

Online learning support through peer tutoring



Peter Sloep
San Sebastian, February 25th, 2006

Overview

- Inventory the problem: two surveys
- Solution: explored in current OUNL project
- Future work

Identification of critical time-consuming student support activities in e-learning

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Open University of The Netherlands

Higher education staff involved in e-learning often struggle with organising their student support activities. To a large extent this is due to the high workload involved with such activities. We distinguish support related to learning content, learning processes and student products. At two different educational institutions, surveys were conducted to identify the most critical support activities, using the Nominal Group Method. The results are discussed and brought to bear on the distinction between content-related, process-related and product-related support activities.

Problem

- Two target groups
 - educational experts with Open University (online)
 - teachers with Fontys teacher education school (f2f and blended)
- Two questions
 - which support activities are taxing?
 - which support activities deserve attention, but receive too little of it because they are time-consuming?

Method

- **Nominal group approach**
 - answer the questions, post them on a blackboard, discuss them, add new questions, rephrase questions
 - score the questions for relevance
- **Categorisation by experts**
 - problems with the subject matter and content
 - problems with the learning process
 - problems with the assessment

Results (collated, deemed relevant)

- Plagiarism in student paper
- Feedback to students about progress
- Not having to answer the same question twice
- Easily accessible and well-structured student portfolios

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process

Results (collated, deemed irrelevant)

- Coaching new teachers
- Setting-up homogeneous student groups
- Tracking complex group dynamics
- Scoring papers and assignments
- Helping to write papers
- Helping to develop metacognitive skills

Results

	OUNL	Fontys	total
subject matter	7	1	8
process	20	8	28
product	5	2	7

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important

Conclusion

- Providing process support is seen as important
- Focus:
 - 'not having to answer the same question twice'
 - through *peer support* and *peer learning*

ENHANCING SOCIAL INTERACTION AND SPREADING TUTOR RESPONSIBILITIES IN BOTTOM-UP ORGANIZED LEARNING NETWORKS

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ABSTRACT

A Learning Network is an ensemble of individual users, institutions and learning resources which are mutually connected through and supported by information and communication technologies. Learning Networks are particularly attractive to self-directed learners, who themselves decide on their learning program as well as on the timing, pace and place of their studies. Such learners may easily become isolated, which is detrimental to their studies. Supporting them is difficult and, if done properly, may rapidly lead to staff overload. This paper discusses of *ad hoc, transient communities* as a means of tackling both problems. It is argued that such communities are well poised to enhance the sociability of a Learning Network and increase learning effectiveness.

Essence of the approach

- analyse student questions with Latent Semantic Analysis (LSA)
- find suitable peer tutors
- set up a wiki and create an *ad hoc, transient* community
- seed the wiki with proto-answers that the LS analysis has found
- store the results (log files, student portfolio, FAQ) for later use

