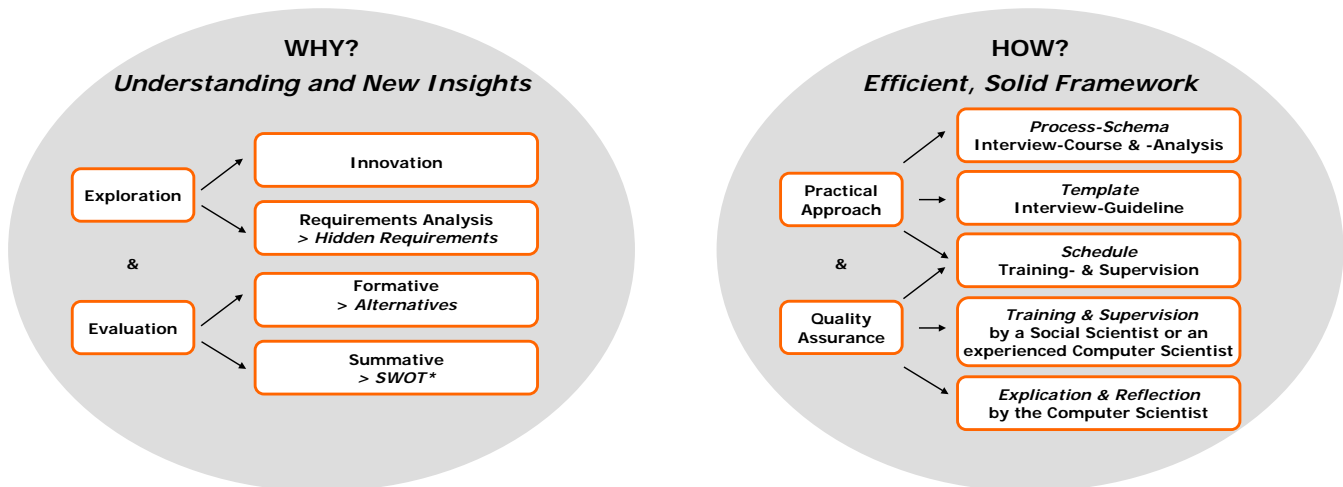


# Streamlining Qualitative Research Methods for Medical Informatics – A Methodological Approach

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## Methods

### Process-Schema Interview-Course & -Analysis

- Identification of Interviewees**
  - Analysis
  - Selection
- Scheduling**
  - Purpose
  - Appointment
  - Time
  - Place
  - Confidentiality
- Preparation**
  - Explication of the Mental Model
  - Guideline
  - Materials
- Interview**
  - Introduction
  - Performance
  - Parting
- Field-Notes**
  - Course of the Interview
  - Additional Information
  - Impression
  - New Ideas and Insights
- Documentation**
  - Transcription of the record: by a typist
  - Transcription of the field notes: by the researcher
- Analysis**
  - Computer supported
  - Iterative

### Template Interview-Guideline

Period	Aspects
Warming-up	<ul style="list-style-type: none"> <li>The organization (vision, goal, structure, business activities)</li> <li>The interviewee (professional background, tasks, work)</li> <li>Terminological clarification</li> </ul>
Exploration of present aspects	<ul style="list-style-type: none"> <li>Relevance</li> <li>IT and other tools</li> <li>Context of work (colleagues)</li> <li>Preconditions, limitations, problems</li> </ul>
Exploration of future aspects	<ul style="list-style-type: none"> <li>Expectations and needs</li> <li>Wishes on new tools and instruments</li> <li>Additional Ideas</li> </ul>
Finish	<ul style="list-style-type: none"> <li>Summarization (by the interviewer)</li> <li>Feedback on completeness</li> <li>Benefit for the interviewee</li> <li>Acknowledgement and leave-taking</li> </ul>

### Schedule Training & Supervision

- Topic Identification**
  - Research Question
  - Field Description
  - Goal
- Introduction to the Method**
  - Lecture
  - Literature (self-study)
  - Individual Introduction: how to perform and how to analyse
- Mental Model & Personal Experience**
  - Explication
  - Documentation
  - Reflection
- Interview-Guideline**
  - Design
  - Discussion, Reflection, Revision
- Data Acquisition & Analysis**
  - Conducting the Interview
  - Documentation
  - Discussion, Reflection, Iteration
- Report**
  - Design
  - Documentation
  - Discussion, Reflection, Revision

**Training-Effort**  
2 hours  
12-16 hours  
2 plus 2 hours

## Results (Oct 2004 – Aug 2006)

So far seventeen graduates and postgraduates in medical informatics used semi-structured interviews. The studies covered areas like knowledge management in medical research, hospital management, web-based information platforms and web-based learning. The training lasted about six hours per trainee.

Using QRM was considered a structured and comprehensible approach: "By doing semi-structured interviews it is easy for me to get a whole picture with many details in a short time." - "The materials facilitate the profound discussion with colleagues and supervisors." - "The first step of the requirements analysis - to know the user, his situation his needs and his ideas - is now more structured." - "The perspective of the computer scientist changes from IT-centred to user-centred."

Context	Exploration		Evaluation		No of Studies	No of Trainees
	Innovation	RA	Formative	Summative		
Research Project	3	2	1		6	10
Diploma Thesis		4	2		5	5
PhD Thesis			1	2	2	2
<b>Total</b>	<b>3</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>13</b>	<b>17</b>

## Conclusion

QRM in medical informatics gained more and more attention during the last decades [1,2]. Social sciences offer the methods and the tools to perform qualitative research. The results of such qualitative studies can be applied to exploration, requirements analysis, both formative and summative evaluation and usability engineering. Computer scientists ask for appropriate training and clear and comprehensible guidance in using these methods [3]. The development of the framework for semi-structured interviews in medical informatics supported an effective and efficient adoption of QRM. To assure a high quality of scientific work the researcher has to select an appropriate QRM and to use at least two different methods ("triangulation") [4]. He can apply either several qualitative or a combination of qualitative and quantitative research methods. One of the colleagues or one of the supervisors ("neutral experts") should be adept in QRM and the scope of the methodology in order to be able to give useful feedback during the whole research. We are extending the use of QRM in medical informatics to other interview techniques such as panel groups, focus-group interviews and natural groups and observations.

## References

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\* SWOT: Strengths, Weaknesses, Opportunities, Threats