

SWIM PEDAGOGICAL MANUAL

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PART 1: THEORY

The purpose of the manual

There is no single or fixed manner in which SWIM should be used. The purpose of this manual is to set up different situations in which SWIM serves a purpose. We are suggesting seven different situations, some of which are already, or soon to be, in effect. Others exist mainly as ideas.

The manual also presents the structure of SWIM as well as the thoughts, theories, and acts of pedagogy and information that have resulted in both the design of SWIM, and the way in which SWIM is being used today.

The manual therefore can be used as inspiration for developing your own way of using SWIM, but it can also be used as a “how to do”.

Therefore, the way in which you choose to use SWIM is very much up to yourselves!

The Development Team, Aalborg University Library, November 2003.

The purpose of using SWIM

- The overall purpose of SWIM is to give the students/user of the programme a higher degree of information competence that can be utilised independently of specific information resources, time, and place. In addition, this increased level of competence can be used to support their life-long learning process.
- SWIM is intended to make its user reflect upon previous, current, and future information retrievals and information requirements.
- SWIM is intended to communicate an *appropriate* strategy for retrieving information that is *generally applicable*. Also, to communicate to its users information retrieval techniques that are easy to understand and can be utilised when searching for information in connection with studies, projects, essays, assignments, etc.
- SWIM is designed to make its user experience a clear connection between learning and information retrieval.
- SWIM attempts to describe the study process so that it is easily recognisable and seems as realistic as possible in relation to the user's perception of himself.

What does SWIM stand for

- SWIM articulates a close connection between the learning process and the need for information. This is expressed during the stages of project or assignment work, and in the emotions and rationality pertaining to these.
- SWIM offers us a shared theoretical and practice-orientated fundament from which we can structure and plan teaching, information guidance, and immediate assistance to the users of the library.
- SWIM is based on an understanding of the *user's* information requirements.

A description of SWIM

Attached to information competence are *universal* methods and qualifications that can be used again independently of time, place, and resources. At the same time, there are *specific* qualifications that depend on time, place, and information resources.

SWIM therefore is in two parts:

1. SWIM's role-playing: A problematising process-orientated general part.
2. SWIM's information modules: A more informative product-orientated part, that takes into account resource-specific qualifications.

SWIM'S ROLE-PLAYING – THE GENERAL PART

The role-playing is based on video sequences that form part of a multimedia programme. In order for SWIM to keep the attention of its user, the role-playing is constructed partly as a game, and partly as a story about a group of students writing a project. The user of the programme becomes the fourth member of the project group and has the say-so in the group's discussions.

We attempt to describe the study process so that it is recognisable and seems as realistic as possible in relation to the user's perception of himself.

It is the user's working process that is in focus – not the resources of the library! Therefore, we see things through the eyes of the student. We present different situations (scenarios) of the project-writing process that involve different information requirements. In each situation, the user must make choices that depend on how far s/he is in the project process.

Since the user's working process primarily forms the course of the narrative, the programme is structured around phases that are typical of the project-writing process. At the same time, the different group members will influence the course of the narrative in general due to their personality, behaviour, priorities, and attitude towards their studies and life.

We attempt to generate within the user an expectation that the conclusion will be exciting, if s/he chooses to complete the course of the multimedia narrative.

Structure

The overall structure of the role-playing consists of the following scenarios:

- 1) Start-up meeting in the group room
- 2) Meeting in the canteen
- 3) Meeting with the supervisor
- 4) At the library
- 5) Finishing the project
- 6) Examination

The chosen scenarios are all situations characteristic of the study process, and situations in which the students will typically experience a need to find information on different levels in order for them to uncover subjects and problems.

The structure of the role-playing in each scene:

1. The user is introduced to a given situation via a video sequence that contains a brief introduction.
2. Hereafter, Anna, Mette, and Thor discuss their different strategies.
3. At the end of the first part of a scene, the user (the fourth member of the group) must choose to support one of the characters, *i.e.*, *one of the strategies*.
4. After this, further video sequences will be shown. These will show the considerations of the other two group members in relation to the situation.
5. Again, the user must decide whether he wants to support his first choice, or choose another character/strategy.
6. Hereafter, further video sequences will be shown. These will show the considerations of the other two group members in relation to the situation.
7. Again, the user must decide whether he wants to support his first choice and/or second choice, or choose another character (strategy).
8. The programme will collect the user's final choice in each individual scene, and the user will score points for each scene.

The points will be accumulated throughout the programme and are essential in the final scene which is the examination. Here, the group will be given a grade (6, 9, or 11) and constructive criticism.

Throughout the video sequences, we are presented with the choices of Anna, Mette, and Thor in terms of information retrieval strategies in a given situation. In the programme, one of the characters represents the strategy that we find most appropriate in a given situation.

The results of the role-playing

	Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
Anna	0	-	0	+	-
Thor	0	+	-	-	+
Mette	+	0	+	0	0

+ = most appropriate choice
 0 = appropriate choice
 - = inappropriate choice

+ = towards 11
 0 = towards 9
 - = towards 6

After the grade and the feedback have been given by the examiner/supervisor and external examiner, it would seem natural that the user concentrates upon one or more of the informative information modules, or that an information specialist deals with the information competence “gaps” when teaching.

Gallery of characters

Your group consists of the following characters: Anna, Mette P., and Thor.

Anna – 21 years old and a Grazer

Good at utilising various techniques in order to get hold of material. Inefficient when it comes to remaining critical of the relationship between problem and material, which is why she includes everything.

Went to university directly after high school – and went to high school straight after the 9th grade. Anna was the quiet type in grade school, although she was always well behaved. Has become “somewhat” liberated while at university – she needs others to confirm her self-confidence. She is the kind of person that reads a lot of literature quickly, but she has a tendency to lose her overview and she finds it difficult to wait for a problem that will qualify her choice of literature. However, she is actually very good when it comes to searching in databases.

Profile of Anna's information competence

Traits	Routine	Problem	Working method	Focus	Type	Skill (Qvortrup)	Learning level (Bateson)	Solution level
Grazer – Gnu	Routine	Known	Known	Technique	Artisan	Qualifications	Learning Learning 1	Producing solutions

Anna is a “grazer” because she will begin in one place and then chew her way through. She is the kind of person that will borrow 10 books right away and read through all of them. She works best in situations where she is familiar with the problem and at the same time knows how to solve it. That is, routine situations. She is qualified to solve well-known routine situations, but she is less efficient in terms of coming up with new methods of solution.

Mette P. – 24 years old and a Hunter

Good at identifying the need for new material on the basis of the problem. She is not proficient in creative thinking. She focuses on the specific problem only and cannot see beyond it. Therefore, she will go directly for the material that she finds relevant.

Mette P. maintains her overview and has a practical view on things. Her studies are important, but her job is also a big draw. She is the manager of a fitness centre. Through her work, Mette is very social. This also means that Mette P. is not the one who does all the hard work in a group process. Her strength is that she is good at formulating problems that can be used as a means of qualifying the information retrieval.

Mette P. is also very talkative during the meetings and, perhaps, she is more dominating than influential. During the meetings with the supervisor, she comes across as someone who has worked a lot harder than is actually the case – this is due to her ability to maintain an overview. She comes across as well balanced.

Profile of Mette's information competence

Traits	Situation	Problem	Working method	Focus	Type	Skill (Qvortrup)	Learning level (Bateson)	Solution level
Hunter – lion	Problem-solving	Known	Unknown	Process	Consultant	Competences	Learning how to learn Learn 2	Utilising methods

Mette is a “hunter” because she goes directly for material that she finds relevant. She works best in situations that allow her to be a trouble-shooter. That is, situations in which she is familiar with the problem (it has already been given to her) but does not know how to solve it. It requires analysis. Her focus is on solving the problem in the “right” manner, that is, on the process. She is capable of solving problems but she is not proficient in defining them. Therefore, her skill is “competences” and not “creativity” as was the case with Thor.

Thor – 23 years old and a Browser

Good at qualifying a given problem from material. Not proficient in maintaining an overview of the amount of material, thus it is difficult for him to go directly for relevant material. Therefore, he will pick bits of material here and there – mostly in accordance with his interests.

Thor is the creative type who is capable of combining theory and practice in new ways. This means that he is able to put things into perspective and qualify the

specific problem from the acquired literature. Thor's interest is broad – conversely, he cannot be bothered at all dealing with anything that does not fall within his field of interests.

Profile of Thor's information competence

Traits	Situation	Problem	Working method	Focus	Type	Skill (Qvortrup)	Learning level (Bateson)	Solution level
Browser – giraffe	Problem-orientated	Unknown	Unknown	Product	Facilitator	Creativity	Re-learning Learning 3	Creating new solutions

Thor works best in situations that require a problem-orientated approach, which is characterised by the fact that both problem and working/solution method are unknown. That is, one comes up with a problem and thereafter solves it. This is why he is “creative”. His focus is on the product, for instance the problem, and not on the actual process. Here and there, he will pick up whatever he might find relevant. Therefore, he is a browser.