LNLU

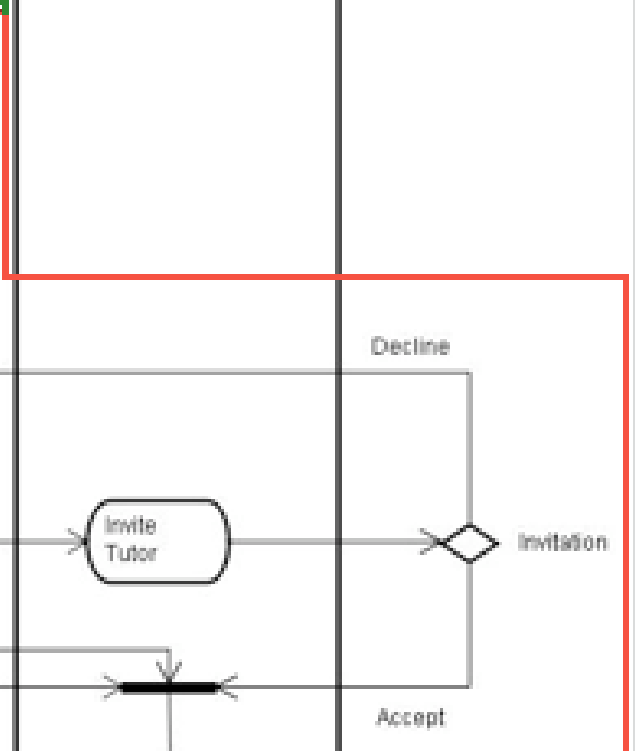
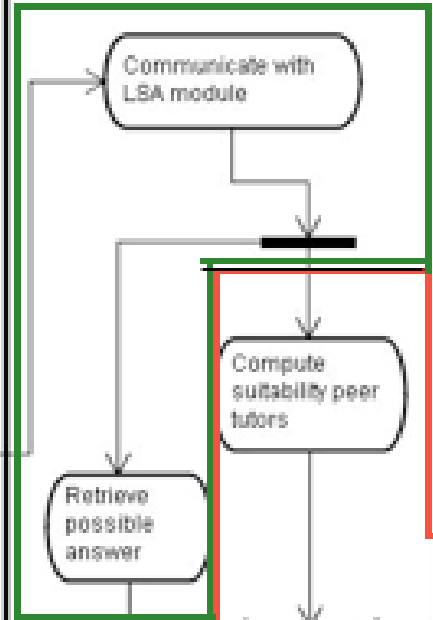
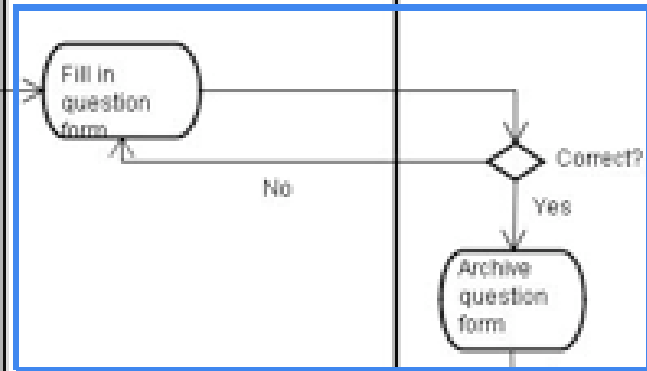
Tutee

Agent Tutee

Agent Matchmaker

Agent Tutor

Tutor



Moodle



LSA module



Tutor locator

LNLU

Tutee

Agent Tutee

Agent Matchmaker

Agent Tutor

Tutor

ask question

Fill in question form

No

Correct?

Yes

Archive question form

Communicate with LSA module

Compute suitability peer tutors

Retrieve possible answer

Invite most suitable Tutors

invite Tutor

Decline

invitation

Accept



Moodle



LSA module



Tutor locator

Question

Ask your question

What is the difference between heat and temperature? If it gets warmer, the temperature gets higher too! But apparently the same amount of heat can lead to different temperature increases. How come?

