Section 2

Participants in adult programme Charcoal and Chocolate 2004

Photo: Irish Museum of Modern Art, Dublin

Learning in Museums

'Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits'

Article 27, Universal Declaration of Human Rights

2.1 Setting the scene

The gap between museums and their potential audiences was probably smaller in the 19th century. At that time, museums across Europe had a specific role in society which included the representation of power, the creation of national identity, and the educational and moral improvement of the masses. But in Britain, for example, although cultural organisations set their sights on the respectable poor, they drew the line at criminals, vagrants and those residents in the poor house. Library rules enforcing clean hands and faces were often rigorously applied to counteract fears about the transmission of disease and contagion through books. And although they were originally intended to improve and educate the masses, museums soon assumed more middle class connotations which continue to influence contemporary cultures and audiences. By the end of the nineteenth century the educators and improvers had been effectively marginalised and aesthetes and academics were in the ascendancy.

This shift in focus largely remains, although in some countries, for example the UK and the Netherlands, the demand for arts and cultural learning in museums has assumed greater prominence on the cultural and political agenda, especially in relation to non-traditional audiences. In other European countries, museums open up to new audiences on their own initiative or as a response to community requests, despite the absence of a political agenda promoting this.

Whether for political, cultural or institutional reasons, museums take on many roles: including being agents of social change, with responsibilities for social inclusion and community development, as well as supporting scientific development and lifelong learning.

The quality and provision of education programmes for adults in European museums varies enormously. In some institutions programmes are well-developed and often include accredited courses, practical workshops, guided visits, discussions, lectures or family events. In others, education is still seen as an 'add-on', with token attempts to attract non-traditional learners pursued as one-off

projects, operating on the margins of the museums' main concerns.

Learning in museums is different from the learning which takes place in formal education establishments since most learners are informal ones. On the whole, museums are unaware of the learning objectives of their users: whether it is for pleasure, in relation to a special interest, or in pursuit of identity and cultural meaning. Visitors may not view their visit to a museum as a learning experience, as such, even though they may be learning whilst enjoying themselves. Regular visitors are attracted by the informality of the visit and the fact that taking part does not require too great a commitment of time or money. For those who find museums alien places, however, the atmosphere can seem immensely formal and daunting, and the commitment needed to make such a visit may well be both costly and considerable.

The outcomes of museum learning experiences are equally diverse. Among the most positive outcomes are increased knowledge and understanding, the development of new skills and abilities, and the inspiration to learn more. Quite often learners use their visits to museums to reinforce the knowledge they already have and to share this with other people, for example, with their children. Learners who find a connection at the museum with their interests, experience or sense of themselves in the world are more likely to re-visit than learners who do not make that connection.

2.2 Approaches to learning in museums

The provision of learning opportunities in museums should be based on the application of learning theories and successful methodologies and practice with adult learners. It is also quite often predicated on strongly held cultural, institutional or personal assumptions by museum staff towards visitors. Broadly speaking there are four main approaches to learning in museums, any combination of which may be in use at the same time:

- **Instructive or didactic**
- **Active or discovery learning**
- **Constructivist**
- **Social constructionist**

THE INSTRUCTIVE OR DIDACTIC APPROACH

In this approach the museum regards itself as the teacher and visitors as a largely passive and receptive audience. The institutional culture tends to be hierarchical with great respect given to expert knowledge, at the expense of informal or everyday knowledge. Mediators or guides may act as the messengers of specialists in the transmission of pre-decided information to learners. This approach underpins, for example, the traditional guided tour.

The advantage of the didactic approach is that it focuses on delivery of content which can be quickly assimilated or memorised – the 'facts' about a work of art or an object. The disadvantage of this approach is that knowledge is selected by 'experts' and assumes that visitors will learn what has been selected, with little room for discussion: learning is seen as fixed and cumulative, and knowledge regarded as neutral, objective and universal. The didactic approach does not allow for different learning styles, since content is transmitted as though everyone learns in the same way. Some museums have modified

Participants in workshop for older people in association with the National Theatre

Photo: Irish Museum of Modern Art, Dublin

their guided visits to ask questions of the audience, both to determine prior levels of knowledge and to involve the audience more actively in the learning process.