Summary of the profiles of information competence

	Traits	Situation	Problem	Working method	Focus	Type	Skill (Qvortrup)	Learning level (Bateson)	Solution level
Anna	Grazer – gnu	Routine	Known	Known	Technique	Artisan	Qualifications	Learning Learning 1	Producing solutions
Mette	Hunter – lion	Problem-solving	Known	Unknown	Process	Consultant	Competences	Learning how to learn Learning 2	Utilising methods
Thor	Browser – giraffe	Problem-orientated	Unknown	Unknown	Product	Facilitator	Creativity	Re-learning Learning 3	Creating new solutions

SWIM'S information modules – the specific part

The actual information modules are those parts of the programme that can be modified by other libraries. That is, other libraries can easily add their own parts to the modules. The information modules are connected to the role-playing in terms of their content, however, they can also be used on their own.

The content of the information modules also approximate Kuhlthau's model of the information retrieval process. Whereas the role-playing is problematising and encourages one to reflect, the information modules are more informative and instructive and shaped like tutorials.

The information modules contain information and structure that can be used as a foundation for teaching and guiding users in information retrieval.

Structure

The five information modules are directly linked to the first five scenes of the role-playing. They contain the information/knowledge that the right choices throughout the role-playing are based on. The headings and related subheadings of the five modules are as follows,

1. Project start
 - use the information you have
2. Pre-focus exploration
 - establish an overview by using easily accessible information
3. Focusing
 - structure and combine your information
4. Elaboration
 - support your focus with a number of detailed searches
5. Putting your project into perspective
 - search on the basis of the information you currently hold

The heading indicates one's progression in terms of working with a project or another assignment. The subheading expresses the particular information retrieval strategy that we recommend at this particular stage of the process.

Each of the five information modules have been structured in a similar manner. That is, each module is based on four points that give advice on how to proceed

appropriately, depending on the user's information requirement. In addition, it describes how the user can solve his information requirement. The four points are as follows,

1. Your situation

- Describes one's present stage of the project/assignment process, and also the feelings characteristic of this stage.

2. What would be a good thing to do now?

- Describes the information retrieval strategy and methods most appropriate at this juncture.

3. What type of information is of use to me?

- Describes those types of material that will be useful. For instance, course literature, reference books, periodical articles, books....

4. How do I make use of the relevant information resources?

- Describes different examples of information resources and how these can be utilised. Contains certain tutorials.

The four points can be used gradually, but they can also be used independently of each other. The points 1 and 2 are based on Kuhlthau's model and are connected to the scenes of the role-playing in terms of their contents. In other words, the most appropriate choice in scene 1 of the role-playing is elaborated in information module 1. The points 3 and 4 constitute the operationalisation where we move from the general to the specific.

Theoretical and empirical framework of SWIM

THE CONCEPT OF INFORMATION COMPETENCE

Our perception of and attitude towards the user's working processes are supported by a model outlined by Carol Kuhlthau in the book "Seeking Meaning" (1993).

The interesting thing about this model is that it illustrates a connection between the students' emotions, realisations, and behaviour within the actual stages of the information retrieval process. We use these patterns as inspiration in terms of the "dramatic" evolutionary work. The challenge here is to link Anna, Mette P., and Thor's different behaviour, emotions, and realisation with the general patterns of reactions as outlined in each phase of Kuhlthau's model.

A SWIM-modified version of the model found in Kuhlthau's book "Seeking Meaning" (1993) looks as follows,

Acts in SWIM	phase 1 Project initiation	phase 2 Prefocus exploration	phase 3 Counselling	phase 4 Information collection	phase 5 Further exploration	Examination
Location	Group room	Canteen	Teacher's office	Library	Group room	Examination room
Stages of the ISP	Task initiation/ Topic selection	Prefocus exploration	Focus formulation	Information collection	Search closure	Starting writing
Cognitive level	Ambiguity	→				Specificity
Affective level	Uncertainty/ optimism	Confusion, Frustration Doubt	Clarity	Sense of direction Confidence	Relief	Satisfaction or dissatisfaction
Behavioural level	Seeking relevant information	→				Seeking pertinent information
Moods	Combination of invitational and indicative	Invitational	Indicative	Combination of invitational and indicative	Indicative	

What is central in this model is the connection between project work, information retrieval, and the affective level. It is this linkage that users recognise. It is a combination of this linkage and the users' experiences that enable users to identify their information requirements and influence their behaviour when searching.

Kuhlthau's model is further dealt with in the key plan of SWIM, which can be used when teaching users.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	
Scenarios in SWIM	Initiation in the group room	Meeting in the canteen	Meeting with supervisor	At the library	Finishing the project	Examination
Phases of the project work and information retrieval	Project start and choice of topic	Exploration	Focusing	Elaboration	Putting into perspective	
Information retrieval strategy	Use the information you have	Establish an overview by using easily accessible information.	Structure and combine your information	Support your focus with a number of detailed searches	Search on the basis of information you currently hold	
Experiences Feelings	From uncertainty to optimism	Confusion, frustration, and doubt	Clarity	Certainty of where one is going	Relief	
Information modules containing further information	Information module 1	Information module 2	Information module 3	Information module 4	Information module 5	

VIEW OF LEARNING

Through the narrative presented in SWIM's role-playing and the interaction between user and the options of the programme, we attempt to establish a reflexive sphere of learning. This sphere of learning is designed to make the user reflect on the problems that often arise in connection with project work/writing an assignment and information retrieval, and relate them to the strategies represented by the three characters in the narrative.

The SWIM programme and the usage of SWIM when teaching are both based on a constructivist approach to learning. This is based on the notion that each individual perceives and constructs his own reality in accordance with personal experiences and impressions.

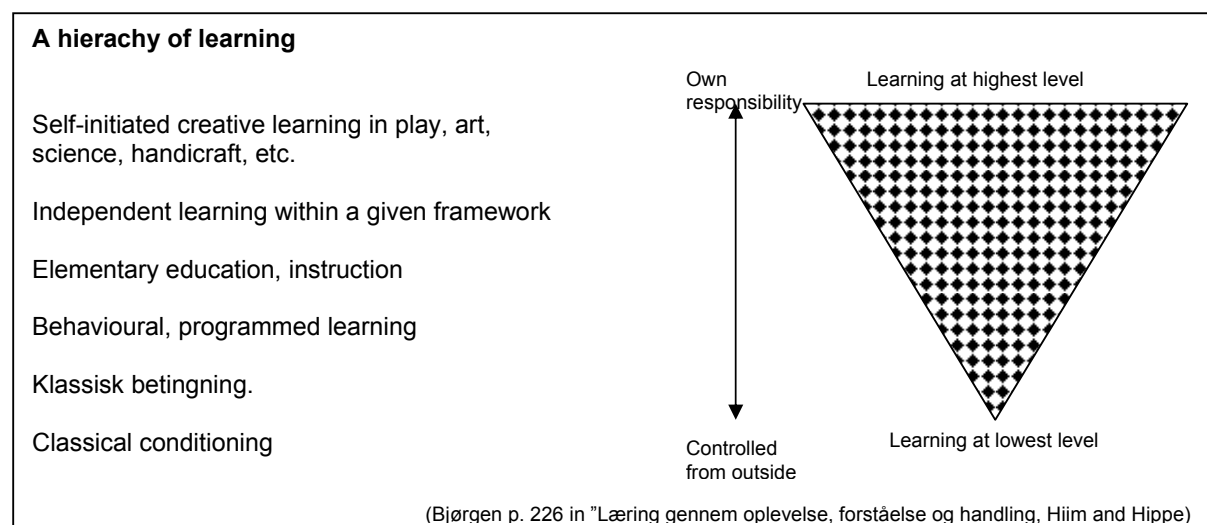
These "constructions" we hope to influence by establishing a reflexive sphere for learning as expressed most clearly in the user's interaction when taking part in the role-playing. Also, by offering an appropriate information retrieval strategy in a more instructive form as expressed most clearly in the information modules.

We believe that the user's experiences, active participation, and realisation of both relevance and immediate usability are important factors. Both when it comes to motivating the users and when it comes to opening the way for their learning. It is advantageous if the user has actually experienced the linkage between information retrieval and writing an assignment/project work, for better or worse, in order for him to fully understand the value of the appropriate advice. At the same time, we believe that by letting the user work realistically, i.e., in relation to the assignment or project he is currently working on, we ensure the learning as best we can.

Through SWIM's reflexive sphere of learning, the user will acknowledge his information requirements. In SWIM and when being taught with SWIM, the users obtain valuable advice and tools that make them capable of identifying their own requirements and covering their information requirements in an appropriate manner.

