



FLOW

Flexible Learning Objects Web

The concept



The FLOW Concept – flexible learning objects web

- a process management tool

Reading instructions

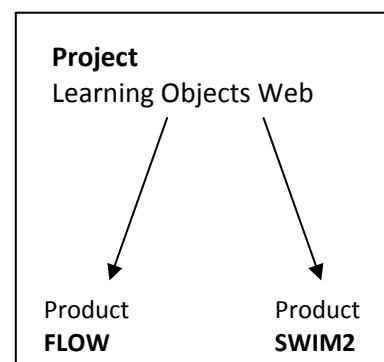
The FLOW concept description will introduce the reader to the web-application FLOW. There will be a description of the purpose of FLOW, intended scenarios for use, its theoretical foundation, its structure, and finally a description of its current content (January 2008).

FLOW is part of the larger Learning Objects Web project (working title) sponsored by Denmark's Electronic Research Library¹. The purpose of Learning Objects Web is "...*first and foremost to produce an international version of SWIM in order to reach more users. Secondly, we intend to develop a web-application that can be used by students for managing research papers and projects and integrate the information search process in a phase oriented model managed by milestones*".

(www.learningobjectsweb.dk 1 December 2005). The international version of SWIM is made, along with a separate description of the concept (see www.learningobjectsweb.dk). The international version of SWIM will be referred to as SWIM2, as there is an older, but not identical, version of the product in Danish.

This description of the FLOW concept will not only serve as information for those who may be interested in the product, but also as the point of departure for the continuing development of the programme together with staff in higher education (HE) and library environments, as well as those who take care of the technical implementation and operation of the programme.

We use the term "the student" about the primary user of FLOW, and the terms "counsellor", "teacher" and "information specialist" in HE as secondary users. By "counsellor" we mean an academic person who is assigned to a student, or group of students, to guide them in their academic work process. By "teachers" we mean employees in the students' learning environment. The term "information specialist" refers to those members of the library's staff that handle teaching and counselling in information searching.



1.0 The purpose of FLOW

The overall purpose of FLOW is to support the student's learning process and development of methodological skills in terms of problem solving, academic writing and information literacy.

FLOW is an independent and pedagogically arranged web application that offers a phase-based process management tool that can be used for:

- Managing and structuring problem solving in a paper or project.
- Documenting the working- and learning process that the student goes through during problem solving.

¹ View more information about Denmark's Electronic Research Library at www.deff.dk

- Guidance in academic writing and information searching.

FLOW is intended to be where the student is. Therefore, the product must be easy to integrate in the virtual learning environments that the students' are already using for communication and support. The application can e.g. appear as a link in learning management systems such as First Class, QuickPlace, Blackboard, or as a link on the department's homepage.

The problem solving of the individual student, or project group, will evolve around FLOW. It is the individual student or project group that creates a FLOW-project. At the same time, FLOW can be the point of departure for dialogue with both counsellor and information specialist.

The FLOW programme can be used independently, or in combination with SWIM2. Both programmes rest on the same phase structure and theoretical foundation. FLOW is an online tool. If the student can access the Internet, he/she can also access the programme.

The programme is not intended to be all-inclusive. It is intended to be an easily accessible programme that supports process management and process counselling through the student's active use of the programme. The student is encouraged to be active by setting up tasks, carry out exercises and write comments and notes based on the advice, questions and models introduced in the learning objects. Thus, we intend to secure a sense of immediate gain that the student can use in his/her work process.

2.0 A brief outline of the structure of FLOW

FLOW is structured around five different phases ranging from idea development to conclusion and perspective, with the possibility for independent process management and process counselling regarding "what is the right thing to do at this stage" in relation to academic writing and information searching. Process management occurs as the student adds tasks and deadlines in the programme in accordance with the five phases. Process counselling occurs in the form of learning objects that likewise are organised in accordance with the five phases. The learning objects will help the student progress with his/her problem solving either through inspiration, reflection or short "getting-started" exercises. The phase structure is defined horizontally as "Ideas – Explore – Focus – Research – Conclude".

In each phase the student will have the possibility for using process management and process counselling. The possibility for process management is carried out in "Tasks". Documentation of work- and learning process is carried out in "My comments" and "My process notes". Counselling regarding the problem solving process is located under "Process guides" as learning objects dealing with "My situation", "Writing" and "Information searching" respectively.