THE ACTIVE OR DISCOVERY LEARNING APPROACH

Active learning became popular in the science museums of the 1970s, and has since become common in other types of museum. Adopting a discovery learning standpoint suggests that the museum believes that learning will happen best in a relaxed, informal atmosphere, where the distinctions between education and entertainment are blurred or merged. Museum staff are frequently organised into teams of complementary professionals who develop both exhibits and education content. Learning is regarded as a process of inquiry that involves role-playing and activity-based, direct participation by learners, who are seen as participants rather than a passive audience. Great use is made of hands-on and interactive learning experiences. It is this approach to learning that underpins interactive exhibits in many contemporary museums.

THE CONSTRUCTIVIST APPROACH

When museums adopt a constructivist approach, the institution becomes a forum in which there can be many different kinds of learning experiences for different visitors. The focus is on the learner rather than the exhibit or the subject content. Museum staff work in teams and visitor knowledge is integrated through evaluation and the activity of audience advocates. Learning is regarded as an active process, as well as a social activity within a specific context. Since learners bring their own perspectives, values and experiences, museum educators seek to provide different kinds of learning opportunities through different exhibition styles, learning styles and levels of engagement. It is this approach to learning that underpins the application of Kolb's theories to learning in some Dutch museums, described below.

THE SOCIAL CONSTRUCTIONIST APPROACH

This approach assumes that museums are sites in which social, cultural, historical and political knowledge is constructed and negotiated. Visitors are seen as interpreters who have the right to negotiate this knowledge according to their own identity and position in society. In this context the learners' class, gender, race, ethnicity, sexuality, religion, and so on become of vital importance to what they bring to bear on their interpretation of knowledge. The context is assumed to be more important than the exhibit or the content. Knowledge is regarded as fluid – in the post-modern sense – in that it is created out of struggle and conflict and is subject to constant change and re-negotiation. It is this approach to learning that has influenced attempts to include learners' voices and personal narratives directly in the creation of multi-cultural exhibitions.

2.3 Learning theories: understanding how adults learn

Given these different approaches to museum education, some understanding of how adults learn is an important starting point for museum educators. A familiarity with and application of learning theories within exhibitions, programmes and activities enables a museum to become more responsive than was traditionally the case, with a greater appeal to people with different backgrounds, learning styles and intelligences.

Adults tend to learn in different ways, bringing different amounts of knowledge or experiences with them to the learning situation, therefore museums that want to stimulate learning need to focus on learners and find ways of putting them at the heart of what is to be experienced. During the last ten years or so, much work has been done in museums and higher education institutions developing successful methodologies, learning from good practice, and sharing success with colleagues. The best museums have paid increased attention to visitor research and preferences, developing successful ways of working with their audiences by the application of learning theories and learning styles.

LEARNING THEORIES APPLIED TO MUSEUMS

Most learning theories are products of the 1970s and 1980s, when interests in social psychology and learning led to a multitude of learning theories.

See for a survey www.funderstanding.com/theories.cfm

Most of these theories – associated with Jean Piaget, Jerome Bruner, Benjamin Bloom David Ausubel and Howard Gardener, for example - have been developed further over the years and are still used to a greater or lesser extent in formal and informal education, coaching and training. Though most of them deal with learning at schools and universities and in adult education, some have found their way into museum education, especially in connection with the instruction of children and young people.

One of the theories that became popular in museums in the 1970s was **Jean Piaget**'s theory of the four stages of development:

- Sensimotor stage of learning – birth to 2 years old
- Pre-operational stage: language and symbolic representations – 2 to 7 years
- Concrete operations: abstract reasoning, based on personal experiences – 7 to 11 years
- Formal operations: hypotheses and analysis of abstract notions – 11 to 15 years and above.

Piaget's ideas were further elaborated by **Jerome Bruner** who also described the three different ways of learning which adults use alternatively to learn something new:

- The performing mode: to do things
- The expressive mode: to make a mental image; to make connections
- The symbolic mode: where learning is separated from the concrete (Whether a person uses this last mode depends on age and intellectual capacities).

Another learning theory that became prominent in education and was also used in museum education in the 1970s and 1980s (and is still in use in some areas) was **Benjamin Bloom**'s theory of the three learning domains:

- Cognitive learning: the acquisition and organisation of knowledge

- Affective learning: the instinctive incorporation of knowledge and attitudes
- Psychomotor stage learning: the acquisition of skills.

