The role of assessment in the design process

Anika Grobler
Department of Architectural Technology and Interior Design
Faculty of Arts
Nelson Mandela Metropolitan University
PO Box 77000
PORT ELIZABETH
6031
E-mail: anika.grobler@nmmu.ac.za

Introduction

The six phases of a design project:
1. enthusiasm
2. disillusionment
3. panic
4. search for the guilty
5. punishment for the innocent
6. praise for the non-participants

Notice on the wall of the Greater London Council of Architects' Department (Lawson 2006:31).

Assessment in education is often seen as only the grading or final evaluation of a completed task performed by the student. Assessment and feedback opportunities can easily be overlooked as design and process are inseparable. How can it be monitored other than with assessment? This paper aims to outline the importance of integration between assessment and the design process, as assessment has various possibilities and varieties, just as the design process consists of a complex sequence of investigations. It is difficult to separate the two. The paper will firstly outline each and then illustrate the integration with the use of examples of Interior Design student work that is supplemented with a survey of students in the School of Architecture at the Nelson Mandela Metropolitan University, Port Elizabeth. The survey was conducted in the form of an anonymous questionnaire with structured questions that allowed for commentary. It included 40 junior and 40 senior students.

This paper expresses the approach of disciplines within the built environment that includes Interior Design, Architecture and Architectural Technology, but will illustrate general strategies which are central to all design disciplines.

Assessment

Assessment and evaluation are used as synonyms in educational literature. Trochim (2005:1-3) and Ashcroft and Palacio (1996:93) discuss aspects of evaluation, and Dun, Morgan, O'Reilly and Parry (2004:18-19), Swearingen (2002:1-4) and Knight (1995:13) explain assessment strategies. Assessment, evaluation, and appraisal are estimating the quality or value of a task.

The purpose of assessment
What is the purpose of assessment? In education it is the measuring of performance and development of the student over time, the mastering of skills and knowledge, as well as motivation that is achieved from this developmental process (Dunn et al 2004:16). Additional questions are: what is assessed, who is involved; where, how and when does it take place?

Types of assessment
Nan (2003:1) quotes Robert Stakes, professor of Education at the University of Illinois, using a descriptive analogy in order to illustrate the types of assessment: "When the cook tastes the soup, that's formative; when the guests taste the soup, that's summative".

Dunn et al (2004:18) argue that formative assessment gives the student a chance to improve on the same task and that feedback will be provided, enabling development. Students are also able to "… identify their strengths and weaknesses in terms of current knowledge and skills." Formative assessment is process related, as it is conducted during the course of a task. However, it does not include the grading of the task (CMU Assessment Toolkit 2006:1). It encourages participation, interaction and as a result, feedback is obtained. Trochim (2005:1-3) explains that for an evaluation culture, action, inclusive participation, responsiveness and self-criticality are important. Swearingen (2002:3) stresses the importance of self reflection in this process. Evaluation then allows for the student and the lecturer to monitor the development and understanding of the task at hand. Lecturers, students and peers can all be included, as this provides opportunities for learning, participation and active engagement. The student survey revealed that the majority of students value group discussions on the design work produced. Words that

were used are, input, new ideas, fresh, never ends, are all involved, the learning is enhanced and continuous. One student said the following: "If I produce a design and get feedback on my response, I've learnt one lesson about one response. If I'm involved in the critique of every project in the class, I've learnt 35 lessons about 35 responses. Plus I get to voice my own critical thinking, which is what needs to be strengthened in becoming a good designer."

Evaluation by the lecturer is commonly found throughout, for the progress and end result needs to be recorded and documented in order to manage the evaluation and to determine the development that takes place, and also the lack of engagement shown by the student (Ashcroft and Palacio 1996:86-87).

The studio scenario of design education facilitates formative assessment continuously during design discussions and crits and when conducted as stated, valuable feedback is imparted. Assessment in design is an ongoing activity. Informally, this allows for discussions, active engagement and feedback of students with each other and with lecturers. Formally, it provides for the presentation and the grading of projects on completion. Students have to take the responsibility to interact, as a lack thereof will reflect in the work that is produced.