3.0 The use of FLOW

The following examples are intended to give a clearer view of how, where and when FLOW can be used. Our point of departure is the students and FLOW as an independent web-application.

Example 1: A project group from Humanistic Informatics, 2nd semester, Aalborg University.

At the department they are already using the LMS Quick Place. Here the students can get course descriptions and –material, add ideas in a project bank, get advice regarding group formation and the use

of the counsellor, read counsellor profiles with links etc. This is the students' virtual study- and learning environment.

From the department homepage, the individual student logs on to *his/her* Quick Place. The student has his/her own version of Quick Place, but can also choose to share certain functionalities that may be relevant in connection with group work e.g. correspondence between the group and their counsellor. Here you can also find a link to the independent web-application "FLOW".

The project group consists of David, Sarah, Jacob and Julia. From her Quick Place Sarah logs on to FLOW and sets up a "FLOW-project". By handing out her login to the other group members, they are granted access as well. They use the FLOW-project to manage their work process and work-sharing, and to document their process. At the same time, they get some advice and small getting-started exercises that help them progress with both writing and information searching in relation to their project.

Their project involves a field trip to research and collect data. They stay at a hostel with Internet access, and from there they log on to Quick Place and access their correspondence with their counsellor. From Quick Place they log on to their FLOW-project, where they add new tasks based on their recent research. Before they left, they had used a learning object from phase 1 "Creative idea development" regarding brainstorming for possible problems/issues. Now they enter phase 2 "Creative pre-focus exploration" and use the learning object "Pentagon" to get a general view of their problem and to structure their current knowledge in relation to their idea for a problem definition. Before they go out to grab a bite to eat, they spend some time documenting their work process using "Process notes".

The link to FLOW could also have been placed on the department homepage, or they could have accessed FLOW directly from the FLOW homepage.

Example 2: American students at Seton Hall University, New Jersey, USA.

At the Department of English they have decided on a more project-oriented study approach based on "problem-based learning". In order to support the students in this matter, it has been decided on the virtual campus that freshmen should play SWIM2 to get a sense of what project work and problem-based learning is all about. Faculty members have also decided that the students should use FLOW to structure and support their work process.

At the department homepage there is a link to FLOW, where the students can set up projects. Each student uses his/her "Process notes" for the e-portfolio that they are supposed to make alongside the project to support the dual learning process; i.e. in relation to the specific problem area *and* to working with a problem-based approach.

FLOW and the project counselor

A project counsellor can use FLOW in the process counselling of his/her students. Using "Tasks" and "Process notes", the project counsellor has a point of departure for discussing the choices and considerations that the students' have and have made along the way. FLOW's phase structure can be used as a starting point for counselling in terms of the next steps in the process. The counsellor can also use the learning objects to make the students focus on concrete steps in their process.

FLOW and the information specialist

The information specialist can use FLOW's phase structure to find out how far the students have come in their work process. At the same time, the information specialist can use the learning objects about information searching either to find out how the students have come about their information searching, or to get them started on what would be right for them to do in their given situation.

FLOW and the teacher

With FLOW, the methodical teacher gets a number of learning objects that can be used as exercises or examples for teaching project methodology and problem solving.

4.0 The theoretical foundations of FLOW

FLOW is a product of Aalborg University Library's view of the phases of independent problem solving, of the academic writing- and information search process, and of our view of learning. It is characteristic of our theoretical reference points that they are process- and phase oriented in relation to independent problem solving with special focus on the student's independent construction process. We combine Søren Hansen's and Helle Algreen-Ussing's description of project work, Carol C. Kuhlthau's perception of the information search process, and Rienecker and Stray Jørgensen's view of the academic writing process (Rienecker and Stray Jørgensen 2005). The structure and learning objects in FLOW are based on this combination.

4.1 Learning

FLOW aims at supporting the student's learning process through clear communication, through reflection on needs, based on what they have done or are about to do, and by actively engaging them in the programme through written exercises. Learning takes place on three levels:

- In relation to the subject and problem that the student is working with. The programme must support the acquisition of knowledge.
- In relation to the work process and project work in general. The programme must support the methodical development.
- In relation to the student's writing and information skills. The programme must support the student's tools.

Generally speaking, FLOW represents a constructivist approach to learning. The programme will help the user make his/her own decisions when working with individual research papers, and assisting the student in his/her construction of knowledge.