Some educators at the time became interested in theory that people (children) learn better if beforehand 'advanced organisers' are offered. This became the basis of the methodology which combines an introduction to the subject in the classroom, followed by more information and experiential learning in the museum.

At the moment one of the most popular learning theories is that of **Howard Gardner**, the first version of which was first presented in the 1980s, but which is still being developed and expanded.

Gardner's theory is based on the conviction that learning and teaching should focus on the particular intelligences of each person. He discerns eight intelligences:

- **Verbal Linguistic**
- **Logical Mathematical**
- **Musical**
- **Spatial**
- **Bodily Kinesthetic**
- **Interpersonal**
- **Intrapersonal**
- **Naturalistic**

Everyone possesses all of these intelligences but some qualities are more prominent than others. What intelligences a person develops depends on genetics and also on cultural background. Some museums employ Gardner's multiple intelligences theory, both in education programmes and in the display and interpretation of objects.

A theory especially prominent in professional development and management, is the **Myer Briggs Type Indicator (MBTI).** It is, strictly speaking, a personality theory, but since learning has a lot to do with people's personality, it is relevant to museum education. In the MBTI, Isabel Myers defined personality types, based on four dimensions:

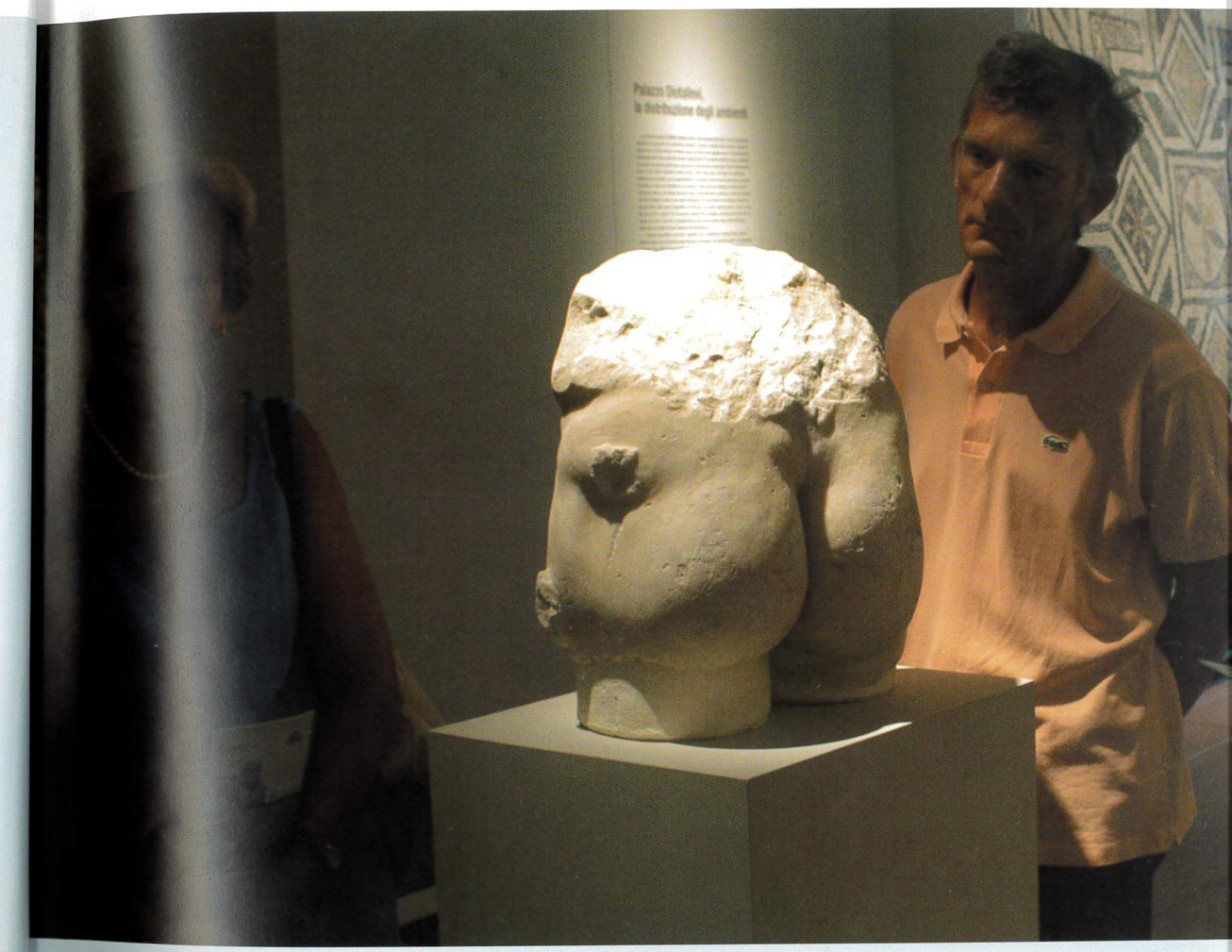
- **Extroversion versus introversion**
- **Sensing versus intuition**
- **Thinking versus feeling**
- **Judging versus perceptive**