Cancel

Submit

LNLU

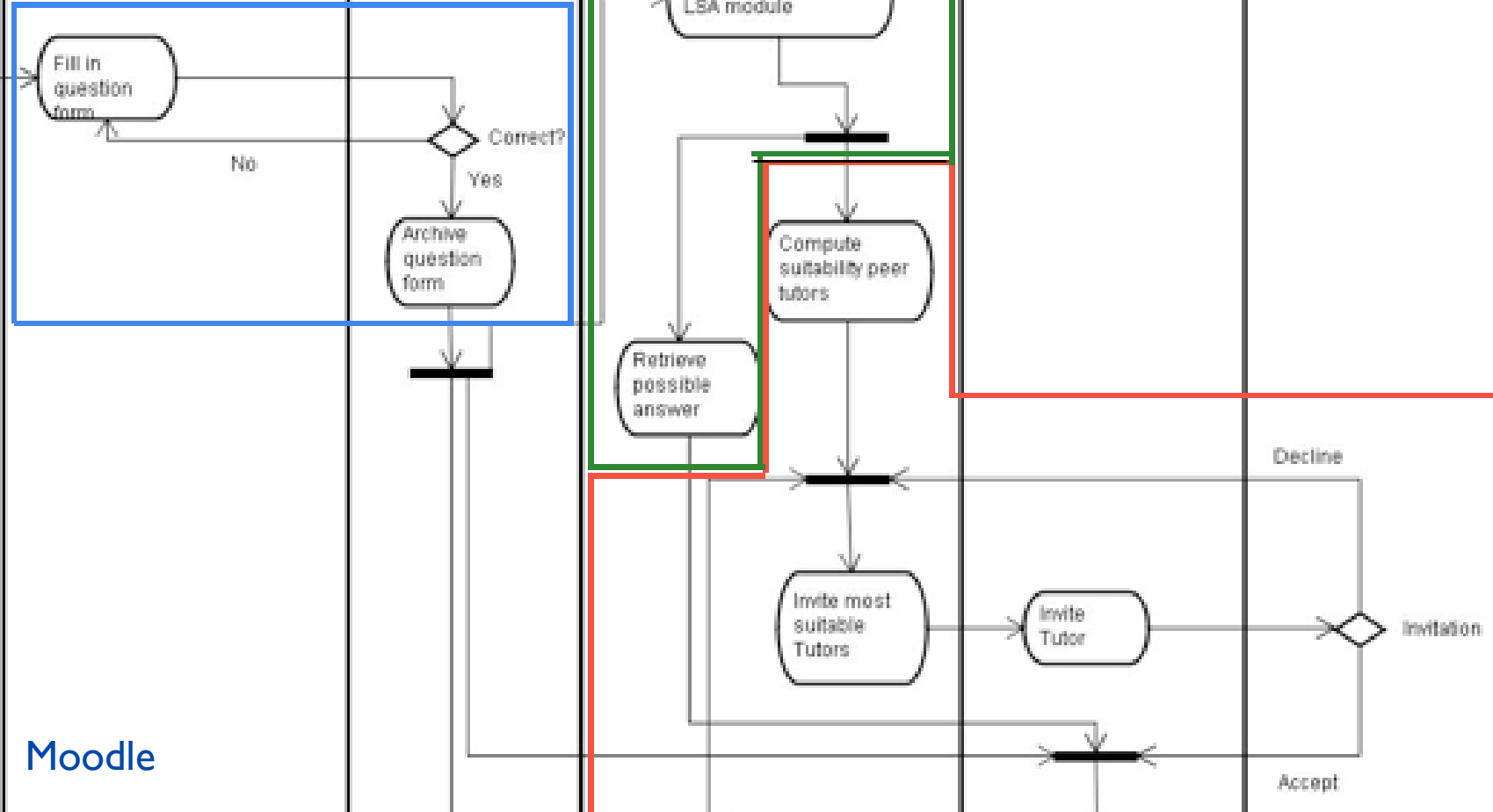
Tutee

Agent Tutee

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LNLU

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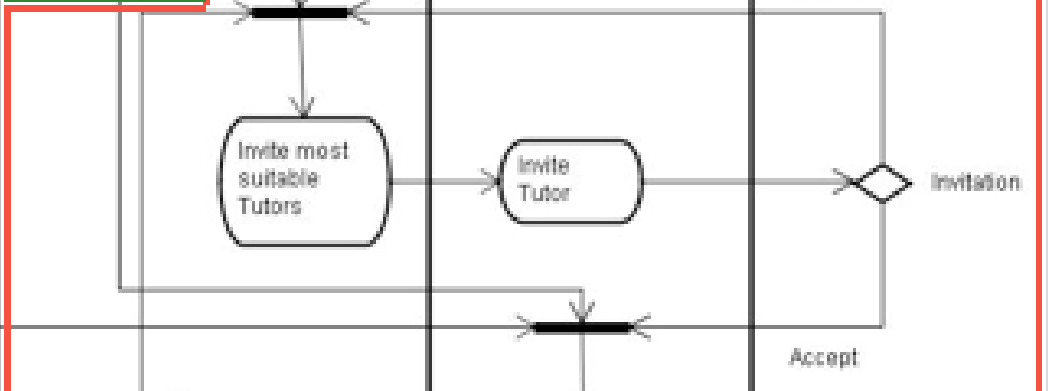
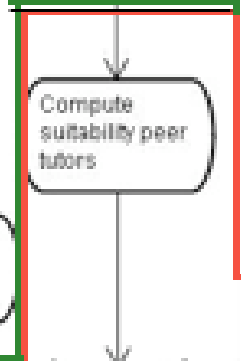
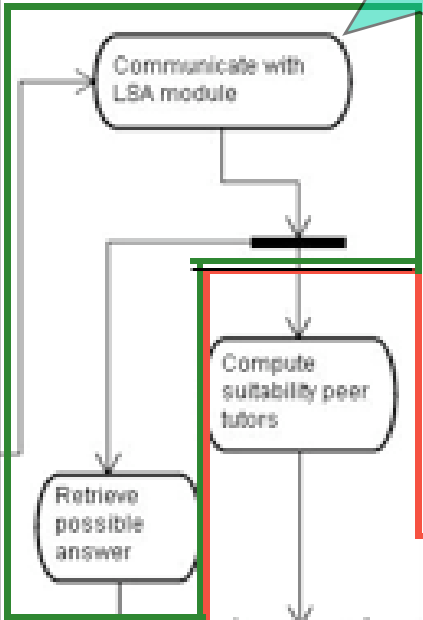
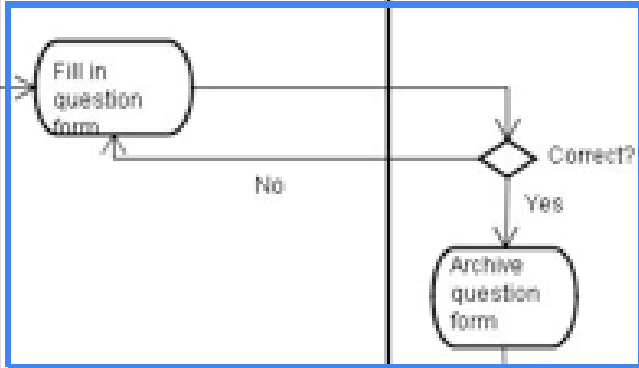
Agent Tutee

