learning through dance and musical rhythm and Jane Smith and Barbara Hammond recommended using the digital camera.

The Agency has promoted visual learning tools in its own work on:

- Plain English – see Writing and Design Tips – [www.nala.ie/publications](http://www.nala.ie/publications)
- Family literacy – see ‘Storeysacks’ - [www.nala.ie/nalaprojects/](http://www.nala.ie/nalaprojects/)
- Distance education – see [www.literacytools.ie](http://www.literacytools.ie) and Read Write Now – [www.nala.ie/publications](http://www.nala.ie/publications)
- ESOL materials – see [www.nala.ie/publications](http://www.nala.ie/publications)
- NALA/Trocaire Pack – see [www.nala.ie/publications](http://www.nala.ie/publications)
- Numeracy – numeracy ‘Storeysacks’ – [www.nala.ie/nalaprojects/](http://www.nala.ie/nalaprojects/)
- FETAC – see [www.fetac.ie](http://www.fetac.ie) for information on various modules involving visual tools
  - below adult literacy The new 'minor awards' at levels 1 and 2 include non-verbal communication and there are draft learning outcomes for these also on the website ([www.fetac.ie](http://www.fetac.ie)) and the proposed pool of minor awards includes mime and movement, dance, drama.
  - above basic literacy (Level 3 and above on the new qualifications framework) which include media studies/media awareness, craft using any medium (wood, clay, metal, stone, for example), video production and a number of art and drama modules ([www.fetac.ie](http://www.fetac.ie)).

This project will help NALA develop a clearer map of the extent, importance and range of visual tools in use in ABE practice in Ireland. NALA will then work with the partners on the project to develop a training of trainers course in the use of visual learning tools. The aim is that this course, in the Irish context will be accredited by Waterford Institute of Technology as part of the NALA/WIT Literacy Development Project.



## **4 Description of Procedure**

Desk and web-based research plus interviews with two practitioners.

### **4.1 Desk-based research**

The desk research centred on web-based information on visual learning and visual literacy and on NALA publications of relevance to a description of both the Agency's understanding of visual learning in the Irish ABE context and to highlight the context of ABE provision in Ireland and to situate visual learning developments within this context.

The web-based research was conducted using the "Google" search engines and focusing on key words such as:

- visual learning
- visual literacy
- Visual learning or visual literacy tools or techniques

And adding "in education", "in adult education", "in adult literacy" or in "adult basic education" to further refine the search.

A large amount of data was uncovered from this web-based search and it was possible to categorise it under the following headings:

- Understanding visual literacy learning
- Visual literacy learning styles and preferences
- Mind-mapping in relation to neuroscience, psychology and education
- Curriculum benefits of visual learning in ABE

The findings from this desk and web-based research helped to inform the analysis of the professional interviews.

### **4.2 Interviews with professionals**

Two interviews were carried out using a generic template devised for use by all project partners to ensure comparability of findings. Where appropriate or necessary the questions were slightly altered to make them more relevant to the

literacy and numeracy professionals. There was no need to amend the questions for the educational psychologist.

The interviews lasted between one hour and one hour and thirty minutes. They supported the findings from the desk and web-based research and led to key insights for the development of an accredited integrated training programme for adult literacy professionals in Ireland.

## **5 Findings**

### **5.1 Desk research:**

- From NALA's experiences in basic skills we know that people with literacy and numeracy difficulties particularly depend on processing information with the support of visual imagery.
- Any visual learning in the ABE context in Ireland would have to take into consideration the views of the adult literacy students.
- According to Dr Anne Bamford (2003), visual literacy involves many different types of visual communication including gestures, objects, signs and symbols. She states that to be visually literate a person should be able to understand, analyse and interpret the subject matter and cultural context of images. And she stresses that visual images are becoming the predominant form of communication in teaching and learning. Finally, Dr Bamford recommends that visual literacy be integrated across the curriculum.
- Paul Messaris states that the ability to decode and interpret visual images is built on our everyday skills of physical and social perception, which makes visual images a unique way of communicating.
- Howard Gardiner has identified the different kinds of intelligences that we possess and he argues that if we can identify students' different strengths and learning styles among these intelligences, then we can more successfully direct learning towards their strengths. One of the

intelligences which Gardiner identifies is spatial intelligence, which covers images and visual elements.

