

Investigating Information Behavior of Small Groups

Nan Zhou & Gerry Stahl

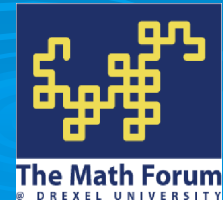
The Virtual Math Teams &
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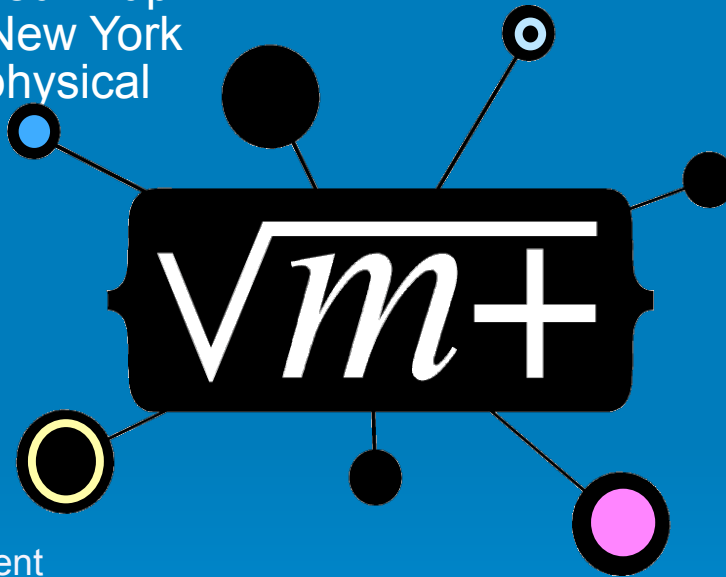
An Overview of Virtual Math Teams (VMT)



Tanja is home schooled in up-state New York because of a physical disability.



Sarah lives on a remote Navaho reservation and would like to go to College somewhere in California.



The VMT service promotes collaborative knowledge building through math discourse.

The VMT environment helps them to coalesce into an on-going group to work on math problem of common interest.



Damir attends regular school in Georgia and is struggling with his pre-calculus class.

An excerpt from VMT chat



Sup (8:29:04 PM): is there a formula for a 60/60/60?

AVT (8:29:12 PM): I have no idea

AVT (8:29:20 PM): I think once we find the formula it should be pretty easy

AVT (8:29:24 PM): I don't think there's a formula, though

pin (8:29:27 PM): **search google**

AVT (8:29:29 PM): I think we find it some other way

AVT (8:29:31 PM): that's what I'm doing

Sup (8:29:41 PM): what does it means by edlengths?

Sup (8:30:23 PM): jone of the 3 sides?

AVT (8:30:42 PM): edlength means length of a side

Sup (8:30:46 PM): ok

Research Questions

- *Do small groups of learners in VMT environment exhibit distinctive patterns in their information behavior?*
- *How is information behavior interwoven in the group's problem solving process?*
- *How can access to information facilitate co-construction of knowledge in an online math community?*
- *How can the information resources be designed to help students to learn mathematics?*

Observing small group's information behavior

- Group consists of participants who are here to work on a math problem and learn.
- Online environment provides opportunities of accessing enormous digital resources on the Web.
- Group plays a critical role serving as a resource for its members, an engine of exchanging and sharing information, and a mechanism of co-constructing meaning.

Process of dealing with information

- Initiation of information needs
- Seeking information
- Information sharing in a group
- Co-construction of meaning and knowledge building

Initiation of information needs

- Members of group build shared understanding of the problem as a common ground for their proceeding collaborative work. They construct their problem space and identify what information is needed in order to solve the problem.

Provide scaffoldings to facilitate transforming from Anomalous States of Knowledge (ASK) to specified information needs

Process of dealing with information

- Initiation of information needs
- **Seeking information**
- Information sharing in a group
- Co-construction of meaning and knowledge building

Seeking information

- When encountering information needs, small groups in VMT turn to various resources for help. Members seek information from their group, go online to search information, use digital libraries, try to recall their previous experience, etc.

Provide access to information organized in a way that helps learners to find pertinent information as well as facilitates their learning and problem solving strategy

Process of dealing with information

- Initiation of information needs
- Seeking information
- **Information sharing in a group**
- Co-construction of meaning and knowledge building

Information sharing in a group

- Participants construct their own ways of using the affordances and functionalities provided in the system to share information with the group.

design mechanism to facilitate such information sharing

Process of dealing with information

- Initiation of information needs
- Seeking information
- Information sharing in a group
- **Co-construction of meaning and knowledge building**

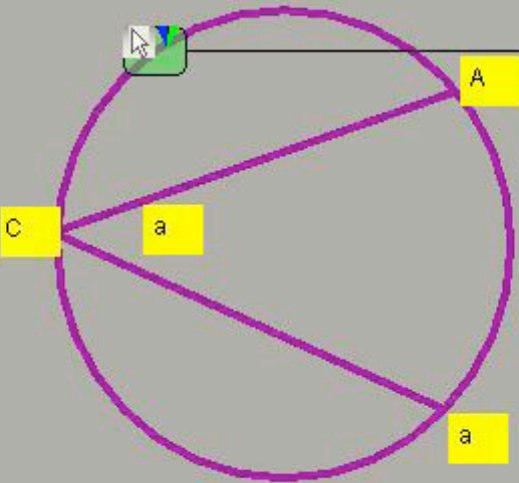
Co-construction of meaning and knowledge building

- They discuss, negotiate, and construct meaning of information brought to the group within the context of particular problem. They co-construct knowledge by engaging in such social meaning making process.

design mechanism to support and sustain meaning making and knowledge building

A Moment of Manifestation

Whiteboard:



Reference

Current users:

Chat: (4)

↑ Prot (Sep 14, 2005 3:39 PM):
what does "subtends" means? It's been a looong time.

↑ rtole (Sep 14, 2005 3:33 PM):
Does 'subtend' mean 'enclose' within the lines of an angle?

↑ Prot (Sep 14, 2005 3:40 PM):
I see. thanks

↑ Mu (Sep 14, 2005 3:34 PM):
Here is a definition from the web:
Mathematics. To be opposite to and delimit
The side of a triangle subtends the opposite angle.

↑ Prot (Sep 14, 2005 3:41 PM):
Oh... triangles, now? I guess it applies the same way

← Prot (Sep 14, 2005 3:41 PM):
So this arc subtends... a?

↑ Mu (Sep 14, 2005 3:35 PM):
That sentence was in italics in the dictionary. I guess it is meant as an example

← Prot (Sep 14, 2005 3:42 PM):
What about this arc... what does that subtend?

Message:

A glimpse of information needs of VMT small groups

- Factual information such as formulas
- Information that helps understanding of math concepts
- Tools of performing certain functions such as conversion and calculation
- Previous math experience or existing knowledge
- Information that connects known things together to apply to the problem situation
- Information that helps making choice of problem solving methods or strategies

Work in progress

- More VMT sessions are taking place
- More data analysis needs to be done
- There's been an undergoing design process of VMT service

References

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Thank you!

Questions?
Comments?

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