The model below shows how different teaching methods can be used in order to make possible learning on different levels. The view of learning has an effect on the roles of teacher and student. It could be that the teacher is the facilitator and that the point of departure in terms of the teaching is student-centred. It could be that the teacher is the instructor and the teaching is teacher-centred. That will affect the learning. The closer the content of the learning situation is to the student, the higher the degree of learning.

This is illustrated in the model below. We believe, that SWIM and using the programme when teaching/during supervision can be situated within "Independent learning within a given framework", with a few exceptions primarily in the information modules that pertain to "Elementary education, instruction".



We aim at working from a view of learning that is comprehensive and where the following principles manifest themselves.

- Learning and experiencing are two sides of the same coin.
- Learning is an individual process of construction.
- Good learning involves a close interplay between reality, environment, and society.
- Good learning is experience learning – related to the actions, way of thinking, and experimentation of the individual.
- Learning and information retrieval are two sides of the same coin.
- Good learning is a creative process.
- Good learning takes place through a problem-solving, active learning process.

Amputated learning process	Comprehensive learning process
1. To be presented with a problem	1. To discover a problem
2. To temporarily accept it	2. To accept it for real
3. To work with an examination in mind	3. To work realistically
4. To create structure in the material	4. To relate it to one's own experiences
5. To finish with an examination	5. To test and utilise in practice

(Bjørger p. 226 in "Læring gennem oplevelse, forståelse og handling, Hiim and Hippe)

With our teaching, we want the participants to discover a problem, i.e., their information requirements. We link the teaching to the project or assignment they are currently working on, which means that they are able to work realistically and test how it works out in practice while we instruct them. We use SWIM and Kuhlthau as something that the participants can compare their own experiences of information retrieval, group work, project work and/or writing an assignment to.

EMPIRICAL FRAMEWORK

SWIM is the result of a development initiated by AUB. It began as the pilot project MILE which was released on cd. MILE, like SWIM, is a multimedia programme consisting of a course of education divided into modules that can be used independently of each other and that support learning via interaction.

A pilot study in connection with MILE showed that the interaction format is particularly appealing to the target group (young students).

The modules are heterogenous and built with the aim of testing different teaching methods, such as animated demonstrations, various types of exercises, narra-

tive and interactive film sequences. That is, situations in which the programme reacts differently to the user's choices, and in which interaction with the user is established. MILE takes into account the fact that users differ when it comes to learning, both in terms of styles and tempi. It has been designed as a just-in-time self-instruction programme that the user can concentrate upon when he has the time and the need for it.

SWIM has elaborated the multimedia format and the possibility of interaction. Unlike MILE's cd, SWIM is available online which makes it easier for users to gain access to the programme and the specific information resources that the user may require. In addition, it is easier for those responsible for the programme to make updates. An evaluation of MILE showed that one of the most effective means of engaging the user was video footage of professional actors performing. The SWIM project therefore is a powerful further development of this form of communication.

Put simply, one could say that SWIM is a synthesis of the world of teaching, the library, and being a student. We consider it a realistic image of the reality in which the students are situated. Previously, teaching information competence and information retrieval was generally considered part of the library's work; it was separated from the world of education and was perceived mainly as an appendage to an assignment/a project.

We see the acquisition of information competence as part of the learning process and therefore not as something separate pertaining only to the work of the library, or as an appendage. The library offers one thing, the teachers something else, field work something entirely different...

In order for us to make the problems in SWIM as realistic as possible, we have worked together with tutors from the university, we have had a work group consisting of AUB information specialists set up, and twice we have tested SWIM's role-playing on students to hear their reactions.

We have cooperated with a group of people that followed the development of our project. This group consisted of representatives from Roskilde University Library, The Royal Library, and The Aarhus Business School Library. Less formally, people connected with both the world of education and the library have continuously been presented with fragments during the production of SWIM. At the same time, we have gained much experience from being students ourselves, requiring information for an assignment or a project.

Organisation of the learning process/teaching

Planning the teaching is very similar to that of organising the learning process of the participants. If one chooses the latter, it is very likely that, as a teacher, one plans in accordance with the requirements, motivation, and abilities of the participants. We believe, that it is more important to start one's planning from the qualifications that the participants *have*, rather than from the qualifications that we think the participants *ought to have*. We have the motivation of the participants at heart. Therefore we ask ourselves, for instance,

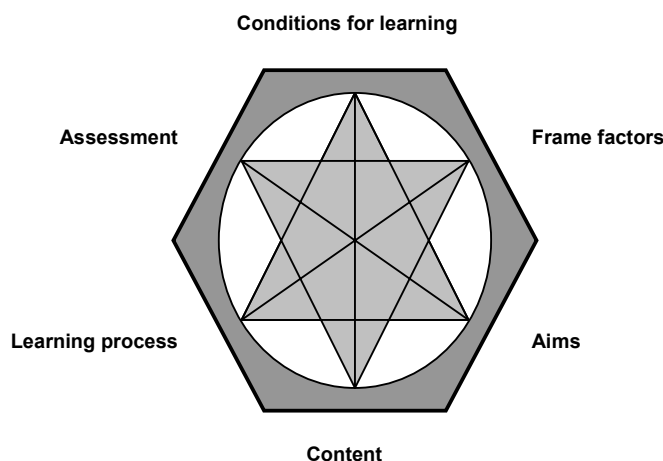
- Is the organisation coherent or are there dissonances in terms of the relation between, for example, content and the participants' qualifications, or between the aim and the time allotted.
- What will motivate the students when the content and learning process are being planned? Do the examples relate directly to an assignment/a project that they are working on, have been working on, or are about to work on?
- Are they already working together in groups so that exercises/discussions can be concentrated round the groups?
- What is the relationship between your/the study's specific quality requirements and the students' qualifications in terms of meeting these requirements?

In order for us to structure our organisation of teaching information retrieval and our information tutorials, we have adopted *the didactic relational model* as it is presented in Hiim and Hippe's book "Læring gennem oplevelse, forståelse og handling"(Gyldendalske Boghandel 1987) (my translation: Learning through experience, understanding, and action).

They base their expounding of the model on critical humanistic pedagogy. Nothing is certain and everything should be seen in relation to something else. When one makes a choice in one place, it will have an affect elsewhere.

THE DIDACTIC RELATIONAL MODEL

The didactic relational model consists of six categories which express a broad understanding of didactics, or theory of teaching. Narrow understandings may only be focused on the relationship between “aim” and “content” based on an ‘aim-means’ way of thinking.



The didactic relational model is broad since it respects the significance that factors such as knowledge, proficiency, emotions, psychology, culture, and society have for learning and teaching. The fact that, as a teacher, one is forced to think in terms of relations is the strength of the model. This is how reality works; it is coherent! At the same time, the model proposes 6 categories that one can relate to which makes it easy to grasp and use.

1. *Conditions for learning:*

Conditions for learning cover the emotions, attitudes, skills, and understandings that will always have an influence on the “student” during the teaching/supervision. The social and cultural background of the student also marks the conditions for learning. What is the student interested in? What previously acquired skills does s/he have? What are the student’s resources or problems in relation to the teaching? What about the student’s background? The conditions exist in relation to the other categories.

The conditions for learning continuously change during the student’s constant knowledge acquisition as well as his experiences of life and teaching. Therefore, the demands made on the teacher/supervisor involve the ability of *sympathetic insight and humanity, psychological, social, and didactic insight and specific knowledge*.

2. *Frame factors:*

Frame factors cover everything that limits or makes learning possible. For example, rooms, time allotted, the organisational/institutional culture, collegial conditions, economy, schedules, staffing, attitude, organisational structure, general plans, etc.

The specific and personal qualifications of the teacher/supervisor also constitute a frame factor. The degree of importance in terms of the frame factors is related to the other categories.

3. The aim of learning:

The aim of the teaching/supervision is connected with the intentions of the teacher/supervisor as well as the students' benefit from the teaching/supervision. Certain things can be *specified in terms of the aim*, other things can only be indicated *purposefully*. The degree of specification must depend on the current situation. One can work with overall aims and partial aims. It may be a political aim, an aim of the institution, and an aim of learning for the individual student/user.

In didactic relational thinking, it is inappropriate to see aims as something that can be taken for granted and as something fixed without any relation to the other categories. Aims can/must be adjusted in accordance with the conditions for learning, frames, etc.

4. Content:

The content and how this is chosen and organised is what the teaching/supervision is all about. We are talking proficiency, skills, attitudes, specific material, information resources, books...

Often, an essential question is "in relation to what/whom should the content be planned?" Is the content planned in relation to the students/users, in relation to our own proficiency in a given subject, or does the content represent the values of the institution or of society? Should the content be adjusted for the individual, or should it be critically transgressing and consciousness-raising? Again, this illustrates how content must be determined on the basis of the current situation and in relation to the other categories.