Summative assessment results in the grading, once a mark or percentage is awarded for a completed task. It also measures the totality of the performance (Dunn et al 2004:18, 19). Summative assessment is comprehensive and reveals the cumulative learning that has taken place (CMU assessment toolkit 2006:1). With evaluation, formative feeds into the summative assessment outcome and when the developmental phase has been managed, the summative outcome should reflect that. Students see this as the moment when success of a project is estimated. Design intentions can be explained to a group of people, to see whether the design idea is understood and also to learn from mistakes for future projects.

The advantage of self and peer assessment is that learning is enhanced and feedback is reflected that requires students to take responsibility for evaluating themselves and others. Boud (1995:16-17) argues that self assessment combined with a lecturer evaluation includes both parties to take responsibility for the learning. For the student it promotes a good concept (esteem, image) with a positive outlook and better self-knowledge. The hopeful outcome, as a consequence, is more accountability for the studies. It is observed that self and peer assessment is generally reliable, useful and valid (Knight 1995:160). It was shown that students are cognisant of the responsibility during the process. However, not every step is evaluated, but the awareness exists that all has to be accounted for in the end. But it was also revealed, that formative assessments are not always seen as an evaluation, as feedback can get vague or be misinterpreted. Students are remarkably accurate with the observations and understanding of evaluation. The studio scenario is beneficial for interaction, and that is where all types of assessment take place.

Design process

Lawson (2006:53) quotes in *How designers think: the design process demystified*, the following from Anton Chekhoo's *The Lady with the Dog*: "It seemed that the next minute they would discover a solution, yet it was clear to both of them that the end was still far, far off, and that the hardest and most complicated part was only just beginning."   Does this not accurately describe the process of design? Process can be described as "a series of actions, operations or decisions leading to a solution, end, or final product" (Faimon & Weigand 2004:168).

Every design discipline has an inherent difficulty in the complexity of the problem to be solved, whether it is the design of a chair, an interior, a building, or a landscape. It can not be said that any one of these is more complex than the other (Lawson 2006:54).

Within the built environment, the development is often not revealed. This process can be a struggle, as many external influences and structural and contextual parameters need to be considered, regardless of the specific design brief. Student responsibility in preparing for a future profession cannot be built on easy recipes, but should be guided through the developmental phase of the discovery of process, skill and knowledge.   Responses in the survey revealed that students feel that the individual processes are not always understood by the lecturer. It is an opportunity for students to continually revisit aspects over and

over again, to re-evaluate. The process followed by the student should not be prescriptive or repetitive. It should be left for the student to explore the development of an individual style and sequence of steps, but still be guided by the lecturer. The challenge lies with the student to take responsibility to initiate ideas and take the project to final detail resolution. It is often seen that design students misjudge the complexity of projects and do not realise the difficulty hidden in the detail. Adequate time is not set aside for the successful completion of the task, as students are optimistic about the accurate execution within the timeframe allowed. Presentations then fail to communicate adequate detail and the resolution remains superficial (Lawson 2006:55), even though the initial idea might have been brilliantly innovative. Students indicated in the survey that projects often remain incomplete at the final presentation, due to the lack of time management.

Responsibility
Within the built environment, the decision-maker carries the responsibility towards future clients, society, the profession and themselves, as people's lives and well-being are influenced. Decisions made in relation to selection of materials and finishes, construction and detail, as well as the lighting, layout and organisation could either add value or detract from the spatial experience. Students are expected to have the understanding and knowledge of theoretical subjects to skilfully implement that knowledge in design projects as part of the studio based learning.

For students studying disciplines in the built environment the reality is that people will be affected directly by the decisions that are made in the process. Students agreed that spaces are designed for people to occupy, so the message that is communicated needs to be correct in order to receive the intended perception. Spatial experience involves the senses of vision and touch. This is enhanced with the perception of a space as it is revealed in fragments or views as one moves through (Hill 1999:61). Spaces are enriched when the senses are involved and activated; another way of creating meaning, besides functional, financial and construction requirements.