Agent Matchmaker

Agent Tutor

Tutor

compute similarity



Moodle



LSA module

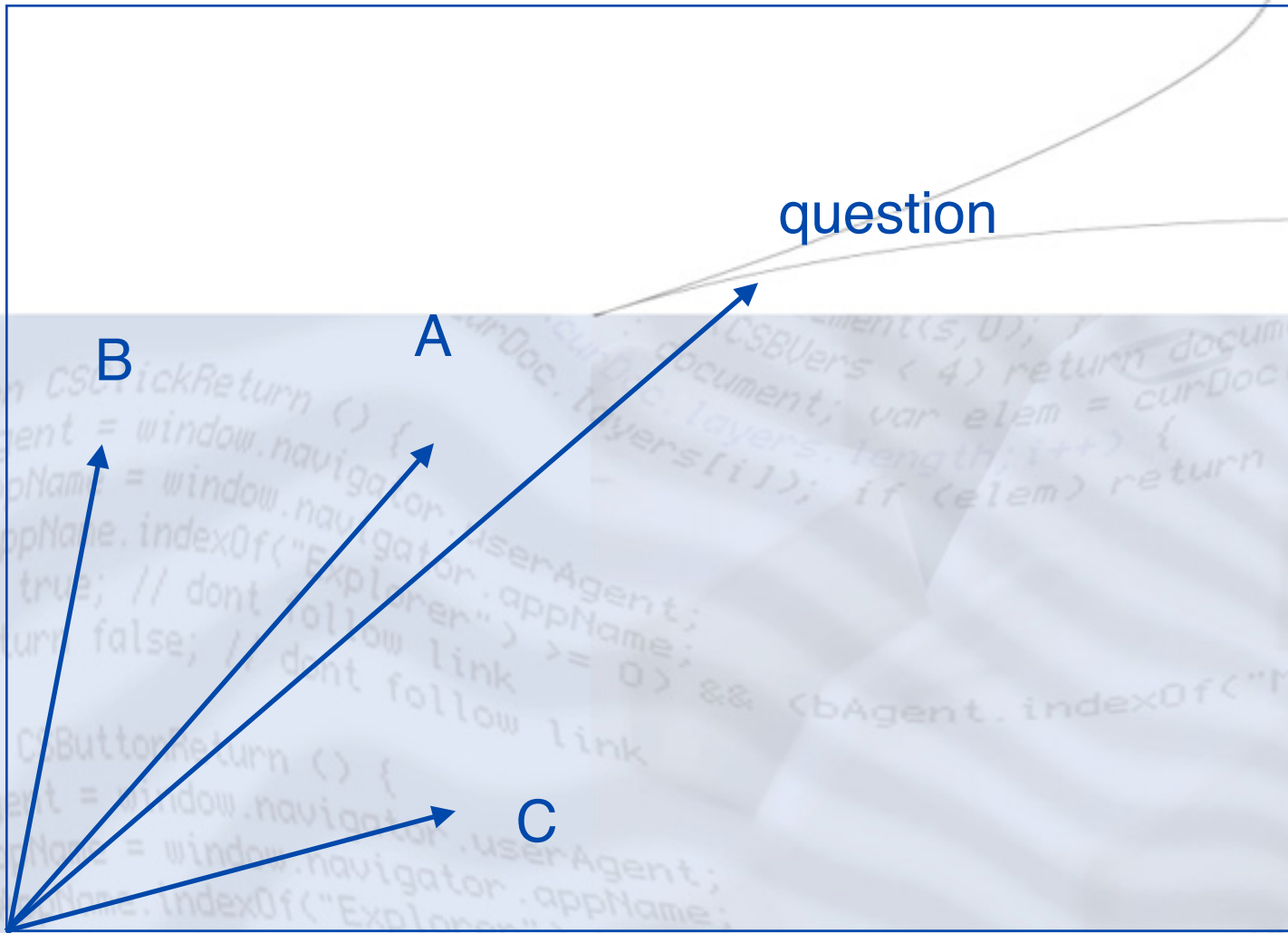


Tutor locator

documents

	1	2	3			j			m
<i>ape</i>	5	11	0						
<i>left</i>	1	2	33						
<i>the</i>	110	156	144						
<i>kind</i>	25	19	0						
i						$fr(ij)$			
n									$f(mn)$