The user will be assisted when it comes to reflecting on, and identifying, his/her current stage in the work process. FLOW's structure is based on a division of the work with the independent research paper and of the writing- and searching process into five phases. Each phase is described in terms of phase characteristics which are followed by a set of recommendations regarding the student's writing- and searching process.

In each phase, the user receives further assistance in his/her construction of knowledge from the learning objects that are attached to writing process and search process respectively. Some learning objects are constructed as questions for reflection on e.g. the quality of the problem definition. Other learning objects more explicitly prepare the ground for independent construction of knowledge, as the user is

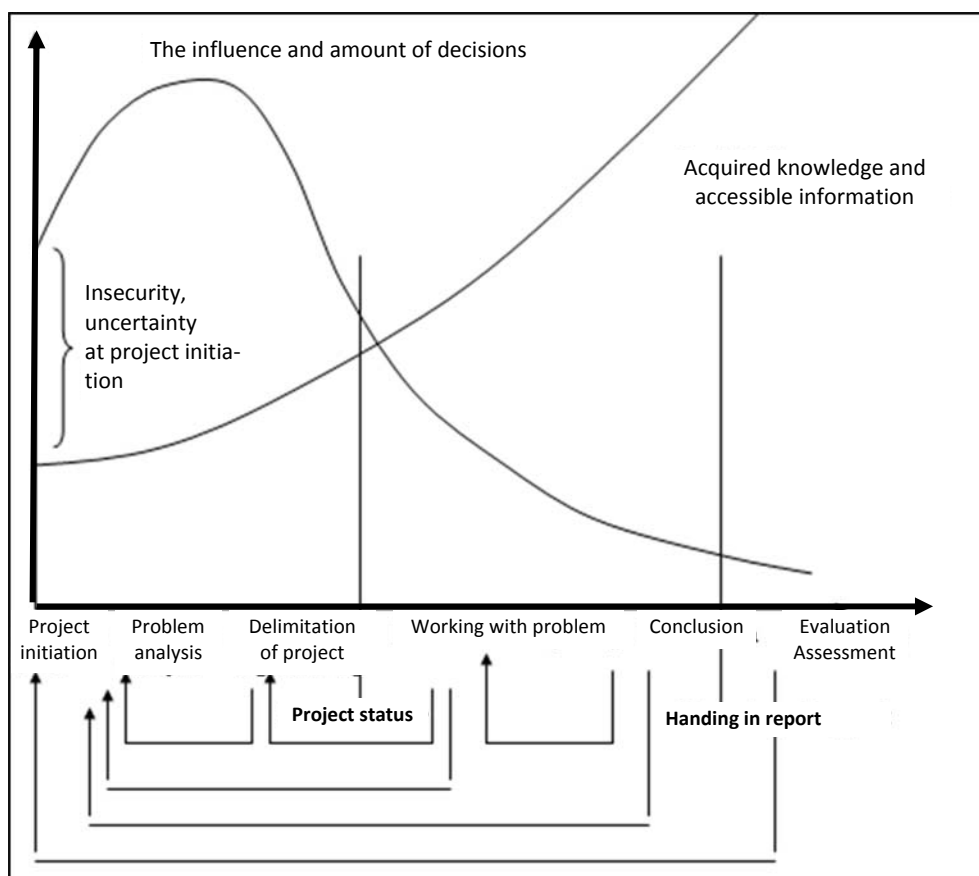
actively encouraged to engage in certain pre-defined and structured work questions. Furthermore, in each phase it is possible for the user to store his/her personal notes, as well as get help in terms of overall reflection on learning process and construction of knowledge.

FLOW assists the user in reflecting on his/her work, and in making decisions. However, it is the user who has the final word.

4.2 The project process

Generally the project process spans an entire semester, during which the student moves from uncertainty to certainty, from insecurity and frustration to clarity and relief, from problem to solution.

At Aalborg University, associate professor Søren Hansen and Helle Algren-Ussing have described the project process and its different phases in “The CLP Book – Cooperation, Learning and Project Management” (Hansen and Algren-Ussing). They describe the project process as confusing and complex, but divided into phases. The first phases are characterised by insecurity. However, this insecurity is a natural part of the project process as you do not have the necessary knowledge to make decisions (<http://slp.plan.aau.dk/>).



4.3 The writing process

FLOW connects the academic writing process and the information search process to emphasise that they are both part of the overall learning process.

