

Wiki-based Peer Tutoring

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TEN Competence

Building The European Network for Lifelong Competence Development

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

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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.

Main findings

- Teachers find giving process support important
- To avoid the 'teacher bandwidth' problem, also provide support through fellow student: peers

A learner support model based on peer tutor selection

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Abstract

The introduction of elearning often leads to an increase in the time staff spends on tutoring. To alleviate the workload of staff tutors, we developed a model for organizing and supporting learner-related interactions in elearning systems. It makes use of the knowledge and experience of peers and builds on the assumption that (lifelong) learners, when instructed and assisted carefully, should be able to assist each other. The model operates at two levels. At level 1, prospective peer tutors are identified, based on a combination of workload and competency indicators. At level 2, the thus identified prospective peer tutors become the actual tutors; this is performed by empowering them with tools and guidelines for the task at hand. The article will situate the model in networks for lifelong learning. For one kind of interactions, answering content-related questions, we will review a set of existing approaches and emerging technologies and describe our model. Finally, we will describe and discuss the results of a simulation of a prototype of the model and discuss to what extent it matches our requirements.

Keywords

elearning, Latent Semantic Analysis, lifelong learners, peer support, tutor workload.

Essence of the approach

1. student has and posts content question
2. using Latent Semantic Analysis, the system determines
 1. most relevant text fragments and courses
 2. the most suitable peers to answer the question
3. the system sets up a wiki with the question, text fragments
4. the system invites tutee and peer tutors (*ad hoc transient community*)
5. the students try to arrive at a satisfactory answer