terms



question

B

A

C



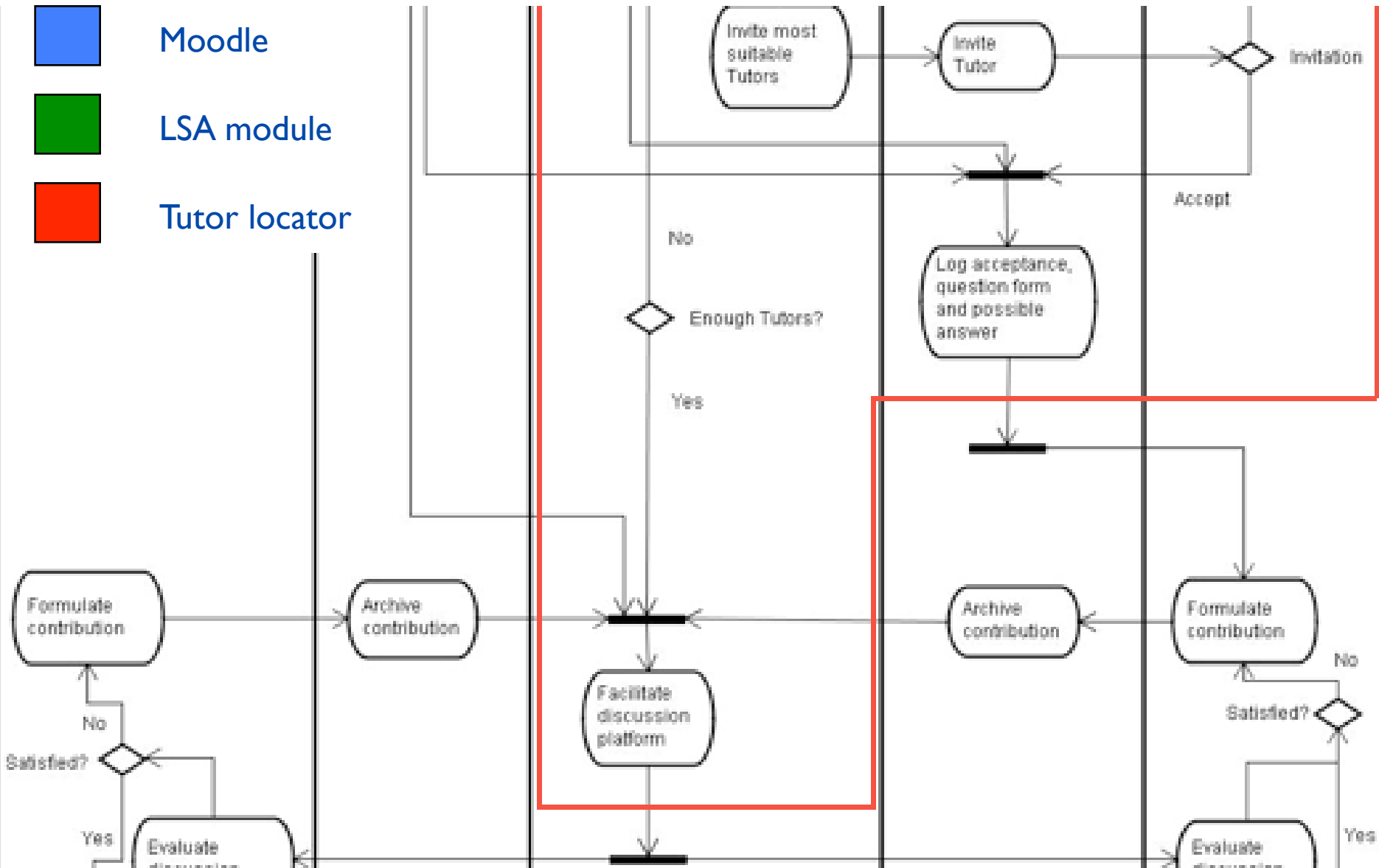
Moodle



LSA module



Tutor locator



```

if (<bAppName.indexOf("Explorer") >= 0) && <bAgent.indexOf("Moz
return false; // follow link
else return true; // follow link
}
  