A list of potential implications of inappropriate or unsuitable decisions can be identified: physical injury, health and safety concerns, culturally inappropriate solutions, psychologically negative, an unpleasant atmosphere or sense of place, maintenance, structural failure, material deterioration, cost and financial implications, inaccessibility and failure to adapt to change. These implications have consequences. Consequences that could cost money and lives, and someone will be held responsible. Spaces for human habitation define who a person is, how that person lives and create meaning. Decision-making is important, as any decision will have a direct or indirect consequence.

So, how are decisions made? Before this question can be answered, the requirements for a design brief and assessment criteria must be discussed.

Design brief
There can be no process without a design brief or assessment criteria. Swearingen (2002:2) adds that assessment needs to reflect outcomes and experiences related to the process. When the learning opportunity has been understood as integrated and multidimensional, it has served its purpose. Outcomes and learning opportunities are reflected and communicated in the project brief; these serve as guidelines for the student during the design phase. It outlines the design problem and describes the parameters and requirements for which students need to develop a response, while meeting the pre-requisites. In addition, the brief stipulates firstly the location (site, space and context), function(s), client, budget and further parameters that could be used as an advantage and interpreted as design opportunities.

A typical brief should communicate pertinent information to the student. This is an example of an Interior Design project:

1. Function: For example, retail design – a hair salon: specific requirements and degree of interpretation allowed.
   - This can include the need to create a brand strategy or identity for the specific function.
   - This then allows for the student to select the target market to which the identity is directed.

2. Context or location – for Interior Design, the specific space needs to be provided.
   - If it is an existing space, the drawings should be obtained, or the building must be measured and documented.
3. Accommodation list: this points out all the functional areas in the space and could be prescribed or left open for the student's interpretation.
4. Design requirements:
   - layout and organisation, proximities,
   - spatial manipulation,
   - lighting and detail design.
5. Presentation requirements:
   - Design development and process: models and drawings,
   - Sketch drawings: plans, elevations, sections,
   - Perspectives of pertinent areas,
   - Detail design drawings: counters, ceilings, components,
   - Model,
   - Technical drawings,
   - Theoretical document: communicating brand strategy and precedent studies.
6. Assessment criteria: aspects of importance for evaluation.
7. Programme: outlines the deadlines for the various stages in the process.
8. References or required reading.

Dunn et al (1996:246) argue the effective use of a rationale that explains the aims of a task. Ashcroft and Palacio (1996:61) point out the information that needs to be communicated are the aims and objectives and learning outcomes, as well as the required competencies that must be acquired. It is critical that students are informed at the outset of the task, so that the expectations are clear. Students use the brief criteria as a reference or check list in the process in order to ensure the right direction is followed. The aims and objectives need to match the assessment criteria (Ashcroft & Palacio 196:61). Briefing is a continuous process that in design education has open-ended problems that are left for the interpretation of the student. The criteria in the brief need to clearly set out the specifics, so no incorrect assumptions are made by the student (Lawson 2006:297). When a brief is not too prescriptive, the student can investigate an aspect that intrigues, or allow for interpretation that will facilitate the individual design language, style and philosophy.

Additional influences within the built environment can be listed as materials and finishes, construction and detailing, target market, socio-economic aspects, aesthetics, ergonomics, functionality, feasibility, orientation, and legislation and regulations. The scope of design becomes complex and is interrelated to various other professions. Lawson (2006:58) uses the term multi-dimensional approach.

Assessment criteria
The learning process is enhanced by the assessment criteria, as the assessor; albeit the student, peers or the lecturer have a set of guidelines in order to evaluate a stage in the process, or a completed task.

Assessment criteria provided in the brief, need to reflect all the learning areas. The example of the hair salon is referred to here:
1. Design process and concept,
2. Brand strategy and interior identity,
3. Spatial manipulation and quality,
4. Design process (models and drawings),
5. Design presentation drawings,
6. Detail design,
7. Model building,
8. Theoretical document,
9. Verbal presentation.

This illustrates the possibility of reflecting the brief requirements in the assessment criteria. Students are given guidelines during the course of the project, and it illustrates at the outset what will be expected at the end, when the grading takes place. Feedback should then also be directed at these criteria.