LNU

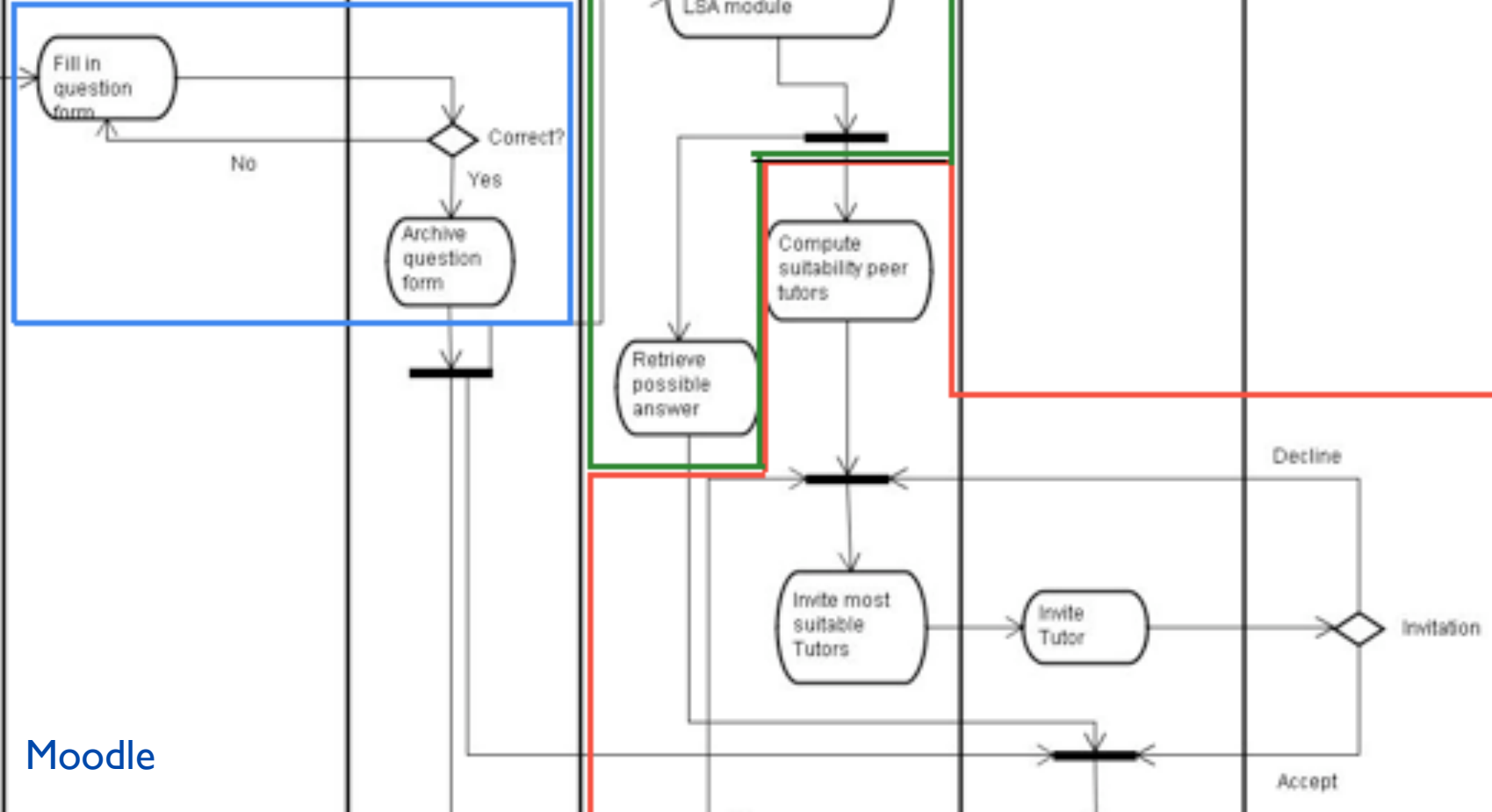
Tutee

Agent Tutee

Agent Matchmaker

Agent Tutor

Tutor



Moodle



LSA module



Tutor locator

LNU

Tutee

Agent Tutee

Agent Matchmaker

Agent Tutor

Tutor

ask question

Fill in question form

Correct?