FLOW takes its point of departure in the “new academic writing process” as it has been described in Lotte Rienecker and Peter Stray Jørgensen’s “Den gode opgave” (Rienecker and Stray Jørgensen 2005, p. 75 ff). The main difference between the “new” and the “old” writing process is that you write and revise throughout the process instead of planning everything *before* you start writing.

This view of the writing process fits the work process of the independent research paper, where the student develops, researches and tests, analyses and criticises, and concludes in an iterative process.

Rienecker and Stray Jørgensen’s view of the writing process is divided into points that illustrate a linear process. However, as they point out, you often jump between the points e.g. when you go back to revise something because you have acquired new knowledge. The eleven points are (Rienecker and Stray Jørgensen 2005, p. 85):

1	2	3	4	5	6	7	8	9	10	11
Topic selection	Pre-writing freewriting	Broad search for literature and reading	Preliminary problem definition	Targeted search for literature	Reading and writing	Final problem definition	Feedback on drafts	Outline	Revision	Teacher’s final grading

Basically, the writing process moves from an explorative creative point of departure (1-5) to a targeted critical analytical final point characterised by clarity (6-11). That is, you construct your knowledge during the writing process, and you work on separating uncritical and unedited writing from critical and edited writing. The actual writing of individual sections into final paragraphs or chapters moves in a process from rough drafts focusing on content to final presentable chapters focusing on form (Rienecker and Stray Jørgensen 2005, p.95).

In the “new writing process”, information searching constitutes two independent points (3 and 5), which represent the broad explorative search and the targeted in-depth search respectively. This view is in accordance with the perception of the information search process in FLOW. We have decided to let the information search process run parallel to the writing process thereby incorporating the broad and the targeted information search into the phases of the information search process.

4.4 The information search process

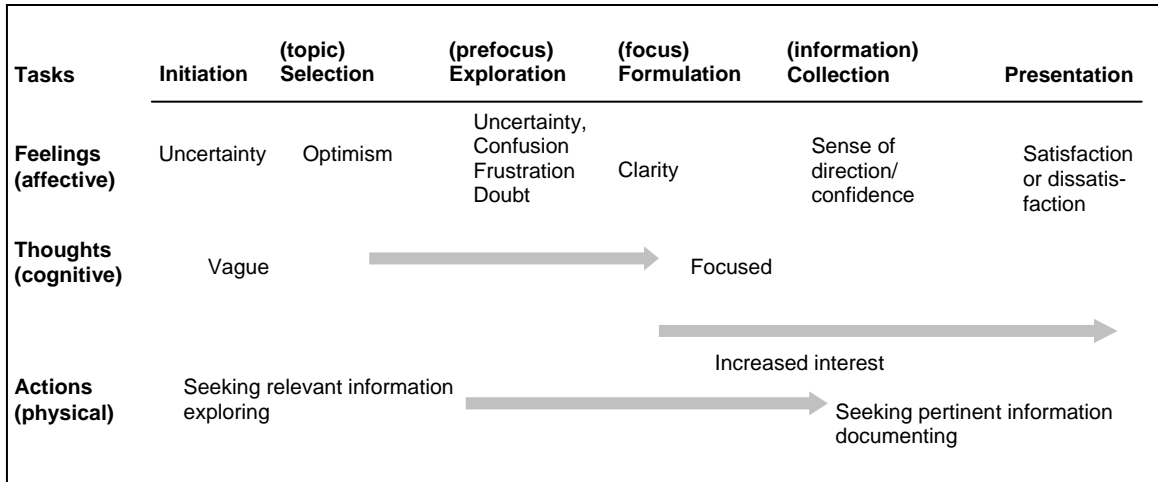
It is Carol C. Kuhlthau’s description of the information search process that forms the basis of our phase oriented approach, as it was the case in SWIM2. The key point is Kuhlthau’s emphasis on information searching as a *process* which is an integral part of an overall constructivist learning process that develops at both an intellectual and an emotional level (Kuhlthau 2004).

Kuhlthau’s perception of the information search process, as an integral part of the overall learning process, consequently leads to an extension of the role of the librarian. The librarian moves from being someone who primarily organises, locates and gives advice regarding sources into the role of process counsellor focusing on the student’s information needs (Kuhlthau 2004, p. 107 ff).