5. The learning process:

This is about the learning process; about who decides on the working methods, and the teaching methods employed. Headwords may be,

- Is one to be a facilitator, a counsellor, or an instructor or...?
- How is the communication to take place?
- Inductive or deductive teaching?
- Individual or group instruction?

- Should the participants be active or passive?
- Should the teaching be based on a problem or experience? Lectures, case stories, instructions...?

It would seem most natural to base the learning process on the participants' conditions for learning, but often the content and especially the frame factors have great significance for the execution of the teaching.

6. Assessment:

The assessment says something about how the teaching/supervision and the learning work, as well as the result. The following questions are relevant:

- How and when should the students' learning be assessed?
- Who should assess the students' learning?
- In relation to what should the students' learning be assessed? Aims, the students themselves...
- Why should the students' learning be assessed?
- How and when should the teaching/supervision be assessed?
- Who should assess the teaching?
- In relation to what should the teaching/supervision be assessed?

DIDACTIC CONSIDERATIONS WHEN TEACHING WITH SWIM

Often, a natural starting point would be the users'/students' conditions for learning, though not always. What characterises the user of the didactic relational model is that s/he starts in one place...

Perhaps one brainstorms the different categories. Hereafter, one would relate, in a critical manner, the contents of the different categories to each other. Do they go together? Should one's initial contemplations be adjusted in relation to the user's qualifications? Should the content be changed in relation to the desired learning process and the current frames?

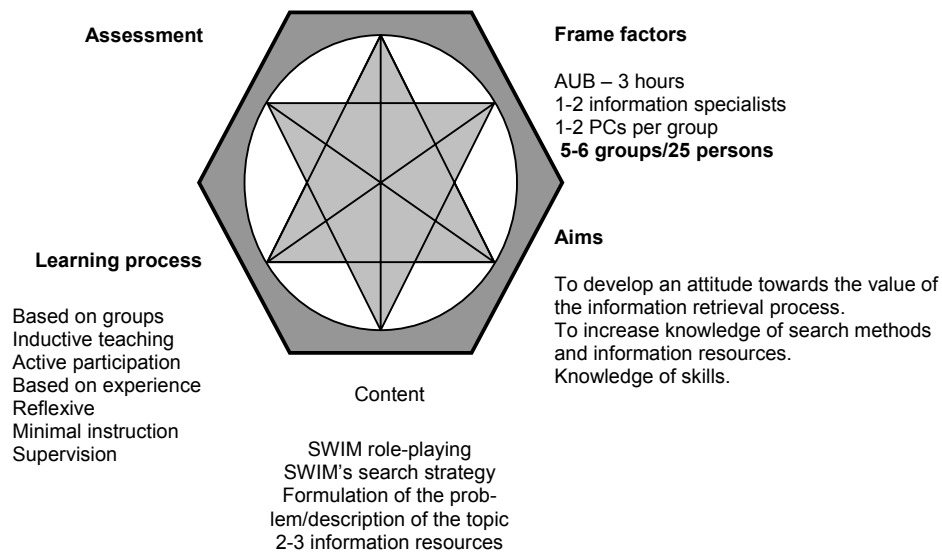
This way, one is able to move around inside the model. Back and forth. Up and down. Diagonally. Until one finds it that there is inner coherence between one's didactic considerations and the organisation of the user's learning process.

- What are the specific, cultural, and social conditions of the students? What are they currently working on? How far have they progressed with their education? - *Conditions for learning.*
- How much time is allotted? How many participants? Rooms? My strong and weak points as a teacher? What is my opinion of the content of SWIM and the recommended information retrieval strategy? - *Frame factors.*
- What aims and partial aims should I set? Should they be concrete or more abstract? Should the participants develop opinions or acquire skills? Is the aim unambiguous and predetermined, or do we have an indication of the direction without being conversant with the final aim? - *Aim.*
- What should the content be? SWIM's role-playing + study-specific criteria for quality + good and bad examples? Do I have too much content? Is the content suited for their conditions for learning? Have I based my choice of content on their needs, or on that which I regard as important? – *Content.*
- What are the best possibilities of them learning something, or what possibilities can I make use of? Group work, plenary sessions, lectures, dialogue, one-way communication? Should the teaching be deductive or inductive? - *The learning process/teaching method.*
- How do I assess whether the aims were met? Can this be assessed? Should this be done by handing out an assessment form that must be filled in before the room is left, or at a later stage...? Can this be assessed now, or is it only at a later stage that an effect can be measured/assessed? Is there any difference between measuring and assessing? What is it that we can measure here and now? – *Assessment.*

Below is an example of how the didactic relational model can be utilised in relation to group teaching by the library's information specialists.

Second semester: has experience with project and group work, has been introduced to AUB, has not worked systematically with information retrieval, would like to do a project and enjoys being part of the group, motivated in terms of the project and the group.

Conditions for learning



Conclusion

Originally, SWIM was primarily considered a stand alone and just-in-time e-learning product. It has now developed so that today, SWIM to a greater extent is a blended learning product. The library's organisation of face-to-face teaching and guidance of students in information competence and information retrieval basically hinges on SWIM. When planning teaching and supervision, SWIM offers a structure, content, and a learning process.

This manual and the situations presented below are the results of SWIM's pedagogic effectiveness and significance for the acquisition of information competence.

PART 2: PRACTICE – How to use SWIM

SITUATION 1

SWIM AS A STAND ALONE AND JUST-IN-TIME PRODUCT WITHOUT PERSONAL GUIDANCE

Didactic considerations

Aim

- To give the participants a generally appropriate search strategy in order to optimise their project work and accumulated learning.
- To give them some generally useful advice.
- To make them understand the connection between the learning process and information retrieval.
- To make them realise that there is a point, and that it is not too complicated.

Frame factors

- A PC that fulfils the technical requirements.
- Speakers or headsets.
- 1 participant or a group.
- Approximately 30 minutes for the role-playing
The timescale depends on how much time the user spends considering the options. As for groups, it depends on how much time they spend discussing the options. The user is not able to skip any scenarios of the game, nor is he able to save.
- Approximately 60 minutes for the information modules.
As a stand alone and just-in-time product, the user can decide for her/himself how s/he will make use of the time allotted. The user can skip any given module, and individual points of the modules.

Content – What parts of SWIM

- SWIM's role-playing.
- SWIM's information modules.

Learning process

- Learning through reflection, experience, construction, and information.

Practical usage and exercises

- Via AUB's homepage, SWIM is available 24 hours a day. If one's technology is sufficient, a given user is therefore able to decide for her/himself (just in time) when s/he has the time to use SWIM. The user can approach the programme without any guidance or assistance (stand alone) and still be a constituent part of a learning process.

- In the long term, it is intended that SWIM will form part of online virtual information guidance.

SITUATION 2

GROUP INSTRUCTION WITH THE LIBRARY STAFF AS TEACHERS

(used by the information specialists at Aalborg University Library)

Didactic considerations

The user's conditions for learning (in their second semester, most students at AAU have)

- Experience with group work.
- Experience with project work.
- Experience with information retrieval.
- Knowledge of AUB and a wide range of information resources.

Aim

- To give the participants a generally appropriate search strategy in order to optimise their project work and accumulated learning.
- To give them some generally useful advice.
- To make them understand the connection between the learning process and information retrieval.
- Make them realise that there is a point, and that it is not too complicated.
- To create a connection between the content of the teaching, information retrieval, and the participants' daily studies.
- To link theory and practice with the participants' current project/assignment.

Frame factors

- 3 lessons: SWIM – theory and practice – guidance.
- A room with a number of PCs arranged so that the students can be seated in groups of three around the PCs.
- Plugs for 3 headsets.
- The staff's knowledge on and understanding of the SWIM role-playing and the ideas behind it.
- Approximately 30 persons, or 5-6 project groups.
- 2 information specialists.

Content – What parts of SWIM

- SWIM's role-playing.
- Key plan of SWIM (see appendices).
- A description of how to perform a simple search, as presented in the information modules.
- Using “keywords/subject terms” from the problem formulations or subject descriptions.

- Few but relevant information resources. For instance, Infomedia, Auboline (AUB's catalogue) and possibly a more subject-specific information resource, for example, PsycInfo for students of psychology.

Learning process – Inductively organised learning process:

- Create activity within the student and use this activity as a starting point.
- Take as one's starting point the students' experience(s).
- Analysis of experience and current practice.
- Theorise the experience and current practice.
- Use the theoretical understanding as a means of creating a new practice.

Practical usage and exercises

Prior to the teaching, the enrolled project groups have submitted their preliminary problem formulations or subject descriptions to the information specialists, so that the theory put into practice and selected information resources can be linked to that which the participants are currently working with.