- Tony Buzan has researched mind-mapping and making the most of your brain. He recommends clarifying one's goals and visualising how they can be achieved. A key point that Buzan makes in relation to adult education is that if the brain is stimulated, no matter at what age, we can learn new things.
- Mind-mapping itself involves writing an idea at the centre of a piece of paper and adding related ideas that branch out from this central idea. Visually representing ideas and links on paper in this way facilitates understanding and ability to remember new information.
- Keith Lightbody notes that students learn better when tutors support a variety of learning styles and linking with Howard Gardiner's Multiple Intelligences theory, he goes on to state that visual learning can contribute to visual-spatial, bodily-kinaesthetic, musical, interpersonal, intrapersonal, linguistic and logical-mathematical intelligence.
- Lightbody also states that visual skills can be learned and that teachers can provide appropriate learning environments and materials for visual learning.

## **5.2 Interviews:**

The following findings are from the interviews with Terry Maguire and Jane Smith and Barbara Hammond, visual literacy 'experts' working in Ireland.

- Visual learning can be a great way of showing sequence and offers the ability to be able to see and think in more than one dimension.
- Visual learning is an integral part of numeracy and is great for demonstrating 'maths in everyday life' such as in photos, sculptures, posters, paintings, walks, shapes, patterns etc.
- Visual learning Visual learning aids creativity and problem solving: images are more emotional and more engaging than words.

- Teaching in visual literacy should be practical, learn by doing rather than being handed a pack.
- Students need to feel comfortable using visual tools and not feeling that it is a crutch or last resort.
- Visual learning helps to make complex visual resources such as maps, charts and diagrams more accessible.
- Visual learning helps students get a sense of shape, space and pattern and an ability to see relationships and interpret data and can link the real world with the mathematical world.
- Visual learning makes it is easy to get 'buy-in' from students and is good for confidence building.
- Visual learning offers opportunities to explore and use IT as well as opportunities to develop using new skills.
- There is a danger of students depending on visual cues and of students developing a sense that they don't need words.
- Visual learning in mathematics can be more time consuming.
- Visual learning can help students become aware how critical awareness is a powerful tool, which can teach learners to question and not just to receive information.

## **6 Conclusions and recommendations**

### **6.1 Learner-centred ethos and facilitating different learning styles and preferences**

- Effective learning requires active participation from the learner and confidence in their ability to learn.
- Visual learning methodologies selected and developed for working with adult learners should be designed to address the many dimensions of literacy, both technical and non-technical.
- Selecting visual learning materials and approaches should be a joint venture between tutors and students. Initially, students may rely on tutors to suggest methods and content but as relationships based on respect and

equality develop, students usually become increasingly involved in directing the learning process.

- Learners need to be helped to understand and develop their preferred learning styles. Some people can confidently rely on their visual memory , while others are more skilled in distinguishing and remembering sounds.
- People also vary in the extent to which they require practice and repetition to absorb new learning. Visual learning teaching methods therefore need to be flexible enough to accommodate different learning styles.

## **6.2 Integrating key visual tools**

It should be stressed to teachers that integration is key in relation to visual learning. This is about not jumping on the new bandwagon of visual learning but trying to find space for visual learning in the teaching and learning process. What is available is not bad for everybody and what we are offering is not good for everybody. So rather throwing out the current in favour of the new, we should find appropriate space for them to sit in tandem. So we need new and innovative ways to engage teachers and students or get them to “buy in” to visual learning techniques/ideas.