No

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

LNU

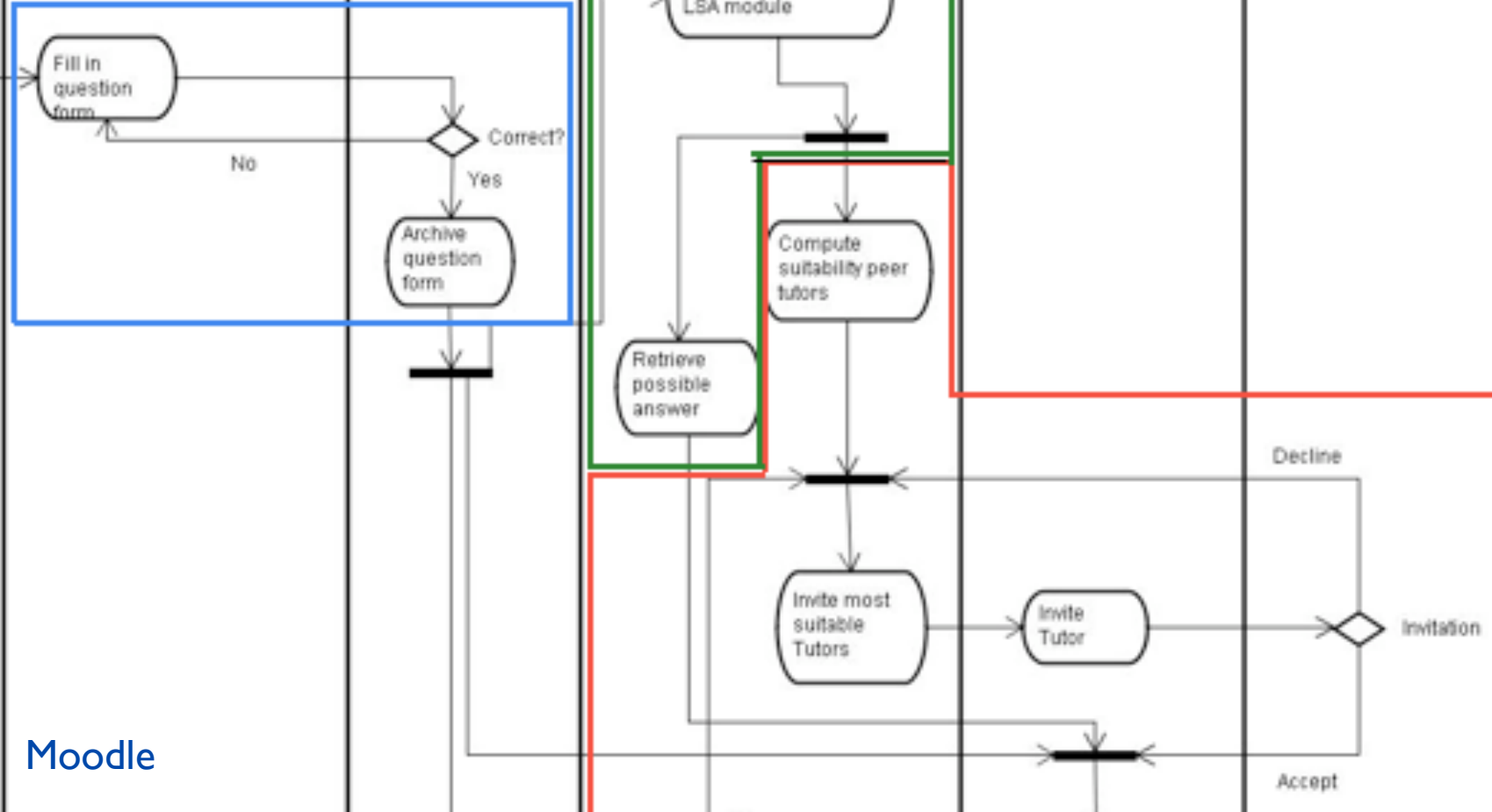
Tutee