Does the solution answer the criteria, and if so, to what level of understanding and skill? When the outcomes and assessment criteria align, the learning opportunity is acceptable (Ashcroft & Palacio 1996:61).

"Appropriate learning outcomes are able to be operationalized and measured" This allows for valid student-centred evaluations (Dunn et al 2004:215). Herewith, the content and direction of the learning process is assessed. When the evidence indicates that a task has been met, a positive value judgement can be made. This is essential, in particular for design education to have these guidelines, as perception on what is good or not, is a subjective matter. Therefore criteria are of the utmost importance to make assessments without bias. Various methods of assessment, self, peer, lecturer and external moderators should be involved to pinpoint the standard of work as reliable and transparent, especially with summative assessments. The variables in student interpretation cannot be measured on the same scale. Students agreed, as a wider audience will give a broad and honest opinion that not only reflect the evaluation by the lecturer. This then enables the student to engage with the design, from initial idea, development, to final product of the process.

Stages in the design process
Various sources point out a particular sequence of events that illustrates the common steps that are advised in the process of design. Kilmer & Kilmer (1992:156) argue that analysis and synthesis are the basic steps to take, which are supplemented with feedback. It can further be extended into a wider scope, by adding intermediate steps that follow into another sequentially, and provides continuous feedback between the stages: commit, state, collect, analyse and then ideate, choose, implement, evaluate. This can also be illustrated as a cycle or a spiral where feedback remains central to the model.

"No specific design process will solve every problem or be useful to every designer" (Kilmer & Kilmer 1992:157). The sequence of investigations is meant to be used and interpreted according to the designer and the individual's methodology. Lawson (2006:38) illustrates a generalised map of the design process: analysis, synthesis and evaluation, also with feedback between the stages. The model by academics Markus and Maver develops this map in more detail. Analysis, synthesis, evaluation and feedback are conducted over three stages in the design process that includes the conceptual proposal (outline), the spatial scheme design and detail design. This division of stages allows for in depth understanding and exploration in the design project. This shows the process in design education in the built environment (Marcus and Maver, cited in Lawson 2006:36-37). During the project, formative assessment takes place and at the end, summative.

The design process only becomes visible when pen is put to paper and ideas are drawn, or three-dimensional models built, as these are investigatory tools and without it, the design process cannot take place (Brawne 2003:83). It is important in order to communicate ideas, as design in the built environment is a non-verbal language. The representation of a space prior to its construction (Brawne 2003:151) should communicate clearly even without the student being present to explain. The design process requires various types of spatial investigations: plan (layout), elevations and sections to resolve three-dimensional aspects and perspectives to represent the atmosphere of the space, as well as detailed investigations regarding connections and material specifications.

The aim of the process is to encourage the exploration of alternatives. The generation of many ideas may provide a better understanding of the problem and in turn, ensure a competent response, as various options were considered. Confidence grows, as the student is able to justify the decisions. It is then possible to eliminate unworkable ideas and synthesising the remainder to the most suitable solution (Lawson 2006:209). One student shared the following: "I haven't failed; I just found 1000 ways that do not work."

Models and drawings can be used to represent design ideas and to investigate alternatives (Lawson 2006:293). The advantage is that multiple representations can be viewed and discussions can take place in the form of formative assessment. Ching (1990:5) explains that drawing needs to be linked to thinking and seeing the essence of the subject matter to be represented. It can be argued that every step of the process of design should be well-worked through in terms of this understanding. With this approach, new possibilities can be explored as part of an analysis and then synthesised into a design solution.

The design process is aided by creativity. Lawson (2006:149) describes a five stage model of the creative process:
1. First insight: the formulation of a design problem,
2. Preparation: a conscious attempt at finding a solution,
3. Incubation: no conscious effort is taken in the process,
4. Illumination: the sudden emergence of ideas or an idea,
5. Verification: the conscious development of the ideas generated.