## **6.3 Focus on curriculum**

- Successful learning is much more likely to take place when learners play and active part in the learning process.
- Adult literacy learners come from a wide range of backgrounds and have differing needs and aspirations.
- There can be no set visual learning syllabus if each individual is to be adequately supported in their own learning.
- Adults of all ages will learn best when they are given the opportunity to:
  - a. discuss the visual learning teaching methods and approaches that help them to learn most effectively

- b. take an active part in defining their visual literacy learning needs, directing the content of study, and selecting the visual materials that suit them best;
- c. work co-operatively to find ways of helping each other to learn effectively

#### **6.4 Training Programme**

For the “visual learning” training course to be successful in Ireland the following core points must be built into the course:

- ABE tutor training programmes in Ireland are concerned not just with the techniques involved in teaching literacy to adult learners but also with the skills required to promote active learning. For example, involving students in directing their own learning, finding ways of building confidence in a supportive atmosphere and thinking about effective group activities.
- Tutors need to see that adult learners are equal to themselves and attitudes that conflict with that principle are unacceptable
- The course should be sufficiently long and detailed to allow tutors to understand fully what is involved in using visual learning tools to help adults with literacy difficulties and give them the opportunity to judge whether visual learning tools work best for them.
- Students and tutors experienced in using visual learning tools in teaching and learning in ABE should be involved in developing the course to share their experiences and develop ideas. Training courses that do not involve students in a significant way cannot fully communicate the effects of using visual learning tools to overcome literacy difficulties. The only people who can speak about this with an authentic voice are students.
- It is important that the “visual learning” tutor training course reflect the philosophy of adult education. The methods used should be those that encourage active learning and participation.

- Regular in-service training is required. Tutors need to develop their skills in using visual learning tools in different areas such as learning styles, teaching reading, numeracy, ESOL and using computers.
- Integrating the course into the existing NALAWIT accreditation project is particularly useful for staff members who need to gain relevant formal qualifications.

## 7 Bibliography

### Books

Buzan, T. (1988). *Make the Most of Your Mind*. London, UK, Pan Books.

Messaris, P. (1994). *Visual Literacy. Image, Mind and Reality.*, Oxford, UK, Westview Press, Inc.

### Articles in Books

Frost, G. and Hoy, C. eds. (1985). *Opening time: A writing resource pack*. Manchester: Gatehouse Project.

### Reports

Bamford, A. *The Visual Literacy White Paper*. A report commissioned for Adobe Systems Pty Ltd., Australia, 2003.

Department of Education and Science (2000). *White paper on adult education*. Dublin: DES.

National Adult Literacy Agency, Ireland (2005). *Guidelines for good adult literacy work*. Dublin: NALA.

### Electronic referencing

Chia-Hui Lin. (2003). *Literacy Instruction Through Communicative and Visual Arts*. The Clearing House on Reading, English and Communicative Digest # 186, Eric Digest – [www.indiana.edu/~reading/ieo/digests/d186.html](http://www.indiana.edu/~reading/ieo/digests/d186.html)

Hall, J. (2005) *Neuroscience and education. What can brain science contribute to teaching and learning?* Spotlight 92, Glasgow, Scotland. The SCRE Centre – [www.scre.ac.uk/spotlight/](http://www.scre.ac.uk/spotlight/)

International Visual Literacy Association website – [www.ivla.org/org-what\\_vis\\_lit.htm](http://www.ivla.org/org-what_vis_lit.htm)

JCU Studies On-line - [www.jcu.edu.au/studying/services/studyskills/mindmap/howto.html](http://www.jcu.edu.au/studying/services/studyskills/mindmap/howto.html)

Lightbody, K. (2006). Visual Literacy in classrooms –  
[www.members.ozemail.com.au/~leemshs/visual.htm](http://www.members.ozemail.com.au/~leemshs/visual.htm)

McKenzie, Walter – [www.surfaquarium.com/MI/nine\\_intelligences.pdf](http://www.surfaquarium.com/MI/nine_intelligences.pdf)

National Adult Literacy Database, Canada [www.nald.ca/clr/demyst/chapter7.htm](http://www.nald.ca/clr/demyst/chapter7.htm)

O'Neill, B. (2000) *Media Education in Ireland: An Overview*. Irish Communication Review, Volume 8, Dublin, Ireland, Dublin Institute of Technology (<http://www.icr.dit.ie/index8.html>) pp 57 – 64

Smith, Mark. [www.infed.org/thinkers/gardiner.htm](http://www.infed.org/thinkers/gardiner.htm)