Kuhlthau sets up a model for the information search process. The model illustrates the tasks of the information search process divided into phases, along with what characterises the phases at an emotional, cognitive and action level. A key task for the librarian/information specialist is to help the student

identify at which stage in the process he/she is, and to counsel the student accordingly. Thus, the counselling varies depending on whether it is an optimistic student, who has just decided upon a topic, a frustrated and uncertain student, who need an overview of the problem area, or a clear and focused student who knows where he/she is heading.

Informationssøgeprocessen



(Kuhlthaus model for informationssøgeprocessen, Kuhlthau 2004, p. 82.)

4.5 The three together

The three models represent different aspects of the student's work process; writing, searching and problem solving. They also represent suggestions for the professional, academic and personal qualifications that a student in higher education needs to acquire. The student must learn to delimit and work around a problem area, the student must learn to develop strategies for writing and information searching in order to come up with the final independent problem solution.

The point in incorporating the three models is that there are several overlaps and similarities, and hence real possibility for the various counsellors surrounding the student's professional, academic and personal development for finding a mutual starting point. The project phase model and the information search process both emphasise the student's emotional development as an important part of the process and hence also of the counselling. The insecurity, uncertainty and frustration of the first phases are particularly manifest. There is an overlap in terms of dividing the information search process in two, with two different goals, as described in the academic writing process and the information search process. The first, broad and explorative search followed by the second, targeted in-depth search for information. The three models all move from an open, ignorant, idea developing and explorative beginning to a focused, targeted, delimited and learned closure.

The problem analysis and -delimitation is supported by pre-writing activities (such as freewriting and mindmapping) and the broad explorative information search, and concludes with the formulation of the preliminary problem definition. Working with the problem is supported by focusing, targeted in-depth information search, reading and writing.

The three models all present the process as linear. However, it is more of a "curly" iterative process during which you return to earlier phases to e.g. make adjustments regarding goal or problem area. Likewise, the different parts of the project may progress with different pace.

5.0 Technical requirements

FLOW is web-based. You can log on to the programme and create and store as many “FLOW-projects” as you like. There can be one or more users for the same “project”. You can have multiple users if the person who “creates” the project shares his/her password with others². Every time the student opens his/her FLOW-project, the most recent version will appear on the page.

Aalborg University Library can host FLOW. However, it is also possible for the individual educational institution or research library to host the programme. In such cases there must be a local FLOW-administrator, who can alter the design and add new generic learning objects in the “Process guide”. Regular users will only be able to add links in “My stuff”.

Some of the learning objects that are produced in Flash are open for direct interaction in terms of writing, turning cards, moving post-its etc. Whereas other learning objects only leave room for writing comments in one or more independent text fields. All comments can be stored and edited.

6.0 Structure, functionalities and content in FLOW

6.1 The horizontal and the vertical structure

FLOW offers the student to view his/her independent research paper as a process consisting of five different phases that are characterised by different needs at different points in time. The phase structure constitutes the basic framework of the FLOW programme, and the various functionalities all relate to this structure in one way or another. The horizontal process oriented structure is determined by the phase structure. The five phases are:

1. Phase – about creative idea development – called “Ideas”.
2. Phase – about creative pre-focus exploration – called “Explore”.
3. Phase – about critical focusing – called “Focus”.
4. Phase – about critical analytical research – called “Research”.
5. Phase – about conclusion and broader perspective – called “Conclude”.

Phase 1 – Ideas - Creative idea development

This phase is all about being creative in terms of getting ideas, pursuing them, and working with them. You need the ideas to find out what type of information you need to search for in phase 2, and to evaluate in which direction you should move in order work with a topic that is exciting, engaging, and professionally valid.

FLOW recommends that you base your idea development on an overall subject, or theme, and then use different idea development techniques e.g. brainstorming using post-its, or mind-maps. In terms of information searching, FLOW recommends that you consider what you and the other members of your study group already know from lectures, course literature, experience, interests, the media etc, and then base your idea development on that.

² At some point we hope that it will be possible to access a profile database of students and staff (a group-role database), and let others, e.g. fellow students or counsellors, take part in a FLOW-project. In this case, we do not speak of a database *in* FLOW, but of a central administrative database in a given institution that can be integrated with FLOW.

Phase 2 – Explore - Creative pre-focus exploration

The purpose of phase 2 is to work towards an overview that will create clarity regarding the way that the project or paper is heading. Creative exploration does not imply that you should come up with creative or clever solutions to your information needs! By creative, we mean that you should approach your ideas - and the possible connections between scientific areas - with an open, or invitational, mind. That is, you explore the surface of your various ideas and notes to get an overview of scientific areas, terms and possible problems, so that you can focus and decide what to include and what to leave out. It is not until later, in phase 4, that you begin to research in depth.