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Tutor



Moodle

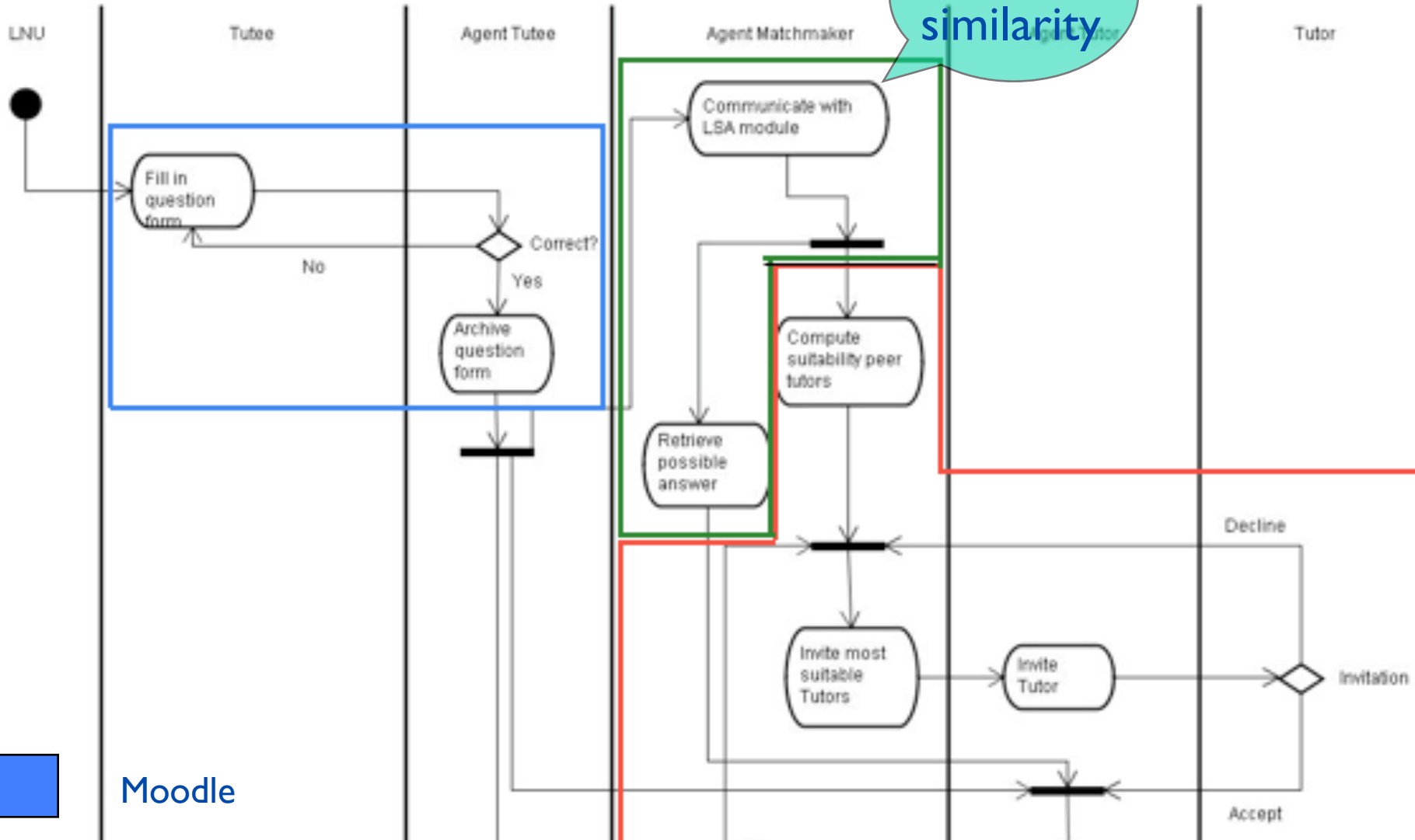


LSA module



Tutor locator