- Lesson One – Introducing the agenda for the day with a presentation of objectives and grounds
 - SWIM to be played by 2-3 persons from the same project group.
 - To ensure reflection and discussion.
 - To create a social sphere for learning (the group).
 - To provide a breeding ground for processing their opinions, and to increase their knowledge by problematising the idea of being part of a project group that requires information for its project.
 - To provide us with some shared experiences that we can base our discussions on.
 - To generate an interest in information retrieval and keep the attention of the participants through identification and entertainment.
 - The information specialist begins the lesson and observes.

Break

- Lesson Two - Discussion, exchange of experiences, models and theories, and examples of information resources.
 - The teacher's questions for the students:
 - Have significance for how the students will proceed.

- Have significance for the teacher's focus on theory, model, and information resources in the unique situation.
- Key plan of SWIM (see appendices).
 - An integration of Kuhlthau's model and the phases and emotions of the project work.
- Theory and information resources (exemplified, for instance, via a general and possibly a more subject-specific information resource).
 - Identifying keywords on the basis of the problem formulation.
 - The structuring of keywords on the basis of broad and narrow concepts.
 - The use of synonyms and translations.
 - How to expand and limit one's search in a simple way.
- The information specialist teaches, ensures dynamics, and communicates.

Break

- Lesson Three – Identification of the project group's next move and group work.
 - The group's next move should be identified from the following:
 - Project start – use the information you have
 - Pre-focus exploration - establish an overview by using easily accessible information
 - Focusing - structure and combine your information
 - Elaboration - support your focus with a number of detailed searches
 - Putting your project into perspective - search on the basis of the information you currently hold
 - The project group undertakes one of the tasks above.
 - The information specialist observes and guides.
 - Conclusion (the last 15 minutes)
 - Possibly written assessment.
 - Rounding off with a repetition of the day's objectives.

Recommended subjects of conversation:

- What kind of feedback/grade were you given?
- Do you recognise the characters and the course of events?
- If “no”, what is it that makes it unrecognisable to you?
- Ask them about their experiences with project/group work.
- Ask them about their experiences with information retrieval.
- Ask them why they were given this grade.
- Ask them about their choices.
- Ask them about the reasons for their choices.
- Ask them about their conduct when searching - “search places”, “search criteria”.
- Ask them about their information requirements.
- At what stage do you currently find yourselves?

SITUATION 3

GROUP INSTRUCTION WITH THE LIBRARY STAFF AND TEACHERS (has not been tested)

Didactic considerations

Aim

- The aim of the course is to develop the students' competences and qualifications in qualitatively assessed specialist information retrieval. The course is targeted specifically on the students' requirements.
- It is impossible to study without searching for information, but it must not be unimportant information. On the one hand, there is the library staff who are experts on information retrieval, on the other hand, the teachers of a given field of study who are specialist experts. In between is the student who needs both parties. Therefore, it would seem natural that the library and the teachers work together on the students' information competences as regards the ability to navigate the amount of information and assess its specialist quality.

Content – What parts of SWIM

- SWIM's role-playing
- Key plan of SWIM (see appendices). Here, the project process, the process of information retrieval and emotional development should be linked together.
- SWIM's information modules. These may constitute, or serve as inspiration for, vast parts of the teaching in lesson 2, and possibly lesson 3.

Frame factors

- 3 lessons
 - Lesson 1: introduction and SWIM
 - Lesson 2: discussion and instructions on information retrieval.
- A room with a number of PCs arranged so that the students can be seated in groups of three around the PCs.
- Headsets for everyone.
- A big screen and a projector.
- *or* a room/auditorium with a big screen, speakers and a projector, where SWIM can be played in plenum.
- 1 teacher.
- 1 information specialist.

Practical usage and exercises

Prior to the teaching, the teacher and the information specialist familiarise themselves with the students' thematic framework, problem formulations, or subject descriptions. This has significance for the organisation.

- Lesson One
 - A brief introduction to the course as regards objective(s), structure, and possibly practical details.
 - A brief introduction to SWIM.
 - A completion of SWIM's role-playing
 - in groups at the PCs, or in plenum on a big screen.

If SWIM is played in plenum, the teacher should make the participants choose an option. The choices may differ. Regarding their choices, the participants should reason with each other. In the end, you, as a teacher, may have to make a decision.

End the lesson with a joint discussion or commentation on the grade and feedback you were given.

- Lesson Two and Three
 - If the students have been situated around the PCs in groups, the lesson begins by examining the grade they have been given and why.
 - Via the key plan of SWIM (see appendices), the information retrieval strategy recommended in SWIM is presented and discussed.
 - In continuation of the key plan, the following is taught:
 - Specialist qualified exploratory information resources – (assistance for teachers: information modules 1 and 2)
 - Preparations to be made before retrieving information – (assistance for teachers: information module 3)
 - Specialist qualified detailed information resources – (assistance for teachers: information modules 4 and 5)
 - Requirements as regards the students' specialist information retrieval, and preparation of this retrieval.
 - Quality assessment of information resources and material.

- Exercises in:
 - how to perform an exploratory search
 - how to prepare for a detailed search
 - how to perform a detailed search
- Finish off with a summary and possibly an assessment.
- Summarise important points.

Recommended subjects of conversation:

- Ask them about their immediate experiences, recognition.
- Ask them about their own experiences with project/group work and information retrieval.
- Ask them about the grade they were given.
- Ask them why they were given this grade.
- Ask them about their choices.
- Ask them about the reasons for their choices.
- Ask them about their conduct when searching - “search places”, “search criteria”.
- Ask them about their qualitative assessment of information resources and material.
- Ask them about their information requirements.

SITUATION 4

GROUP INSTRUCTION WITH TEACHERS (has not been tested)

Didactic considerations

Aim

- That the students through reflection, discussion, and information become clarified as regards the value of their information retrieval in relation to their specific assignments and/or projects, and in relation to their specialist development in general. Also, for them to realise that the information retrieval process is an integrated part of the learning process.

Content – What parts of SWIM

- SWIM's role-playing
- Key plan of SWIM (see appendices). Here, the project process, the information retrieval process and emotional development should be linked together.
- SWIM's information modules. The modules serve as the tutor's background knowledge for communicating the content.

Frame factors

- 2 lessons
 - 1 lesson: SWIM's role-playing + follow-up
 - 1 lesson: discussion and information on subject knowledge, information retrieval, and the role of the information specialist.
- A room with a big screen, speakers and a projector, where SWIM can be played in plenum.
- 1 teacher.

Practical usage and exercises

- Lesson One
 - A brief introduction to the course as regards its objective(s), its structure, and possibly practical details.
 - A brief introduction to SWIM.
 - A completion of SWIM's role-playing in plenum on a big screen.
 - The tutor should make the participants choose an option.

- The choices may differ. As for their choices, the participants should reason with each other. In the end, you, as a teacher, may have to make a decision.
- End the lesson with a joint discussion or commentation on the grade and feedback given.
- Lesson Two
 - Via the key plan of SWIM, one obtains an overview of the structure and strategy of SWIM's role-playing.
 - The relationship between exploratory sources, detailed sources, and specialist quality is presented by the teacher (preferably with good and bad examples).
 - The specialist standard when using material/sources.
 - The role of the supervisor as a specialist helper during the working process (and perhaps a mediator!) is discussed.
 - What does the supervisor expect of his students?
 - What do the students expect of the supervisor?
 - Conclusion with a summary of what the course included as well as some of its main points.

Recommended subjects of conversation:

- Ask them about their immediate experiences, recognition of problems as regards information retrieval.
- Ask them about their own experiences with project/group work and information retrieval.
- Ask them about their criteria for assessing specialist standards.
- Ask them about their choice and use of sources.
- Ask them about the reasons for their choices.
- Ask them about their qualitative assessment of information resources and material.
- Ask them about their experience with and use of supervisors.
- Ask them about their need for a supervisor.

SITUATION 5

BOOKED TUTORIALS WITH THE LIBRARY'S INFORMATION SPECIALISTS

(used by the information specialists at Aalborg University Library)

Didactic considerations

Aim

- That the students learn to retrieve information for their specific project/assignment, but also that they learn to perceive information retrieval in a way that will be of use for them as they progress. We are dealing with an organised learning process and not primarily a service in terms of material where the information specialist takes control of the retrieval.

Content – What parts of SWIM

- SWIM's role-playing as part of the students' preparation/homework prior to a 60 minutes tutorial, or as the first part of a 90 minutes tutorial.
- SWIM's information modules. These serve as the tutor's background knowledge for and structuring of the tutorial (the fact that the information modules are composed of 4 parts makes them useful for tutorials in terms of structure: your situation, what would be a good thing to do now, what types of information are of use to me, and how do I do).
- Key plan of SWIM (see appendices) as a background for communication, and for identifying how far in the process (at what stage) the students currently are.