FLOW recommends that you get started on some pre-writing activities. Writing makes it easier to relate to the topic, and it will help you structure and clarify the ideas you are working with. FLOW recommends that you search for information that is easily obtainable, introductory, and inspiring. The goal is to establish an overview of the content of your ideas in terms of topics and possible problem areas. The information is not necessarily scientific, and should be used for inspiration and overview, and to prepare you for the critical focusing in phase 3.

Phase 3 – Focus - Critical focusing

In phase 3, you use the overview that you have just establish through creative exploration and clarification of relevant terms. You are about to decide your focus and settle on a problem and a preliminary problem definition. The problem definition can only be preliminary at this point, as it is bound to be sharpened and specified from the insight/construction of knowledge in phase 4.

Thus, at the end of phase 3 you are able to describe your goal and define the focus of your independent research paper or project. You have acquired a sense of direction – you know where you are heading. At this point, you are also very much aware of your information needs i.e. what you need to know more about.

FLOW recommends that you critically analyse the results of your exploration. That you work with, and structure, the results, and settle on a particular problem. You can either pursue one of your initial ideas, or settle on a combination of ideas. With regard to information searching, it is recommended that you work with the information you have already gathered in order to be able to focus, and that you spend some time preparing a list of keywords for your coming in-depth search for information. The keywords will serve as search terms, one by one or in combination.

Phase 4 – Research - Critical analytical research

The purpose of this phase is to thoroughly research your problem on the basis of scientific information. Your data must be critically examined and analysed, and documented in drafts that eventually the phase will be turned into final chapters. This is the most demanding phase of the writing process. You know where your paper or project is heading. Your exploration in phase 2, and your critical focusing in phase 3, has enabled you to specify your information needs. Uncertainty is replaced by clarity. You conduct targeted information searches, research the material, and work out your final problem definition. As opposed to phase 1, the goal of your writing is now final chapters.

FLOW recommends that you work towards final chapters. With regard to information searching, it is recommended that you spend time selecting relevant scientific information resources (databases) that

can be accessed from the library, make structured searches³, and decide which material is essential to the problem solving.

Phase 5 – Conclude - Conclusion and broader perspective

The purpose of this phase is to present an answer to your problem definition, to conclude your work, and to put your newly acquired knowledge into a broader perspective. By doing so, you show professional insight and overview, and ability to place your discoveries in relevant contexts. For instance, what new problems may arise in the wake of your conclusions? Putting matters into perspective may also serve as a launch pad for discussions at an oral exam.

The result should be predictions, relations, directions for action, and/or new research areas presented in a separate paragraph or chapter. Putting matters into perspective often leads to new questions that may resemble the outline of a new problem definition.

FLOW recommends that you compare your results with your problem definition, and consider whatever questions that may arise from your conclusion. With regard to information searching, FLOW recommends that you reconsider material that you have *dismissed* at an earlier point. I.e. you dig into the knowledge you have constructed and use the material at hand. Basically, it is the same strategy as in phase 1, except that your knowledge and insight into the problem is far more extensive. You may also choose to include “introductory material” that fits the level and amount of detailing that your perspective requires.

6.2 Functionalities

Mv tasks Mv stuff Mv comments Mv process notes Mv projects Process guide Tools

The process management part of FLOW is central to the programme, whereas the Process Guide is intended as additional help. FLOW is divided into a specific part where the user adds his/her projects or papers, deadlines, links, comments and answers (My tasks, My stuff, My comments, My process notes, My projects), and a generic part with learning objects and tools (Process Guide and Tools) that are native to the programme. The various functions and navigation possibilities can be accessed from the consistent navigation bar.

The phase descriptions and matching learning objects secure horizontal progression. The vertical structure appears in the shape of FLOW’s functionalities that are consistent despite variation in the phases. However, variation will occur from phase to phase once the student begins to contribute through functions. Each function requires that the student considers where the various contributions should be placed according to the phases.

The specific part

Process management

The student logs into FLOW from the FLOW-login-page. FLOW will begin with a page showing an overview of the



³ We consider a certain amount of creativity and adaptability to the databases to be part of what it means to be good at information searching.

phases and tasks that the student has added to the programme (the task fields will be empty the first time you enter the programme). The student's FLOW-project will always start with this overview of phases, tasks and deadlines.