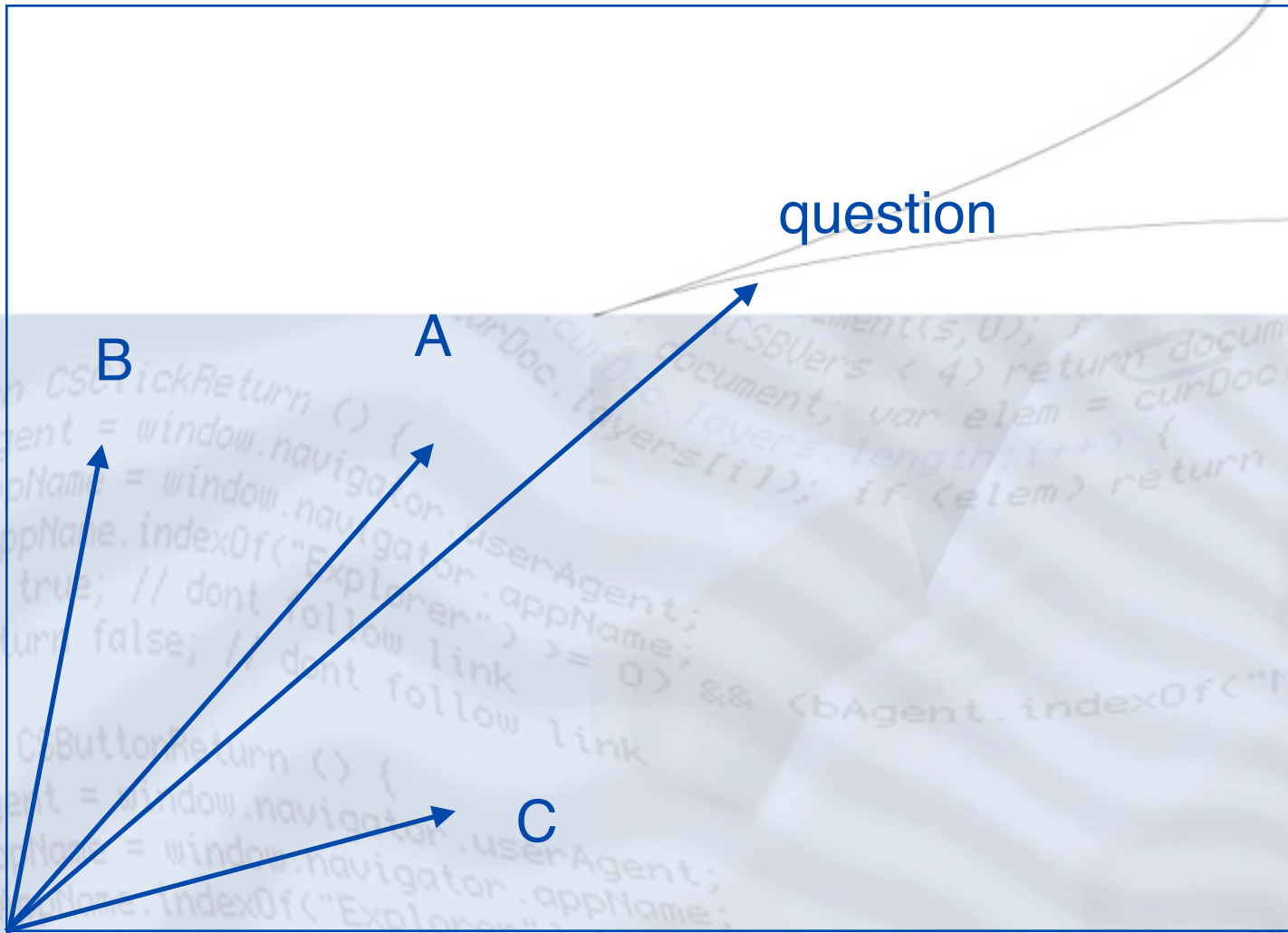
compute similarity



Moodle

LSA module

Tutor locator



question

B

A

C