The resulting combinations can indicate 16 personality types.

See:
www.personalitypathways.com

Paulo Freire, on the other hand, is more concerned with the kinds of knowledge that can assist people to change their lives and change their world through liberatory learning**.** He is probably the most influential and radical thinker about informal and popular education in the twentieth century. His work in Brazil, until he died in 1997, gained him an international reputation that has inspired and informed countless others across the world to make use of his ideas and methods. Freire made observations about 'banking' education, in which learners are passive and have ready-made knowledge 'deposited' in their minds, thereby maintaining a culture of silence, in which dominated individuals lose the means to respond to the culture forced on them by more dominant members of their society.

From the catalogue of the exhibition Gli occhi del pubblico (Bologna, IBC-CLUEB, 2006)
Photo: Isabella Balena



Freire's dialogical method is based on a cooperative, two-way approach to learning, which emphasises the interchangeability of teachers and learners. Once learners become increasingly aware of the roots of their oppression within the culture of silence, they develop the kind of critical consciousness that enables them to become empowered and to take part in collective action, leading to personal and social change. In the process the world becomes less oppressive and more fully humanised, which is the historical task of any movement concerned with liberation.

KOLB'S LEARNING THEORY AND ITS APPLICATION TO MUSEUMS

In this book we are exploring Kolb's theory in greater depth than the others, because it has recently been applied in several museums, especially in the Netherlands. It is therefore possible to see the implications and consequences of its employment in the planning and staging of exhibitions, interpretation materials and education programmes.

David Kolb's theory of different learning styles is outlined in his book *Experiential Learning*. The impact of his ideas has been significant in the context of liberal adult education, but remains less well known in museum education. His relatively simple proposition is that not everyone learns in the same way. He suggests that everyone has a preferred learning style, or sometimes a combination of more than one learning style, out of a possible total of four. An individual's preferred learning style determines how he or she goes about the learning process. Kolb's ideas seem to relate well to what happens in museums, in that visitors demonstrate different ways of approaching exhibitions because they have different preferred learning styles. Very often they do not approach the exhibition in the way in which it was conceived or designed. Therefore, in order to create the best possible opportunity for learning to take place, it would seem important that the staging of exhibitions and presentations in museums should offer ingredients that connect to each kind of learning style.

According to Kolb, learning is a social process. It is not simply a matter of digesting information through the receipt of instruction, but is related to what individuals bring with them to the learning situation from their own lived experiences and their ways of responding to new information and new situations. In the context of museums this means that what matters is not simply the knowledge which learners acquire as a consequence of their visit, but also the ways in which they experience and learn during their visit.

The learning process has two dimensions: **apprehension** / **comprehension** and **extension** / **intention**. The first dimension defines the way in which a person grasps an experience; the second the way in which a person internalises the experience. Together these two dimensions result in a learning process that is characterised by four different ways of learning. These are: **concrete experience, reflective observation, abstract conceptualisation** and **active experimentation.**

Dreamer: What is the use of this mouse? The visitor is asked to answer this question by using his own imagination. To make an exhibition attractive for a Dreamer, think about the following key words: feeling, personal, creativity, different points of view, poetical, imagination, colour and texture, subjectivity.

Photo: Ivar Pel, University Museum,Utrecht

Deliberator: Here the objects are related to the historical context of the University and the development of Science. This stimulates the visitor to analyze the (chrono)logical relationships of the objects. A Deliberator must be intellectually challenged. Think about the following key words: facts and notions, theory, logical relationship, "the expert is talking", conceptual, background information and beauty, logic and precision.