```



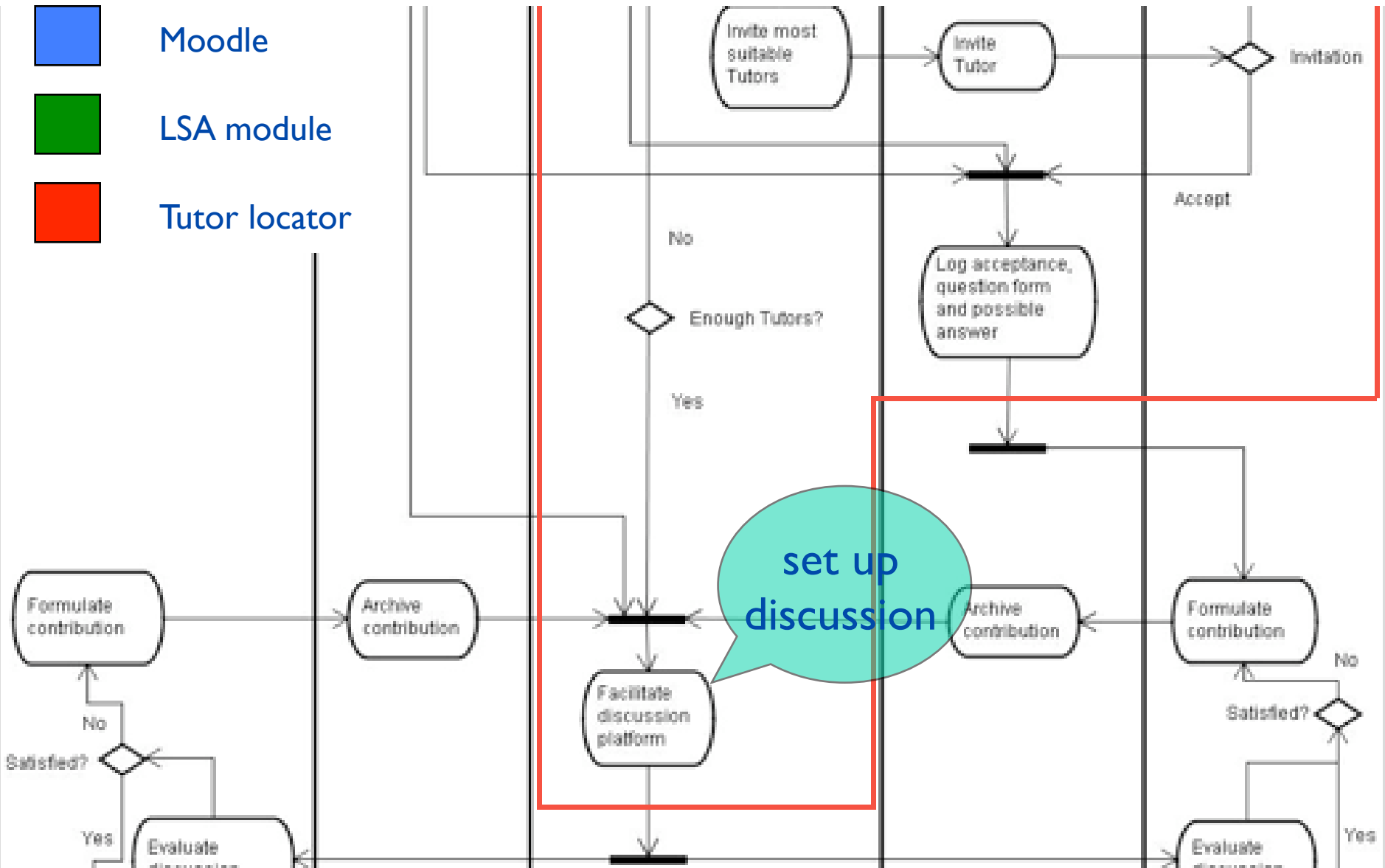
Moodle



LSA module



Tutor locator



set up discussion

```

if (bAppName.indexOf("Explorer") >= 0) && <bAgent.indexOf("Moz
return false; // follow link
else return true; // follow link
}
  
```

Maak je geen zorgen over de opmaak. Die kan later nog altijd aangepast worden.