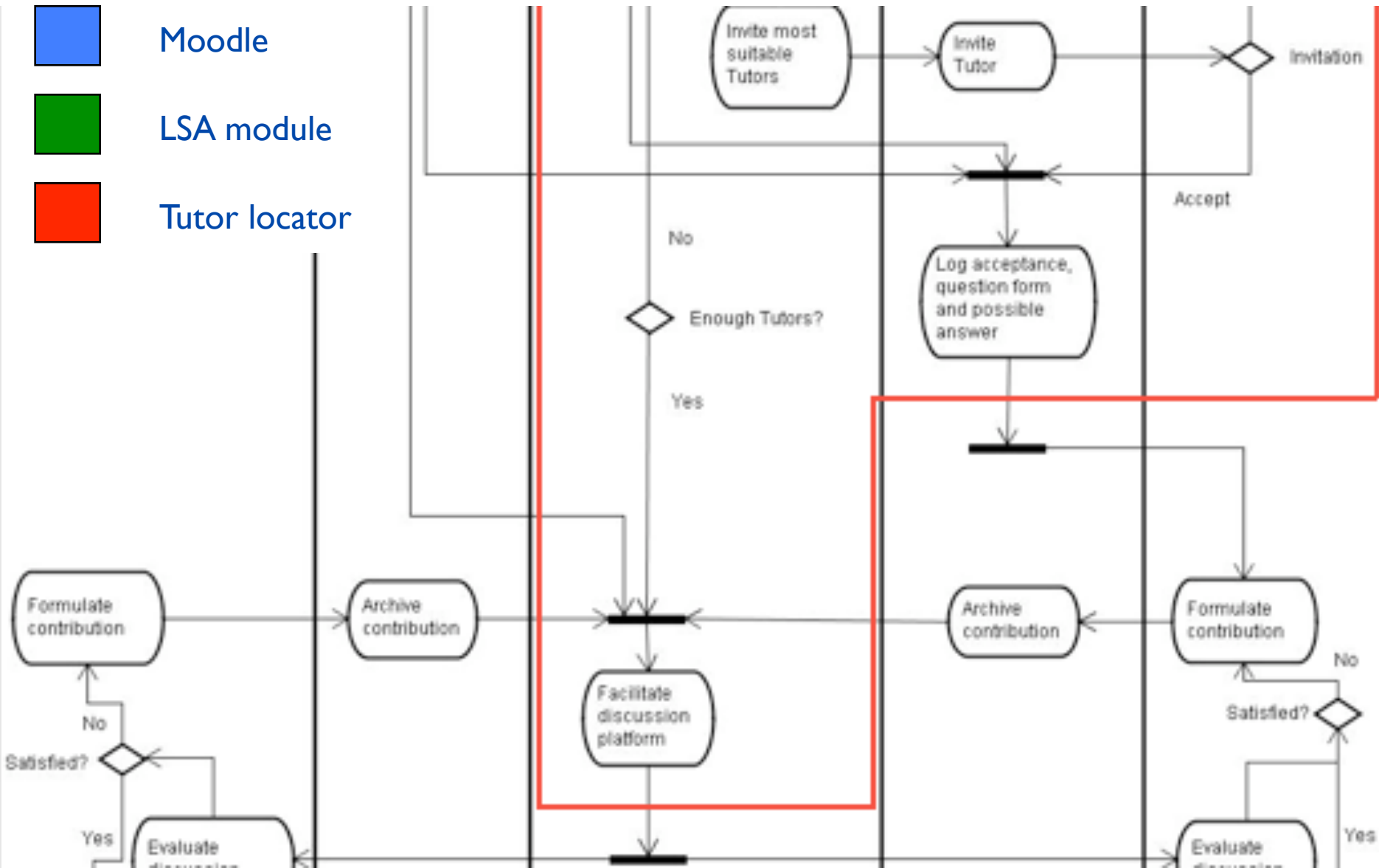
Moodle



LSA module



Tutor locator



```

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