My tasks

In "My tasks" you will be able to add tasks and deadlines. You will be asked to consider which phase the task belongs to, its status, deadline and the person in charge.

My stuff

In "My stuff" you can add links to other learning objects, or other "stuff", that you consider relevant to your problem solving. You are required to add your "stuff" according to one of the five phases, and briefly describe its purpose and content.

My comments






It is possible to comment all learning objects in "Process guide" either directly in the individual learning object, or in a separate text field. Your answers/comments will be stored under "My comments" according to the five phases, depending on where the learning object is placed.

My process notes

The programme contains three "process questions" for each phase that will make it easy for the student to reflect on selection and deselection in connection with the phases of the individual research paper or project i.e. the overall learning process. The "process questions" are available in "My process notes" and will be stored according to relevant phase.

My projects

In "My projects" you can view existing FLOW-projects, or add a new one.

Ideas 	Explore 	Focus 	Research 	Conclude 
Tasks My tasks and deadlines	Tasks My tasks and deadlines	Tasks My tasks and deadlines	Tasks My tasks and deadlines	Tasks My tasks and deadlines

The generic part

My tasks	My stuff	My comments	My process notes	My projects	Process guide	Tools
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Process guide

In "Process guide" you can view the learning objects of a particular phase.

For each of the five phases there is a page containing learning objects that can

help the student identifying his/her situation and needs, and recommendations regarding

Ideas explore focus research conclude	watch intro new project new pentagon new keywords help SWIM Back to start
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how to proceed in the given situation. The recommendations are supported by other learning objects that consist of short getting-started exercises, advice and guidance regarding the academic writing- and searching process.

Tools

In “Tools” you can use “help” to get a brief description of the FLOW’s functionalities, as well as view an introduction to the programme. There will also be a link to SWIM2 – the other part of the “Learning Objects Web”-project.

7.0 Content

FLOW is developed and designed for students. The student’s experiences, needs, motivation and skills are the key to the programme. Along with the constructivist approach to learning, this student approach makes certain demands regarding the content and form of the learning objects:

They have to be short, simple and easily accessible. The goal is not to provide detailed information, but short getting-started exercises. They must be relevant and usable. The student should experience the relevance of the tools, which is why the learning objects must relate to the student’s own tasks/projects and encourage them to try them in practice. In order to secure usability, the learning objects offer an immediate outcome if the student chooses to carry out the exercises or make comments.

The learning objects must be engaging, encouraging, and supportive. They must contribute with new knowledge and motivate the student’s reflection. Some of the learning objects are made in Flash with video clips, in which Thomas (counsellor) and Emily (information specialist) from SWIM2 are consistent characters. Other learning objects are a mixture of text and illustrations. Some learning objects contain exercises, while others allow the student to add comments.

The learning objects must also be creative and direct in their approach. The style must match the primary target group – the students – and should also aim at being creative to make the somewhat heavy and dull material more appealing. As a tool, FLOW should not merely be useful, but also interesting and entertaining to use.

7.1 Learning objects in “Process guide” for each phase

For each phase there is a learning object entitled “My situation”. It contains a brief description of the phase so the student can identify how far he/she has come with the paper/project. The description briefly explains the characteristics of the phase, the tasks at hand, and the expected outcome (Please see the “FLOW storyboard” for more in-depth information on the above learning objects).

Phase 1 – Ideas

1.1 Create ideas

Subject: My situation.

Form: Text, illustrations and commentary field.

1.2 Brainstorming

Subject: Writing.

My tasks	My stuff	My comments	My process notes	My projects	Process guide	Tools
					ideas explore focus research conclude	

Form: Flash with Thomas and exercise.

Begin with brainstorming using post-its. It is an excellent tool for generating ideas within a pre-defined subject area.

1.3 Is it a good idea?

Subject: Writing.

Form: Text, illustrations and commentary field.

Use the check list to take a critical look at your topic or topics. Then select what it is you want to explore further.

1.4 Use your own knowledge

Subject: Searching.

Form: Flash with Emily and commentary field.

Use your current knowledge for idea generation. Don't go to the library just yet.

Phase 2 – Explore

[My tasks](#) [My stuff](#) [My comments](#) [My process notes](#) [My projects](#) [Process guide](#) [Tools](#)

2.1 Explore your

ideas

Subject: My situation.