Photo: Ivar Pel, University Museum, Utrecht

The four ways of learning are related to four different preferred learning styles:

- Concrete experience in combination with reflective observation results in the divergent learning style of people who are **dreamers.**
- Reflective observation in combination with abstract conceptualisation results in the assimilative learning style of people who are **deliberators.**
- Abstract conceptualisation in combination with active experimentation results in the convergent learning style of people who are **deciders.**
- Active experimentation in combination with concrete experience results in the accommodative learning style of people who are **doers.**

Dreamers tend to make use of concrete experience and reflective observation. Their greatest strength lies in their imaginative ability and their awareness of meaning and values. They are able to view concrete situations from many perspectives. The emphasis is on deriving understanding through observation rather than action. Dreamers often perform best in situations that call for the generation of ideas and multiple possibilities, such as 'brainstorming' sessions. Dreamers tend to be interested in people and to be imaginative and in touch with their feelings.

Deliberators tend to make use of abstract conceptualisation and reflective observation. Their greatest strength lies in their ability to assimilate lots of information, to subject the information to reason and analysis, and to arrive at coherent understandings. Deliberators are less focused on people and more concerned with ideas and abstract concepts. Ideas are judged less by their practical value and more by whether they are logically sound and precise.

Deciders tend to make use of abstract conceptualisation and active experimentation. Their greatest strength lies in their ability to get involved in problem solving, decision-making and the practical application of ideas. Deciders often do best in contexts where there is a single correct answer to be found or a solution to a question or problem. In this learning style, knowledge is applied to solving specific problems. Deciders tend to be less emotional as learners. They prefer dealing with technical tasks and problems rather than social and interpersonal issues.

Doers tend to make use of concrete experience and active experimentation. Their greatest strength lies in doing things, in carrying out plans and tasks and getting involved in new experiences. Doers often perform best when there are interesting opportunities, risks and some kind of action to be had. This learning style is best suited for those situations where it is necessary to adapt quickly to changing circumstances. If the theory doesn't fit the plan, doers find it easy to change tack. Problem solving becomes more of an intuitive, trial-and-error process, and relies heavily on other people for information, rather than on their own analytic ability. Doers are usually quite at ease with other people but can be seen as impatient and pushy in a learning situation.

Decider: Put the embryo slides in the right order. The visitor is able to try out theory in practice. For a Decider the exhibition must be: functional, efficient, valid and applicable, using schemes and models, trying out theories, having accompanying materials, rational and practical, technical and problem solving.

Photo: Ivar Pel, University Museum, Utrecht

Doer: Jump on this pneumatic pump to find out the force of air. The visitor is actively involved in a way that you can experience by doing. For the Doer an exhibition is about: new experiences, involvement, excitement and variety, competition and risk taking; it must be short and to the point, spectacular, presenting real-life cases and intuitive.

Photo: Ivar Pel, University Museum, Utrecht

KOLB'S LEARNING STYLES IN ACTION IN THE NETHERLANDS

The Kolb project promoted in the Netherlands by the Netherlands Museums Association began by asking what would make an exhibition attractive to those with different learning styles and then translating the characteristics of each style into a checklist that could be used in a museum situation. Each checklist focused on the three key aspects of every exhibition or presentation: content and information, attitude and atmosphere, and design.

The pilot projects led to creative and interesting exhibitions and much discussion about the nature and purpose of learning. But they did meet with some reluctance from members of the project teams. Most educators welcomed the theoretical strengthening of their position and enjoyed inventing approaches and writing texts geared to the different learning styles of visitors. Some designers experienced the learning style theory as a limitation on their creativity. Curators on the whole preferred to stick to their own learning style – mostly that of dreamers or deliberators.

Developing a more rounded approach, one that takes into account the learning diversity of potential visitors, needs time and commitment from the staff involved. But the creation of imaginative approaches to interesting exhibitions, based on the recognition of different learning styles, does go some way to persuading more sceptical colleagues about the value of the approach. If you think there is merit in staging exhibitions that offer learning opportunities for different kinds of learners, the application of Kolb's theories to the organisation of learning may well be worth developing.