Frame factors

- A 60 or 90 minutes tutorial for individual students or a group.
- A location suitable for conversation.
- 1 PC with one keyboard, and two monitors so that everyone can see.
- 1 information specialist.

Practical usage and exercises

- Prior to the tutorial
 - The information specialist familiarises her/himself with the student's/students' problem formulation or subject description.
 - Possibly: The information specialist asks the student(s) to complete SWIM's role-playing.
 - This makes it possible for the students to take bearing of their progression as regards their project and their information retrieval process. Thus they can elucidate their informa-

tion requirements. This is useful knowledge to the information specialist because it enables him/her to offer assistance where it is required.

- At the same time, this will give the users advance knowledge of the problems and possibilities in terms of the information retrieval process.
 - It may also form the basis of conversations during the information tutorial.
- During the tutorial
 - During a 90 minutes tutorial, the information specialist may ask the students to complete SWIM's role-playing so that they are able to elucidate their information requirements.
 - During a 60 minutes tutorial, the information specialist may begin by using the key plan of SWIM to elucidate the information requirements of the students.
 - The perception of the information requirement should be compared to the students' problem/subject description. What does this tell us about the information requirement? How far in the process are they as regards exploratory or detailed information retrieval?
 - Subsequently, the information guidance may be based on SWIM's information modules. The modules contribute both structure and content to the tutorial. Each information module has been structured in the same way.
 - The information specialist may ask the students to listen to, or read, that or those information modules suitable for their current situation.
 - The information specialist may also choose to do a presentation based on the information modules, and instead use the modules as a tool for his organisation and teaching.

- The information tutorial should be adapted to the unique specialist requirements of the students.
- Let the students be seated at the keyboard. They are the ones who need to learn. The information specialist should not take control of the retrieval.

Recommended subjects of conversation

- Ask them what they expect from the information tutorial.
- Ask them about their own experiences with project/group work and information retrieval.
- Ask them about their choice and use of information resources/sources.
- Ask them about the reasons for their choices.
- Ask them about their information requirements.
- Using the key plan of SWIM, ask them how far they are in the process.

SITUATION 6

IMMEDIATE ASSISTANCE FOR USERS OF THE INFORMATION-DESK

Aim

- To provide the information specialist with a set of tools for elucidating the user's (information) requirements, and to offer qualified assistance when coming across library users who have not booked a tutorial. For example, at an information-isle, or elsewhere. SWIM's perception of information retrieval as a process that is parallel with the progression of a project, or an assignment, can be turned into a valuable tool for elucidating the user's information requirements, understanding his/her situation, and offering qualified assistance.

Content – What parts of SWIM

- Key plan of SWIM (see appendices). This may serve as the tutor's personal framework of comprehension, but also as a practical tool for uncovering the user's (information) requirements.
- SWIM's information modules. Once the user's information requirements have been identified, the modules can easily be used as content for immediate assistance.

Practical usage and exercises

- Conversing with or interviewing the user in the light of SWIM's tools.
 - Possibly, one could literally sit down with the user and go through the key plan of SWIM on screen or paper in order to identify information requirements.
- Using the structure and content of SWIM's information modules in order to produce qualified assistance.
 - It may be appropriate to examine all four steps as regards the structure of a given information module. Perhaps one needs to focus on one particular step, or point. That is for the information specialist to evaluate. Using the first point of the information modules, "Your situation", the user's information requirements can be identified.

Recommended subjects of conversation

- Using the key plan of SWIM, ask them how far they are in the process.
- Ask them about their information requirements.
- Ask them about their choice and use of information resources/sources.

SITUATION 7

DEVELOPMENT OF INFORMATION COMPETENCE FOR STUDENTS OF DISTANCE LEARNING

(used by “Uniengelsk”, Department 12 at Aalborg University, as part of seminar on problem-based learning, project method, and information retrieval)

Didactic considerations

Aim

- The objective is to develop the information competences of distance learners. Partly, through an understanding of problems during the project process, the group process, the learning process, and the information retrieval process. These are all aspects of the same matter. Partly, by offering a way of perceiving information retrieval and showing how it can be performed appropriately.
- It goes without saying that distance learners are in a difficult position when it comes to actually being present at the institute of education, and therefore also when it comes to making use of the libraries and their services physically. SWIM offers help in terms of information retrieval, and takes as its starting point a learning situation. This way, it links together the project work/writing of an assignment and information retrieval.

Content – What parts of SWIM

- SWIM’s role-playing.
- Key plan of SWIM (see appendices).
- SWIM’s information modules.

Frame factors

- A weekend seminar where the distance learners can meet.
- A room containing PCs with headsets, a big screen, speakers, and a projector, where SWIM can be played.
- A conference system (e.g., FirstClass) that enables the distance learners to communicate with each other and solve tasks together.
- Each distance learner should have a PC at home; a PC that fulfils the technical requirements.
- Teachers.
- 1 information specialist.

Practical usage and exercises

The seminar on information retrieval is part of a seminar on problem-based learning, project method, and information retrieval for groups of distance learners.

The seminar consists of 7 sessions, each of which introduces a new topic. Each session contains tasks and group discussions that will result in the problem formulation that the students will be working on specifically.

The actual seminar on information retrieval introduces session four, and will start off as a weekend seminar.

Programme for the seminar

- Session One: The problem

- Session Two: The project: Composition, content, and oral examination.

- Session Three: Project groups and tutors.

- Reading period.

- Weekend seminar – Project work and information retrieval
 - During the weekend seminar, the distance learners meet physically and complete, in groups, SWIM's role-playing. There will be a workshop where an information specialist will focus on information retrieval as a natural part of the project work.

- Session Four: Project work and information retrieval
 - information modules 1 and 2
 - The distance learners will be asked to listen to and read SWIM's information modules 1 and 2 at home on their own. After this, each individual will have to complete an assignment on exploratory information retrieval in relation to the topic of his/her project.

 - Using the conference system, the group will meet and attempt to isolate and limit their topic so that they can produce a preliminary formulation of the problem.

- Session Five: Towards a problem formulation.

- Session Six: Focusing.
 - information module 3
 - The distance learners will be asked to listen to and read SWIM's information module 3 at home on their own. After this, each individual should compile a list of keywords for their project, and continue working with the list from the instructions given in SWIM's information module 3, and from their current knowledge on their topic and problem formulation.

 - Using the conference system, the group should come to an agreement as regards a structured list of keywords for their project.

- Session Seven: Working plan, division of labour, the forthcoming project work
 - information module 4
 - As well as listening to a presentation on how to organise and plan the project work, the distance learners will be asked to listen to and read SWIM's information module 4 at home on their own.

 - Subsequently, they must perform detailed information searches in order to elaborate their problem fields. Tasks must be delegated and a time schedule for the project must be made.

Typical comments on SWIM

Below you will find questions or comments that we have encountered when using SWIM. These are questions that one ought to consider thoroughly before teaching with SWIM. On the one hand, the questions become a tool for clarifying the teacher's own views of SWIM. On the other hand, they become a preparatory tool for handling possible objections. Finally, the questions may serve as a point of departure for discussions between the participants, or between the participants and the teacher.

COMMENTS

1. All the formalities as regards the composition of a project/the assignment, numbers of pages, etc. have already been dealt with before we start. Therefore, we do not choose that option in the first scene – we thought that that aspect had already been dealt with.

Answer: By “Start-up/project start” (scene one) in the role-playing, we mean “right from the start”. That is, at a very early stage in the process. By focusing on the fact that there is also an information requirement at this stage, we expand the information concept to something else and something broader than merely picking up a book at the library.

2. The fact that I do not know what the project Thor, Mette, and Anna (and I) are working on is about has a disruptive effect on my choices.
3. The choices one makes depend upon one's topic. I find it that I lack information about their (our) project.

Answer: We believe that one is capable of abstracting oneself from the fact that one is not familiar with Thor, Anna and Mette's topic and specific problem formulation. We believe that often one automatically fills in the “blank spaces” with one's own project/assignment experiences as regards title, problem formulation, and content.

4. This is not how it is done within our field of study.
5. We do not work in groups.
6. We do not write projects, but assignments instead.
7. We do not begin at the same stage as the characters of the role-playing.

Answer: According to people in the advertising field, if you attempt to reach everyone, you end up reaching no one at all. We have attempted to reach a broad number of students by, for example, not mentioning a specific field of study, topic...But we are unable to reach everyone. Here, it will be the teacher's responsibility to focus on the parallel phases between project and assignment, emotions and information retrieval.