The creativity process describes the process that students shared in the survey. Firstly, the understanding of the problem and analysis into the components take place, secondly, preparation that consists of finding inspiration and looking at precedents that could inform the design. Thirdly, the doodling and contemplation of the design, where impressions are digested; fourthly, the emergence of an idea(s), more than often the culmination of many alternatives investigated. And lastly the conscious development of these ideas constructively, with the understanding of the research that has come before. This is then carried out for all the requirements in the brief, from conceptual development, to detail design and the specification of materials.

This then feeds into the design process, especially when the development takes place. Design problems are initially defined by the project brief, but in reality, the process reveals far more challenging opportunities of which creative solutions can be found. The concept, material choices or interpretation of the brief, to name a few, could be informative to the development. "…design is as much a matter of finding problems as it is of solving them…design problems and design solutions are inexorably interdependent. It is obviously meaningless to study solutions without reference to problems and the reverse is equally fruitless" (Lawson 2006:117-118).

A commonly asked question in the process of design is: when to stop? Lawson (2006:55) supports this by asking: "How, then, do we find the end of a design problem?" It is up to the designer to determine when the problem has been solved. "Appraisal involves the critical evaluation of suggested solutions against the objectives identified in the analysis phase" (Lawson 2006:37). The truth of the matter is, often in education (and also in practice) designers run out of time, or the design has been pursued enough. Students agree: "…process repeats into infinity until the deadlines are reached…" and in contrast "…from conception, to final product, exploration and criticism lead to a chosen compromise." Often students misunderstand feedback and that may lead to problems in other areas of a design. The skill is to know when to stop. Only experience can teach this. It is only towards the end of resolving a problem that the amount of work still needs to be done becomes clear. In education, that is often too late for the student to adequately complete that task according to all the assessment criteria (Lawson 2006:55).

Integration of assessment and the design process
As a result of the information discussed, it can be said that the stages of the design process and the categories of assessment could be grouped together. Formative assessment is directly related to the design process, development and investigation of alternatives and summative assessment that is applied at the final presentation and judging of work that is graded.

The link between assessment and learning is emphasised, with design education providing the basis for students to develop professional expertise by teaching the ability to reflect (Dunn et al 2006:9, 189). This can only be achieved with formative assessment in the studio environment where students are required to evaluate themselves and fellow students. That is a form of reflection. "…'reflection-in-action' and

'reflection-on-action' are forms of learning by doing and reflecting on the process and consequences…" (Schon, cited in Dunn et al 2004:189).

Lifelong learning development is henceforth encouraged. Learning opportunities in education should facilitate self assessment and reflection to develop the autonomy of the student while studying, as well as in preparation for the industry (Knight 1995:46-47). Dunn et al (2004:186) support the idea of lifelong learning, as an essential quality of graduating students. "The ability to think critically and to arrive at sound judgements is a key outcome of any university education…in the working world, the most consistent valued asset of an organisation is the capacity of individuals to use their critical and creative thinking abilities to improve collective performance" (Dunn et al 2004:157). Graduates need to be able to make a positive contribution.

Paul (cited in Dunn et al 2004:157) defines critical thinking "as a unique kind of purposeful thinking in which the thinker systematically and habitually imposes criteria and intellectual standards upon the thinking." It can therefore be argued that critical thinking can be an outcome of the design process. Every stage has to be considered and assessed according to the criteria and relevance. Students need to develop this skill, and if the studio scenario can facilitate it, the students are so much more prepared for the industry.

Summary
Various aspects have been addressed. At this point the essence can be summarised. Firstly, no valid assessment can be made if assessment criteria have not been provided in the project brief. Without these guidelines, the student is left in the dark and only uses perception and assumptions that are not accurate in the translation of the project. The student also questions evaluations when assessment criteria are not co-ordinated with the aims and outcomes related to the brief. If this is the case, the validity of the assessment is compromised.

Secondly, investigate the use of alternative methods of assessment. For design education, where time and space are luxuries in the design studios, formative assessment is a useful tool with the inclusion of self and peer assessment. Students are attuned to standards and when put in an environment, will eventually participate.

Thirdly, the lecturer should create a nurturing, positive and encouraging atmosphere. Therefore, students need to be made accustomed to the hard criticism in a gradual manner. It is essential however to have constructive criticism and motivation, that strengthens the student's confidence.