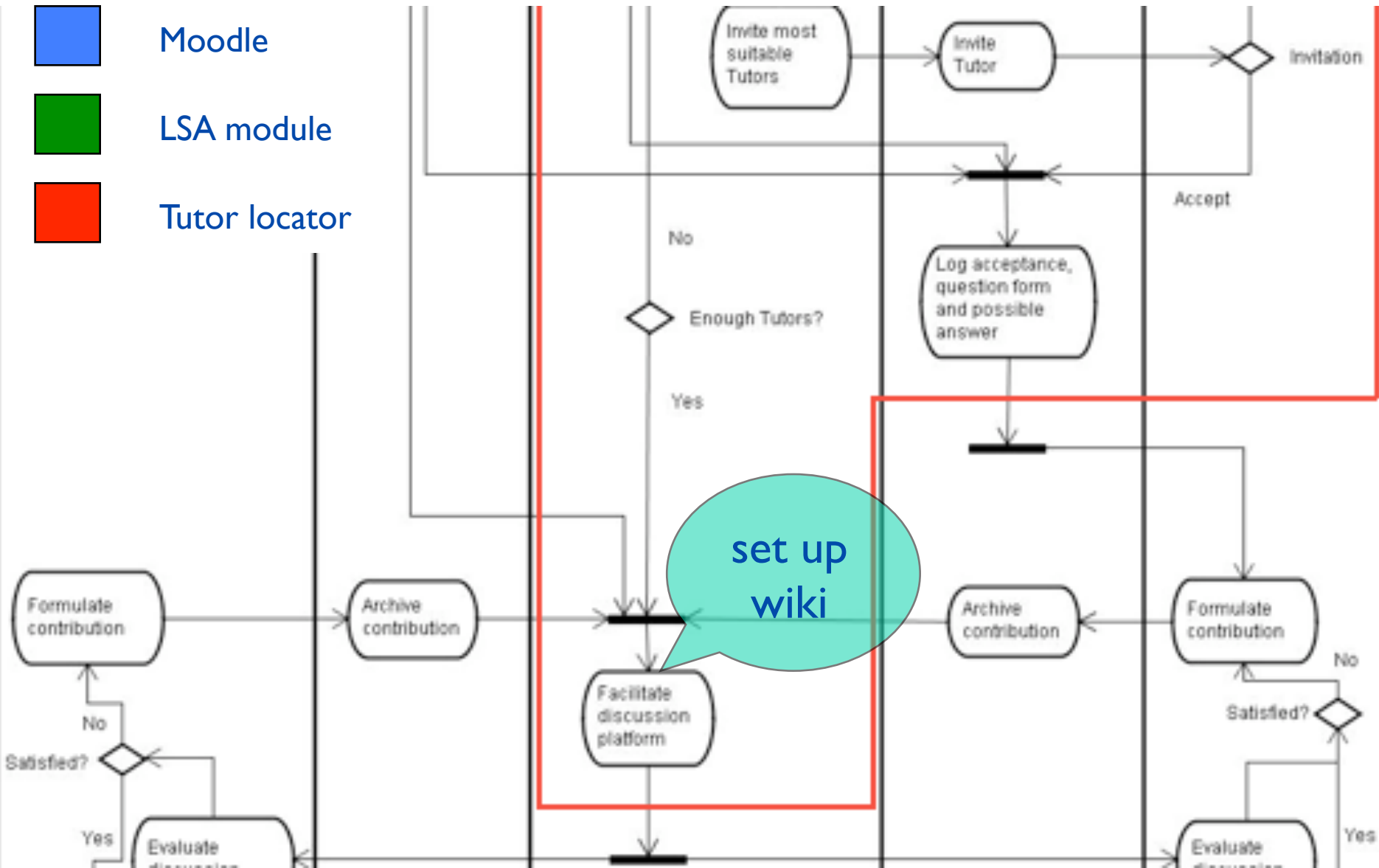
Moodle



LSA module



Tutor locator

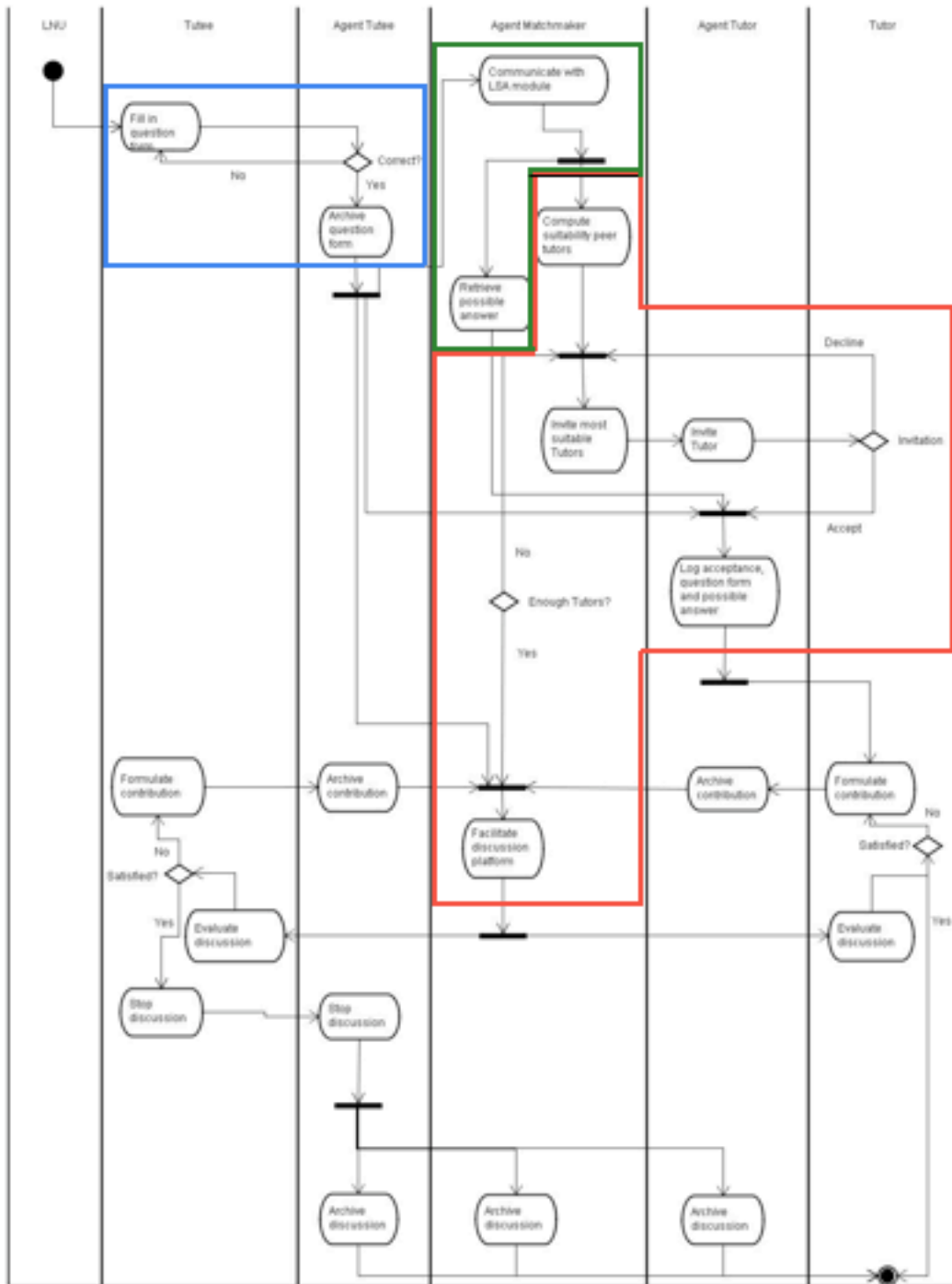


