A Comparative User Evaluation on Visual Ontology Modeling using Node-Link Diagrams

Letter of Consent

Dear Participant,

I invite you to participate in a research study entitled: *A Comparative Study on Modelling Ontologies using Node-Link Visualizations*. I am currently working as a Software Engineer/Researcher in the Enterprise Information Department of Fraunhofer IAIS, and I am in the process of writing a research paper. The purpose of the research is to determine: *How can modelling of small ontologies effect the performance of a user using node-link visualization*?

The enclosed questionnaire and task list has been designed to collect information on: *usability measurement and evaluation for WebVowl*.

Your participation in this research project is completely voluntary. You may decline altogether, or leave blank any questions you don't wish to answer. Your responses will remain confidential and anonymous. Data from this research will be kept under lock and key and reported only as a collective combined total. No one other than the researchers will know your individual answers to this questionnaire.

If you agree to participate in this project, please perform the tasks as mentioned in the enclosed evaluation interview for which your time will be recorded to complete the tasks and answer the questions on the questionnaire as best you can. It should take approximately **45 minutes** to complete.

If you have any questions about this project, feel free to contact Muhammad Rohan Ali Asmat (Software Engineer/Researcher) at
Muhammad.rohan.ali.asmat@iais.fraunhofer.de.

Thank you for your assistance in this important endeavor.

Sincerely yours,
Muhammad Rohan Ali Asmat

Name: _____

Age: _____

Profession: _____

Experience in Ontology Modelling:

O No Experience   O Beginner   O Expert

Experience with the WebVOWL Ontology Modeller:

O Beginner   O Mediocre   O Expert

Experience with the Protégé Ontology Modeller:

O Beginner   O Mediocre   O Expert

Are you a color blind?

O Yes   O No

Do you have any sort of visual of physical impairment, please state below:

_____

Note: In this course of usability testing, you will be evaluated over two different tools. The first half of usability testing would take you through tasks and questionnaire related to a ontology modeller tool and the other half would take you through tasks and questionnaire related to another tool.

Usability Evaluation of WebVOWL

For usability evaluation of *WebVOWL*, you will have to go through two sets of rounds. In the first round that is Evaluation Interview round, you will be provided with a set of tasks that you will have to perform as instructed for which you will be recorded and timed. In the second round that is Evaluation Questionnaire round you will have to fill up the questionnaire.

Evaluation Interview

In this section you will be required to perform certain tasks for which you will be recorded.The instructions are given below, and each task is described in detail which you would have to perform based on the instructions given.

Instructions

1. For the concepts presented in the table below, use your understanding to model the Ontology using **WebVOWL**. The WebVOWL interface is opened in browser tab one.

Child	childs birthplace	has*
Family Tree	Female	Mother
Grandmother	Male	gives birth
Father	Person	person name
is a*		

Note: The concepts with (*) can be used multiple times.

2. Please answer the following questions by ticking one of the choices:

Q1. Overall, I am satisfied with the ease of completing the tasks in this scenario:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q2. Overall, I am satisfied with the amount of time it took to complete the tasks in this scenario:
1. O (Strongly diagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q3. Overall, I am satisfied with the support information (online-line help, messages, documentation) when completing the tasks:
1. O (Strongly diagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

3. Please **close the browser tab** on your computer screen and highlight the concepts that you think you modelled previously from the following table:

Child	Grandfather	Father	family members
Grandson	childs birthplace	has kids	gives birth
Person	Sister	has	time of birth
is a	Male	Aunt	Family Tree
Grandmother	Daughter	Female	Cousin
Son	Mother	Uncle	person name

Evaluation Questionnaire

Please rate the usability of the system using the following 19 questions:

Q1. Overall, I am satisfied with how easy it is to use this system:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q2. It was simple to use this system:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q3. I can effectively complete my work using this system:

1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q4. I am able to complete my work quickly using this system:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q5. I am able to efficiently complete my work using this system:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q6. I feel comfortable using this system:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q7. It was easy to learn to use this system:
1. O (Strongly disagree)
2. O
3. O

4. O
5. O
6. O
7. O (Strongly Agree)

Q8. I believe I became productive quickly using this system:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q9. The system gives error messages that clearly tell me how to fix problems:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q10. Whenever I make a mistake using the system, I recover easily and quickly:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q11. The information (such as online help, on-screen messages, and other documentation) provided with this system is clear:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O

6. O

7. O (Strongly Agree)

Q12. It is easy to find the information I needed:

1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q13. The information provided for the system is easy to understand:

1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q14. The information is effective in helping me complete the tasks and scenarios:

1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q15. The organization of information on the system screens is clear:

1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q16. The interface of this system is pleasant:

1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q17. I like using the interface of this system:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q18. This system has all the functions and capabilities I expect it to have:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q19. Overall, I am satisfied with this system:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Usability Evaluation of Protégé

For usability evaluation of the *Protégé*, you will have to go through two sets of rounds. In the first round that is Evaluation Interview round, you will be provided with set of tasks that you will have to perform as instructed for which you will be recorded and timed. In the second round that is Evaluation Questionnaire round you will have to fill up the questionnaire.

Evaluation Interview

In this section you will be required to perform certain tasks for which you will be recorded.The instructions are given below and each task is described in detail which you would have to perform based on the instructions given.

Instructions

1. For the concepts presented in the table above, use your understanding to model the Ontology using **Protégé**. The Protégé interface is opened in desktop environment.

Vehicle	Bus	model name
has*	Manufacturer	City Traffic
Public Vehicle	Car	manufactured by
Private Vehicle	Train	manufacturing date
is a*		

Note: The concepts with (*) can be used multiple times.

2. Please answer the following questions by ticking one of the choices:

Q1. Overall, I am satisfied with the ease of completing the tasks in this scenario:
   1. O (Strongly disagree)
   2. O
   3. O
   4. O
   5. O
   6. O
   7. O (Strongly Agree)

Q2. Overall, I am satisfied with the amount of time it took to complete the tasks in this scenario:
   1. O (Strongly disagree)
   2. O
   3. O
   4. O
   5. O
   6. O
   7. O (Strongly Agree)

Q3. Overall, I am satisfied with the support information (online-line help, messages, documentation) when completing the tasks:
   1. O (Strongly disagree)
   2. O
   3. O
   4. O
   5. O
   6. O
   7. O (Strongly Agree)

3. Please **hide the Protege window** on your computer screen and highlight the concepts that you think you modelled previously from the following table:

Vehicle	Motor Bike	Private Vehicle	Transport
Jeep	Bus	car name	Manufactured by
is a	Brand name	model name	BMW
Wagon	Car	Suzuki	City Traffic
Public Vehicle	Horsepower	Manufacturer	Intercity Express
manufacturing date	has	Traffic Signals	Train

Evaluation Questionnaire
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3. O
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Q3. I can effectively complete my work using this system:
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2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q4. I am able to complete my work quickly using this system:
1. O (Strongly disagree)
2. O
3. O
4. O
5. O
6. O
7. O (Strongly Agree)

Q5. I am able to efficiently complete my work using this system:
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3. O
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5. O
6. O
7. O (Strongly Agree)

Q6. I feel comfortable using this system:
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Q7. It was easy to learn to use this system:
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