Answer: We believe that the process of information retrieval as constituted by the phases (initiation, exploration, focusing, elaboration, putting into perspective) is relevant regardless of your topic, and whether you are writing a long-term project, or a seven-day paper. Regardless of the format of one's work, it is the same information requirements and information problems that are relevant. The phases, however, can easily vary in terms of length and occurrence.

Some may find it that their point of departure is different from the one SWIM proposes. Nevertheless, we believe that there is a need for exploration before a detailed information retrieval can be performed.

Our assumptions are founded on Kuhlthau's research. Kuhlthau bases her model and conclusions on examinations of students working on assignments, not projects.

What constitutes exploratory and detailed types of information resources/sources respectively, is up to the individual teacher to assess in relation to the participants' standards and requirements.

-
8. In our group, we would want delegate, for example, all three tasks presented in the first scene. We would not choose only one!

Answer: SWIM's role-playing is presented as linear. Serving as a model, it is simplified and caricatured. It may be that the linear process presented is repeated during a project, since one is dealing with numerous subjects in one's project. However, this does not change the order of the phases constituting the information retrieval process.



APPENDICES - TABLES

Profile of the characters' information competence

SWIM character	Traits	Situation	Problem	Working method	Focus	Type	Skill (Qvortrup)	Learning level (Bateson)	Solution level
Anna	Grazer – Gnu	Routine	Known	Known	Technique	Artisan	Qualifications	Learning Learning 1	Producing solutions
Mette P.	Hunter – Lion	Problem-solving	Known	Unknown	Process	Consultant	Competences	Learning how to learn Learning 2	Utilising methods
Thor	Browser – Giraffe	Problem-orientated	Unknown	Unknown	Product	Facilitator	Creativity	Re-learning Learning 3	Creating new solutions

The results of the role-playing

	Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
Anna	0	-	0	+	-
Thor	0	+	-	-	+
Mette	+	0	+	0	0

+ = most appropriate choice

0 = appropriate choice

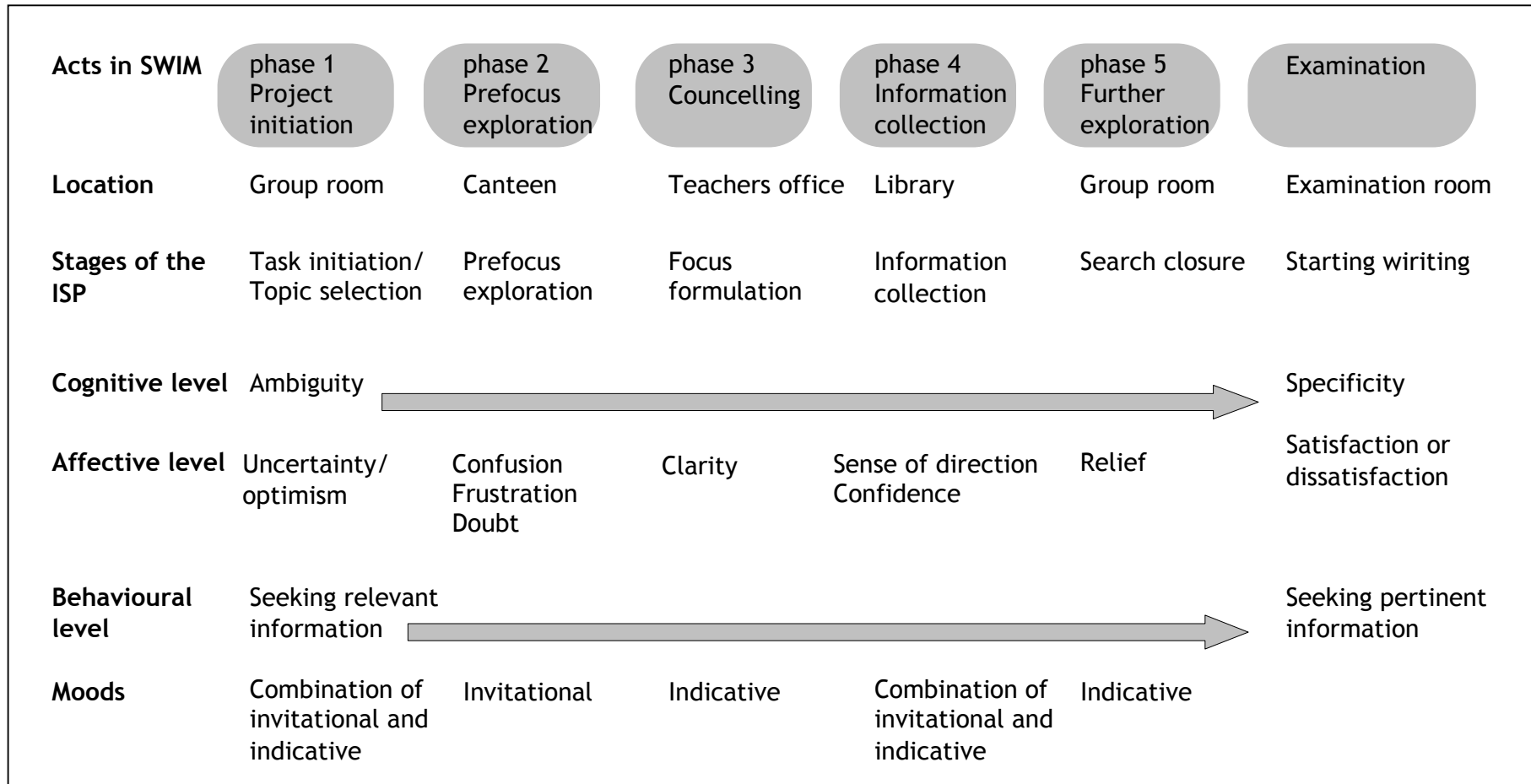
- = inappropriate choice

+ = towards 11

0 = towards 9

- = towards 6

A SWIM-modified version of Kuhlthau's model



Key plan of SWIM

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	
Scenarios in SWIM	Initiation in the group room	Meeting in the canteen	Meeting with supervisor	At the library	Finishing the project	Examination
Phases of the project work and information retrieval	Project start and choice of topic	Exploration	Focusing	Elaboration	Putting into perspective	
Information retrieval strategy	Use the information you have	Establish an overview by using easily accessible information	Structure and combine your information	Support your focus with a number of detailed searches	Search on the basis of information you currently hold	
Experiences Feelings	From uncertainty to optimism	Confusion, frustration, and doubt	Clarity	Certainty of where one is going	Relief	
Information modules containing further information	Information module 1	Information module 2	Information module 3	Information module 4	Information module 5	

The structure and contents of SWIM

Kuhlthau – ISP	Topic selection	Pre-focus exploration	Focus formulation	Information collection	Search closure	Writing
The role-playing	1	2	3	4	5	6
Scenarios	Meeting in the group room	Group meeting in the canteen	Meeting with supervisor	At the library	Finishing the project	Exam
Choices	<p>Anna: 0 Starting with Anna's books would be most appropriate</p> <p>Thor: 0 Discussing the problems would be most appropriate</p> <p>Mette: + Sorting out the practical details would be most appropriate</p>	<p>Anna: - We should determine the keywords</p> <p>Thor: + We should try the Internet</p> <p>Mette: 0 We should go to the library</p>	<p>Anna: 0 We should get hold of some encyclopaedias</p> <p>Thor: - We should use Søren's references</p> <p>Mette: + We should prioritise and combine the keywords</p>	<p>Anna: + We should search in different databases</p> <p>Thor: - We should use the Internet</p> <p>Mette: 0 We should skim the shelves with books on our topic</p>	<p>Anna: - I think we should search in the library database</p> <p>Thor: + I think we should use that article</p> <p>Mette: 0 I think we should search in that article database</p>	
Info. modules	1	2	3	4	5	
Phases	Project start	Exploration	Focusing	Elaboration	Putting into perspective	
Strategy	Use the information you have	Establish an overview by using easily accessible information	Structure and combine your information	Support your focus with a number of detailed searches	Search on the basis of the knowledge you currently hold	
Your situation	<p>You have now chosen a topic for your project which is based on a combination of the framework of the term and your own specialist interest. Perhaps a certain lecture, or a tutor has inspired you. Or maybe your inspiration came from an article in the Sunday paper, or a news program on TV.</p> <p>In short, you have taken an interest in a topic that falls within the specified framework, and you realise that you require information.</p> <p>Because you are facing unknown territory, you may feel somewhat uncertain at the beginning of this phase. Preferably, this feeling is replaced by optimism as you establish some frames.</p>	<p>Probably your first preliminary formulation of the problem gave you a sense of direction and optimism. Now, however, it is possible that you doubt again where your focus should lie. At times, you may not even be certain that you are going in the right direction.</p> <p>Is the problem relevant? Am I asking the right question(s)? What material would be essential to include, analyse, and discuss in order for me to solve the problem in a professional well-qualified manner?</p> <p>You are alternating between experiencing perspicacity and confusion. You lack an overview and therefore you are unable to focus!</p>	<p>You now have a clearer notion of the problems within your field of study, as well as an idea of where you require information in relation to your problem.</p> <p>It is now easier for you to define those areas, subject matters, or part-subjects that you require more information on. You are currently in a situation where you need to pick some key concepts, and others you must choose to do without. This decision should be based on what you find relevant in relation to the problem.</p> <p>The overview you now have will give you a sense of clarity. The direction of the project is clear to you.</p>	<p>Currently, you have a clear idea of where your knowledge requirements lie in order for you to continue working with your problem. You have adjusted and specified your problem formulation. Because the problem formulation is now more precise, it gives you an overview of the central problem fields and designates keywords that you can use when performing a search.</p> <p>You now need to elaborate your problem fields. Therefore you need to undertake a detailed information retrieval.</p> <p>It is clear to you that you are steering the project in the right direction, and you have a pretty good idea of how much time and effort it requires to put together the project.</p>	<p>Through extensive information retrieval and thorough analytical work, you now hold a vast amount of information within your field of study. In other words, you have become an expert!</p> <p>There is a lot of information lying at your feet. For example, articles or books that you read at an earlier stage of the process. These you found interesting yet chose to do without. Possibly secondary or co-ordinated problems occurred during the process but were never examined in full; those you may be able to use now.</p>	