```

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

Collaboration

- Suitable peers are selected, based on
 - content competence (completed unit in question?)
 - availability (past workload?)
 - eligibility (joint zone of proximal development?)
- They are invited to join a wiki
- This group we call an 'ad hoc, transient community'



Moodle



LSA module



Tutor locator



Experimental Test on Efficiency and Effectiveness

(dissertation Peter van Rosmalen)

```
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  
}
```

Set-up

- over 100 students, 8 weeks free course on basic Internet skills, run at the OUNL
- 2 groups, one in which students were picked using LSA, one in which they were allotted randomly
- data from server logs, student questionnaire and expert opinions

First Quantitative Results

- about 80 out of 100 students participated actively
- about 100 questions posed, 80% of which solved
- in the LSA group
 - more questions were posed (59 vs 42) and answered (53/59 vs 29/42)
 - fewer second invitations were needed
 - questions were answered almost twice as fast
 - answers were rated higher (4.0 vs 3.4, 5-point scale)

First Qualitative Results

- Inspection of wikis taught us that students did not get it right, they imposed a forum structure on it.
- Better instruction is needed if you want a wiki
 - A forum is more personal even if less efficient
- Students want access to *all*, not just their own, question-answer pairs

Further questions

- Do we need incentive structures, if so, which?
 - altruistic behaviour is easily destroyed (MacLure)
- Can we use ad hoc transient communities to create a social structure in online communities?
 - particularly for so-called Learning Networks, which are maximally heterogeneous, this matters
- Will a synchronous variant, using instant messaging work?



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