Fourthly, feedback should reflect the criteria for the task. When this is communicated with honesty and fairness, the result will hopefully be a motivated, inspired and confident student. Students studying design disciplines need to feel valued and that the individual is important. Design is subjective, and for that reason, the student's own language and interpretation need to be developed and challenged and not that of the lecturer. The lecturer remains the facilitator, the catalyst for progress.

Lastly, responsibility must be expected of students in design disciplines. This is not only for the successful completion of studies to obtain a qualification, but also encourages engagement, reliability, competence, conscientiousness, dependability, level headedness, efficiency, reliability, uprightness: all qualities that the industry so desperately requires.

Conclusion
In closing, the importance of an evaluation culture must be stressed. It is by assessing informally and formally not only within the realm of education, but also in our daily dealings and interactions with people and places, environments and perceptions, that we are enriched. By these observations and learning opportunities, can designers make informed decisions that will touch the lives of people, and hopefully add meaning and value to lives! So, whenever there is an opportunity: taste the soup!

References

Achcroft, K. & Palacio, D. 1996. *Researching into assessment and evaluation in colleges and universities*. London: Kogan Page.

Boud, D. 1995. *Enhancing learning through self assessment*. London: Kogan Page.

Brawne, M. 2003. *Architectural thought: design process and the expectant eye*. London: Architectural Press.

Ching, F.D.K. 1990. *Drawing: a creative process*. New York: Van Nostrand Reinhold.

CMU assessment toolkit. 2006. Central Michigan University. Internet: http://www.provost.cmich.edu/assessment/toolkit.formativesummative.htm [3 August 2006].

Dunn, L, Morgan, C, O'Reilly, M. & Parry, S. 2004. *The Student handbook: new directions in traditional and online assessment*. London: Routledge Falmer.

Faimon, P. & Weigand, J. 2004. *The Nature of design: how design principles of design shape our world – from graphics and architecture to interiors and products.* Cincinnati: HOW Books.

Hill, R. 1999. *Designs and their consequences*. London: Yale University Press.

Kilmer, R. & Kilmer, W. O. 1992. *Designing interiors*. Fort Worth: Harcourt Brace Jovanovich College Publishers.

Knight, P. (ed). 1995. *Assessment for learning in higher education*. London: Koga Page.

Lawson, B. 2006. *How designers think: the design process demystified*. 4th ed. Oxford: Architectural Press.

Nan, S.A. 2003. Formative evaluation. Internet: http://www.beyondintractability.org/action/essay.jsp?ed=31184&nia=1269 [28 August 2006].

Swearingen, R. 2002. A primer: diagnostic, formative and summative assessment (Heritage University). Internet: http://www.mmrwsjr.com/assessment.htm [15 August 2006].

Trochim, M. K. 2005. Introduction to evaluation. Internet: http://www.socialresearchmethods.net/kb/evalcult.htm [3 August 2006].

The role of assessment in the design process

Anika Grobler

Department of Architectural Technology and Interior Design
Nelson Mandela Metropolitan University
Port Elizabeth
South Africa

Six phases of a design project

1. enthusiasm
2. disillusionment
3. panic
4. search for the guilty
5. punishment for the innocent
6. praise for the non-participants

Notice on the wall of the Greater London Council of Architects' Department (Lawson 2006:31)

Anika Grobler DEFSA 2006

Purpose of assessment

- Measuring of performance
- Development over time
- Mastering of skills
- Motivation

Anika Grobler DEFSA 2006

Types of assessment

"When the cook tastes the soup, that's formative; when the guests taste the soup, that's summative"
Robert Stakes

Anika Grobler DEFSA 2006

1

Formative assessment

- Improvement
- Feedback
- Development
- Identify strengths and weaknesses
- Progress related
- During the task
- No grading
- Participation
- Interaction

Anika Grobler DEFSA 2006

Evaluation culture

- Action
- Inclusive participation
- Responsiveness
- Self-criticality
- Reflection

Anika Grobler DEFSA 2006

"If I produce a design and get feedback on my response, I've learnt one lesson about one response.