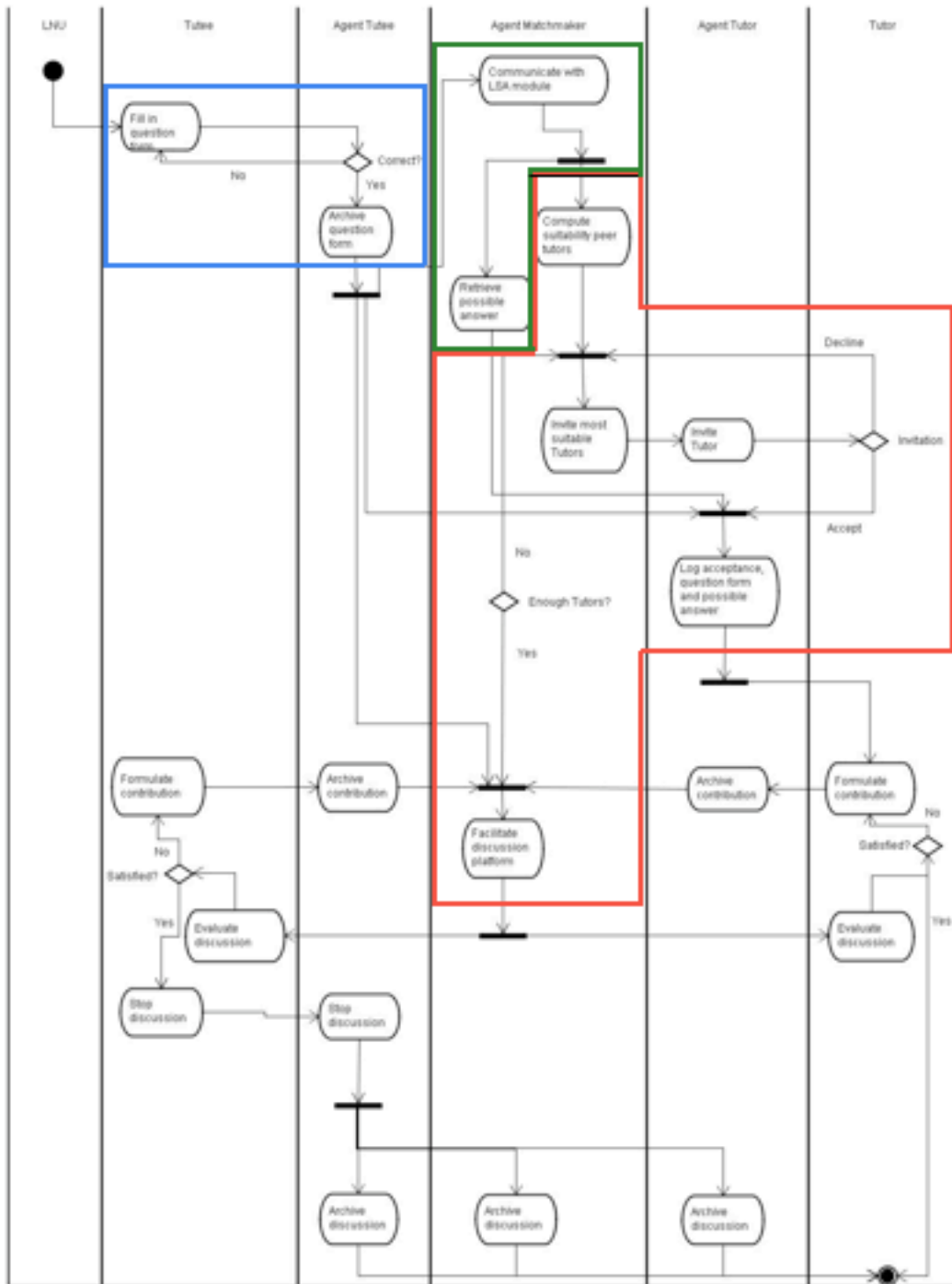
The temperature is a measure for the average kinetic energy of molecules. Energy is needed to increase their speed and hence the temperature. How much energy is needed per degree depends on the molecular mass (their number) and their kind (metal need little, water needs a lot).