Form: Text, illustrations and commentary field.

Ideas
explore
focus
research
conclude

2.2 From ideas to first drafts – get it out!

Subject: Writing.

Form: Flash with commentary field.

Inspiration for pre-writing activities.

2.3 What, why, how? Get an overview

Subject: Writing.

Form: Flash with Thomas and exercise.

Structure and test your ideas using the “Pentagon”. This will give you an overview of what you need to explore.

2.4 What do I need?

Subject: Searching.

Form: Flash with Emily and exercise.

Identify your current information needs using the “Pentagon”.

2.5 Quick information

Subject: Searching.

Form: Flash with Emily and commentary field.

Recommendations regarding introductory material that will provide you with an overview of your subject.

2.6 Are you ready to move on?

Text, illustrations, commentary field and exercise.

Go through the check list before you move on.

Phase 3 – Focus

My tasks	My stuff	My comments	My process notes	My projects	Process guide	Tools
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3.1 Focus

Subject: My situation

Form: Text, illustrations and commentary field.

Ideas
explore
focus
research
conclude

3.2 From overview to focus

Subject: Writing.

Form: Flash with Thomas and exercise.

Focus on your choice of problem using the “Pentagon”. Use what you have learned from the introductory material you found in phase 2 to focus and select which idea, or combination of ideas, you want to turn into a preliminary problem definition.

3.3 Do you have a (good) problem?

Subject: Writing.

Form: Text, illustrations and commentary field.

Seven questions that may qualify your choice of problem.

3.4 Do you have the keywords?

Subject: Searching.

Form: Flash with Emily and exercise.

Use the “Pentagon” to find keywords you can use as search terms in your coming targeted in-depth search for information.

Phase 4 – Research

My tasks	My stuff	My comments	My process notes	My projects	Process guide	Tools
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4.1 Research

Subject: My situation.

Form: Text, illustrations, and commentary field.

Ideas
explore
focus
research
conclude

4.2 Does it make sense to others?

Subject: Writing.

Form: Text, illustrations and commentary field.

Good advice on how to move from written drafts to final chapters.

4.3 Who said that? Source criticism and references.

Subject: Writing.

Form: Flash, text, illustrations and commentary field.

About source criticism and how to handle your sources/references.

4.4 What do I need?

Subject: Searching.

Form: Flash with Emily and commentary field.

Help in finding the right type of information, and in identifying the type of material you need depending on purpose.

4.5 Am I looking in the right place?

Subject: Searching.

Form: Flash with Emily and commentary field.

Check list that may help you look for information in the right places.

4.6 Emily's Tips & Tricks

Subject: Searching.

Form: Text, illustrations and commentary field.

Good advice on information searching, before you move on to your targeted in-depth search for information.

Phase 5 – Conclude

My tasks	My stuff	My comments	My process notes	My projects	Process guide	Tools
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5.1 Put into perspective

Subject: My situation

Form: Text, illustrations and commentary field

Ideas
explore
focus
research
conclude

5.2 Tie up loose ends

Subject: Writing.

Form: Text, illustrations and commentary field.

Help for reflection on the content of your conclusion.

5.3 Look back, reflect, put into perspective

Subject: Writing.

Form: Flash with Thomas and exercise with commentary field.

Get help to put your conclusions into a broader perspective.

5.4 Use your knowledge!

Subject: Searching.

Form: Flash with Emily, illustration and commentary field.

Good advice on information searching, when you want to put your conclusions into a broader perspective.

Conclusion

FLOW is intended as a dynamic programme. It is our intention that the generic part of FLOW can be updated regularly with new learning objects. It is our wish to support the student's academic work process by offering relevant options and tools. It is not our wish to control their process. To us, it is all about supporting the student's problem solving and learning process. Enjoy!

Aalborg University Library, January 2008

Contact and information:

Lotte Stehouwer Øgaard

Subject consultant, MA

ls@aub.aau.dk

www.aub.aau.dk

www.flow.aau.dk

Thomas Vibjerg Hansen

Development consultant, MA

tvh@aub.aau.dk

www.aub.aau.dk

www.flow.aau.dk

Niels Jørgen Blaabjerg

(project manager)

Development consultant, M.Sc. (econ.)

njb@aub.aau.dk

www.aub.aau.dk

www.flow.aau.dk