If I'm involved in the critique of every project in the class, I've learnt 35 lessons about 35 responses.

Plus I get to voice my own critical thinking, which is what needs to be strengthened in becoming a good designer."

Anika Grobler DEFSA 2006

Evaluation process

- Recording
- Documentation
- Management
- Development
- Engagement

Anika Grobler DEFSA 2006

Studio scenario: formative assessment

- Continuous assessment
- Discussions and crits
- Feedback
- Ongoing activity
- Active engagement
- Students and lecturers
- Responsibility to interact

Anika Grobler DEFSA 2006

Summative assessment

- Grading for completed task
- Measures totality of performance
- Comprehensive
- Cumulative learning
- Success of project
- Understanding
- Design presentation

Anika Grobler DEFSA 2006

Self and peer assessment

- Enhanced learning
- Feedback
- Responsibility for evaluations
- Good esteem and image
- Self knowledge

- Reliable, useful and valid

Anika Grobler DEFSA 2006

Design process

"It seemed that the next minute they would discover a solution, yet it was clear to both of them that the end was still far, far off, and that the hardest and most complicated part was only just beginning."
The Lady with the Dog, Anton Chekhoo

Anika Grobler DEFSA 2006

3

Design process

"…a series of actions, operations or decisions
leading to a solution, end, or final product.."
(Faimon & Weigand 2004:168)

Anika Grobler DEFSA 2006

Student process

- Guidance
- Discovery
- Skills and knowledge
- Individual processes
- Re-evaluate
- Not prescriptive and repetitive
- Completion
- Time management

Anika Grobler DEFSA 2006

Responsibility

- Future clients
- Society
- Profession
- Self

- Influence lives of people
- Spatial experience

Anika Grobler DEFSA 2006

Responsibility in the built environment

- Correct message communicate
- Perception
- Spatial experience
- Involvement of senses: vision and touch
- Movement through space

- Enrichment
- Creating meaning
- Functional, financial, construction requirements

Anika Grobler DEFSA 2006

4

Implications

- Physical injury
- Health and safety concerns
- Culturally inappropriate solutions
- Psychologically negative
- Unpleasant atmosphere
- Maintenance
- Structural failure
- Material deterioration
- Cost and financial implications
- Inaccessibility
- Failure to adapt to change

Design brief

- Integrated learning
- Multi-dimensional

- Outcomes
- Learning opportunity
- Requirements
- Parameters and guidelines

Example: Interior Design

- Function: Retail – Hair Salon
  - Strong identity
- Context or location (space)
- Accommodation list
- Design requirements
  - Layout and organization
  - Spatial manipulation
  - Lighting
  - Detail design

Example: Interior Design
Retail design: Hair Salon

- Presentation requirements
  - Design development and process: models and drawings
  - Sketch drawings: plans, elevations, sections
  - Perspectives
  - Detail design drawings
  - Model
  - Technical drawings
  - Theoretical document: brand strategy, precedent studies

Example: Interior Design
Retail design: Hair Salon

- Assessment criteria: aspects of importance for evaluation
- Programme: outline of deadlines for stages to be evaluated
- References or required reading

Brief outline

- Aim of the task
- Information
- Rationale
- Aims and objectives
- Learning outcomes
- Checklist or reference
- Expectations
- Assessment criteria to reflect aims and objectives

Additional influences in the built environment

- Materials and finishes
- Construction and detailing
- Target market
- Socio-economic aspects
- Aesthetics
- Ergonomics
- Functionality
- Feasibility
- Orientation
- Legislation and regulations

Assessment criteria
Example of Retail Design: Hair Salon

- Design process (models and drawings)
- Identity development and concept
- Spatial manipulation and interior quality
- Design presentation drawings
- Detail design
- Model building
- Theoretical document
- Verbal presentation

Does the solution answer the criteria, and if so, to
what level of understanding and skill?