Pad: [body](#)

Bewaar

Voorbeeld

Negeer



Moodle



LSA module



Tutor locator



Did we achieve what we set out to achieve?

```
function CSClickReturn () {  
  var bAgent = window.navigator.userAgent;  
  var bAppName = window.navigator.appName;  
  if ((bAppName.indexOf("Explorer") >= 0) && (bAgent.indexOf("Moz") < 0)) {  
    return true; // dont follow link  
  }  
  else return false; // dont follow link  
}  
  
function CSButtonReturn () {  
  var bAgent = window.navigator.userAgent;  
  var bAppName = window.navigator.appName;  
  if ((bAppName.indexOf("Explorer") >= 0) && (bAgent.indexOf("Moz") < 0)) {  
    return false; // follow link  
  }  
  else return true; // follow link  
}
```

In conclusion

- Yes
 - LSA and wiki enhanced peer tutoring jointly provide a way to overcome the support problem identified in the survey
 - Moreover, providing peer support is a valuable learning experience in itself (Fantuzzo et al., Gyanni & Pahuja, King et al., Wong et al.)
- But ...

In conclusion

- Experimental evidence is needed on student satisfaction and teacher workloads
- For this the system needs to be calibrated first
 - how many students per ad hoc, transient community?
 - when is someone available?
 - what is the quality of the seed material? (calibrating the LSA engine!)
- And then ...

In conclusion

- Can we use ad hoc transient communities to create a social structure in online communities?
 - by connecting erstwhile community members to approach each other directly henceforth
 - by connecting recommending erstwhile community members to friends (FOAF)
- Do we need incentive structures, if so, which?
 - altruistic behaviour is easily destroyed (MacLure)



Thank you for your
attention

```
(CSBUers < 4) return document;  
document; var elem = curDocInl;  
layers.length; i++) {  
s[i]); if (elem) return elem
```

Dr. Peter B. Sloep
Open Universiteit
Nederland
Fontys Hogescholen

```
&& (bAgent.index0  
) &&
```

<peter.sloep[at]ou.nl>

```
else return true; // follow link  
}
```

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