Info. modules	1	2	3	4	5	
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What would be a good thing to do now?	<p>In order for you to perform a qualified search for relevant literature and other types of information, you will need a problem formulation to start from. Therefore, you need to make some considerations in terms of your topic and also find a focus for your project.</p> <p>In doing so, you establish an overview of the frames of the project, topic, the timescale, and limits. In addition, you become clarified as regards your concepts.</p>	<p>An appropriate strategy during this phase of the process would be for you to familiarise yourself within the framework formed by your preliminary problem formulation.</p> <p>Therefore, it would be profitable for you to acquire material that is easy for you to take in and understand. The most important thing is that you become more clarified regarding your topic and your problem.</p>	<p>It is important that you make some preparations before undertaking a search.</p> <p>Establish a list of key concepts that are central to your problem. This list also constitutes keywords that are useful when retrieving more specific information. The key concepts should consist of topics, persons, or concepts that you need to obtain more knowledge on in order for you to be able to write the project.</p> <p>The way in which you structure your key concepts should depend on how broad or narrow a field of knowledge they cover. Possibly it should also depend on what is important in terms of your problem.</p> <p>Combine the key concepts in different ways. This will be a useful device for narrowing or broadening your search in databases – depending on what is necessary in order for you to find relevant material to choose from.</p>	<p>In order for you to find information most relevant to your problem, it will be worthwhile spending some time locating the right information resources. For instance, different subject-specific databases.</p> <p>In doing so, you avoid wasting too much time searching through information resources that do not contain the particular topic or type of material that you are looking for.</p> <p>Use your keywords to assess whether a given subject-specific information resource is relevant when it comes to your problem.</p>	<p>Make use of the material you have at hand. Basically, you should refrain from studying new and difficult material and from undertaking a broad information retrieval.</p> <p>You currently have a broad and extensive basis of evaluation when it comes to your subject matter. Therefore you are capable of dealing with other problematic on the basis of your project.</p> <p>Look through your material for interesting and relevant references that will be useful. Consider whether you have come across material that were relevant but in connection with a different problem.</p>	

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What type of information is of use to me?	<p>Make use of the information you already have, and the knowledge you have acquired during your studies so far. The resources that you can draw upon in terms of information are at hand. For example, these kinds of resources could be:</p> <ul style="list-style-type: none"> ▪ Your personal knowledge ▪ The formal guidelines for the exposition of the paper. ▪ Sources of inspiration such as: lectures, course literature, media, fields of interest, etc. ▪ Discussions within your project group. 	<p>There are different types of easily accessible information available that may help providing you with an overview of your topic.</p> <p>Using the Internet will be advantageous. Here, you will instantly be able to find different types of texts that can shed light on your field of study in a concise manner.</p> <p>Using newspaper articles is also a good idea. Often such articles are characterised by their summarized form and do not require any profound prior knowledge.</p> <p>Another way of creating an overview is by looking for textbooks, primers, or introductions.</p> <p>Another option is using encyclopaedia and reference books to look up an appropriate survey. This will provide you with an easy approach to your topic.</p> <p>While reading your material, you should take notes of ideas and approaches to the topic. This way, you will draw closer to a specification of your topic.</p>	<p>The problem formulation is the first place to look to when establishing the key concepts. Since the problem formulation is where you describe the subject matter and related aspects that have your interest, this is where you will find the most important words in terms of your topic.</p> <p>In your curriculum, you will be able to find much relevant information. Here, the description of the aim and content of your specific term will be valuable. It gives you the opportunity to choose some important key concepts that will be useful when retrieving information.</p> <p>You have also performed an exploratory search. You are likely to have found material from which you were able to derive some key concepts.</p>	<p>If you require basic knowledge on a given theory within a research area, or on a certain branch of knowledge, it will be a good idea to search for books.</p> <p>If you need to obtain information on the latest research within a specific field, searching for periodical articles will be appropriate.</p> <p>If you are searching for information on a very specific topic, adequate descriptions can often be found in reports.</p> <p>It may also be necessary for you to investigate whether the authorities have issued certain provisions such as legislation, announcements, etc.</p> <p>Another possibility is statistics which are often useful for shedding light on the real facts in relation to your problem.</p> <p>You might also investigate whether there are any technical specifications, for example, current standards that need to be incorporated into the problem.</p>	<p>All kinds of information are useful. You just need something that contributes something new compared to the rest of the project report.</p> <p>Often you can use the material that you initially chose to do without, although it was both interesting and relevant.</p> <p>It would also be natural to use references to articles, key literature, or topics from the material already used. It could be something that deals with your problem from a different angle or further elaborates it. Alternatively, it could be something that contrasts your analysis, interpretation, or conclusion.</p> <p>Current news of scientific or journalistic nature within your problem field is always interesting.</p>	

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<p>How do you do?</p> <p>How do you make use of the relevant information resources?</p>	<p>It is essential to bear in mind that the relevant information resources are already present within you. There are various methods that you can use in order for you to make progress with the formulation of your problem.</p> <ul style="list-style-type: none"> Establish the formal guidelines for the project. How is the thematic framework defined, what are the proportions of the project, how much time do you have at your disposal, and are there any specific requirements in terms of the content? Ask yourself why you find this topic interesting and put it into writing. Do a brainstorming on the topic, or work out a mindmap. Consider the specialist relevance of your choices. Consider the nature of the project or the assignment: Is it theoretical, empirical, or perhaps something entirely different? Formulate a provisional problem. 	<p>When searching for relevant information on the Internet, you can choose to use search engines, for example, Google or AllTheWeb. They will search for web documents.</p> <p>You can also choose to search in subject indices such as Yahoo and BUBL. These are categorised in terms of subject areas and will search for websites.</p> <p>Google Simple, well-arranged, fast and VERY big!</p> <p>AllTheWeb Easy to use – Useful for specific searches.</p> <p>BUBL Link 5:15 Quality assessed academic information resources.</p> <p>InfoMedia Good for current information and establishing an instant overview.</p>	<p>Once you have established your key concepts, you are in possession of a somewhat unstructured list.</p> <p>To make your list perfect, it is advisable that you structure the key concepts by dividing the words into groups: words that cover a broad field of knowledge, and words that cover a narrow field of knowledge.</p> <p><i>This way you are able to control your search either by broadening it, or by narrowing it. Structuring, however, is often an individual evaluation and, therefore, a list can be structured in numerous ways.</i></p> <p><i>You also need to supplement your list of keywords with synonyms or related concepts, as well as translations of some of your key concepts into other languages.</i></p>	<p>Once you have decided to use a certain information resource, it will be a good idea to investigate whether it fulfils your requirements as regards topic, type of material, standards, and degree of detail. Checking the information resource for the following will be advantageous:</p> <ul style="list-style-type: none"> The degree of difficulty – is it scientific material? Subject areas – does the information resource contain enough material on the subject? Types of information – does the information resource contain the type of information you require? Period of time – does the information resource cover the period of time that you require? Language requirements – does the resource contain material in languages that you are familiar with? Updating – is the latest material included in the information resource? <p>The information resources could be DADS, MLA, and ABI/Inform.</p>	<p>The most important resources are your project report, the material you have been working with throughout the project period, and yourself.</p> <p>In order for you to get hold of the literature referred to in one of the exploratory or problematising articles or books you have used, you need to be able to read a reference. Hereafter, it will be natural to search in the database of your own library for the material.</p> <p>Current news within your problem field, you will find in the news media.</p>	