Guidelines for applying Kolb's learning theory to exhibition planning:

- Introduce the theory to the full project team, giving case study examples of its success and providing further sources of information. Decide to use it from the very beginning of the new project.
- Encourage all members of the project team to take the Learning Style Test. Use the outcome to decide whether the composition of the team is sufficiently balanced in terms of preferred learning styles. You may need to add others with different learning styles into the team.
- Include someone in the team who is charged with representing the interest of learners, as an audience advocate. The advocate's role is to represent the opinions and voice of the audience and also to make sure that the learning style theory is implemented throughout the project. An audience advocate should be well informed about learning theories in general, the learning style theory in particular, and also with visitor research evidence, both in museums and elsewhere.
- Make sure that provision for each of the four preferred learning styles is built into the design and ground plan of the exhibition. However be aware that an exhibition based on Kolb's learning theory may require additional resources.

To check out the checklist go to www.museumvereniging.nl, "International relations", "Life Long Museum Learning"

For more information about Kolb's learning Style Test and to complete the test online go to www.hayresourcesdirect.haygroup.com

2.4 Identifying learning outcomes

Learning outcomes can be defined as the results of a learning experience. They can apply both to individuals and groups, and may be short-term or long-term. They are generally regarded (in the more formal education sector, at least) as the result of a programme of specific study, and involve judgements being made about individual learner's progress. But learning is a dynamic experience and can be hard to pin down. Some of the most interesting learning outcomes are often those which were not planned or anticipated but which arise in the process of learning and social interaction.

Just as it is quite difficult to apply learning style tests to visitors, so too is it difficult for museums to set specific learning outcomes for learners to achieve. And, given the informality of museum education and the diversity of learning styles, it is not surprising that it is often difficult to measure what has actually been learned. In most cases museums have very little information about the prior knowledge of their visitors. Learning outcomes may often be those described as 'soft' changes in attitudes, values, emotions and beliefs. For those who want 'hard' evidence of demonstrable skills and increased levels of knowledge and understanding, evaluation needs to be carried out or assessment criteria applied.

Compared with formal educational institutions, museums have more difficulties in making judgements about how much their visitors have learned, or how much progress they have made. Useful guidelines and frameworks have been devised for assessing learning, including *Partnerships for Learning: a guide to evaluating arts education projects,* by Felicity Woolf (1999 Arts Council England) and the *Inspiring Learning for All* framework, described below. We should not forget, however, that learners themselves are perfectly capable of making judgements about their own learning. Collecting evidence of learning outcomes in museums, therefore, should be concerned with asking learners about their experience and about what they have learned. We shall look at some ways of doing this in section 3.

In an attempt to describe and then record the impact of all the different types of learning experiences that take place in a museum, the UK Museums Libraries and Archives Council has developed a set of learning outcomes, which should cover all the learning that happens during museum visits. According to this research, what people learn in museums can be categorised within one of five headings:

- **Knowledge and Understanding**
- **Skills**
- **Attitudes and Values**
- **Enjoyment, Inspiration and Creativity**
- **Activity, Behaviour and Progression**

These are called **generic learning outcomes (GLOs),** and can be used both to identify the expected learning outcomes of an educational activity, therefore establishing the ensuing research questions, and to provide the evaluation framework for analysing visitors' responses.

But GLOs only capture people's perceptions of learning. They do not "prove" that that learning has taken place. To do this would mean

testing people to see if they really have acquired the knowledge or skills they say they have acquired and museums are never going to be in the business of setting exams to see what their visitors have "learnt", therefore the information available is always going to be highly subjective. However, what people think they have learnt from a museum visit, and what their teachers or parents or group leaders observe about the changes which have taken place as a result of that visit, when collected carefully, analysed systematically, and reported accurately, do enable us to make important observations about the power museums have to inspire and support learning.

Here are some of the most common indicators to aim for when assessing the impact of learning in museum and galleries:

- **Increased knowledge of specific subjects**
- **Enhanced understanding of specific ideas and concepts**
- **Improved technical and other skills**
- **A change in attitudes or values**
- **Evidence of enjoyment, inspiration and creativity**
- **Evidence of activity, behaviour, progression**
- **Social interaction and communication**
- **Increased self-confidence**
- **Personal development**
- **Community empowerment**
- **The development of identity**
- **Improved health and well-being**

www.inspiringlearningforall.gov.uk

(over page) Isolation Cell

Photo: Het Dolhuys Museum, Haarlem

Jean Brady mediating "Come to the edge..."

Photo: Irish Museum of Modern Art, Dublin