When the outcomes and assessment criteria align,
the learning opportunity is acceptable.
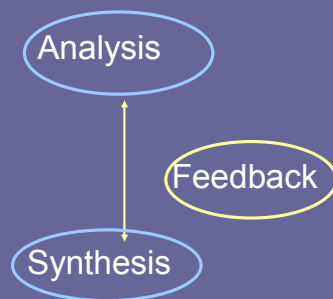(Ashcroft & Palacio 1996:61)

Anika Grobler DEFSA 2006

Valid evaluations

- Measurable
- Student centered evaluations
- Positive value judgements
- Criteria as guidelines
- Reliability and transparency
- Standard

- Value judgements

Anika Grobler DEFSA 2006

Stages in the design process

Analysis

Feedback

Synthesis

(Kilmer & Kilmer 1992:156)

Anika Grobler DEFSA 2006

Intermediate steps in the process

Commit
State
Collect
Analyse
Ideate   Feedback
Choose
Implement
Evaluate

(Kilmer & Kilmer 1992:156)

Anika Grobler DEFSA 2006

7

Slide 1 — Generalised map of the process

Generalised map of the process

Analysis

Synthesis   Feedback

Evaluation
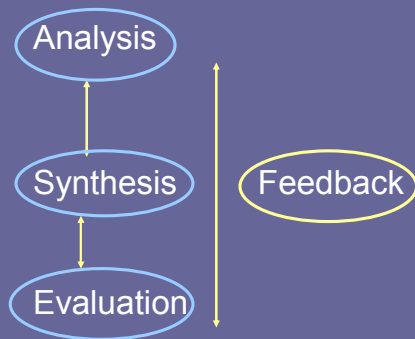
(Lawson 2006:38)

Anika Grobler DEFSA 2006

Slide 2 — Academic model

Academic model

Conceptual proposal (outline)
analysis   synthesis   appraisal   decision

Spatial scheme
analysis   synthesis   appraisal   decision   Feedback

Detail design
analysis   synthesis   appraisal   decision

(Marcus & Maver in Lawson 2006:36-37)

Anika Grobler DEFSA 2006

Slide 3 — Drawings as an investigatory tool

Drawings as an investigatory tool

- Investigation of alternatives
- Conceptual investigations
- Design development
- Elevations and sections
- Models (3d investigations)

Anika Grobler DEFSA 2006

Slide 4 — Creative process

Creative process

- First insight: understanding of problem and analysis
- Preparation: finding inspiration to inform
- Incubation: doodling and contemplation
- Illumination: emergence of ideas
- Verification: conscious and informed development of ideas

(Lawson 2006:149)

Anika Grobler DEFSA 2006

When to stop?

"…process repeats into infinity until the deadline is reached…"
"…from conception, to final product, exploration and criticism lead to a chosen compromise…"

"Appraisal involves the critical evaluation of suggested solutions against the objectives identified in the analysis phase."

(Lawson 2006:37)

Integration of assessment and the design process

- Formative assessment: design process
  - Development
  - Investigation
  - Alternatives

Integration of assessment and the design process

- Summative assessment: final presentation
  - Judging of work
  - Grading

Design education

- Studio environment
- Professional expertise
- Reflection
  - "reflection-in-action"
  - "reflection-on-action"
    (Schön in Dun, Morgan, O'Reilley & Parry 2004:189)
- Lifelong learning
- Autonomy
- Critical thinking
- Creative thinking
- Positive contribution

Design profession

- The application of design education

- Critical thinking
"…a unique kind of purposeful thinking in which the thinker systematically and habitually imposes critical and intellectual standards upon the thinking."
(Dun et al 2004:157)

- Design process
"…critical thinking can be an outcome of the design process. Every stage has to be considered and assessed according to the criteria and relevance."
(Paul in Dun et al 2004:157)

Anika Grobler DEFSA 2006

Summary

- Assessment criteria
  – Coordinated with aims and outcomes in brief
- Alternative methods of assessment
  – Self, peer and group assessment
- Nurturing, positive and encouraging atmosphere
  – Criticism, motivation, confidence
- Feedback to reflect assessment criteria
  – Fairness and honesty
- Student responsibility
  – Studies
  – Future employment

Anika Grobler DEFSA 2006

Conclusion

Importance of an evaluation culture

Anika Grobler DEFSA 2006

Whenever there is an opportunity:
Taste the soup!

Thank you