This study

The purpose was to investigate how students can use and evaluate their own and others' web-based asynchronous, written arguments as a tool for their own and others' learning, and how this collective and individual competence can be developed in a web-based course with argumentative tasks.

The research question is: How can student use and evaluate their own and others' web-based arguments as a tool to develop individual and collective learning?
The study

The study is the third part of a more extensive project whose aim it is to examine and describe how students engaged in courses in web-based learning environments develop a collective competence to provide feedback, critically examine and argue on different course assignments.
Theories

Scardamalia and Bereiter (1994) is a source of inspiration for web-based learning environments. Wenger (1998) describe learning as a product of a social community of practice. Stahl, Koschmann, Suthers & Hesse (2006; 2007) describe web-based learning as a collaborative process in which participants negotiate and share meanings within a interactive, collective context. Dysthe (2002) and Jobring & Carlén (2005) illustrate the potential in web-based dialogues as the range of meaning-mediating possibilities. Meyer (2003) and Schellens & Vaicke (2005) point to the importance of writing to develop higher-order and critical thinking in what way participants discussions becomes more concentrated on course content.

Comparing studies

The learning environment in web-based courses should contain different types of support resources to help participants to actively learn from what others have produced (Collis and Moonen, 2001). Well-structured asynchronous learning environment contributes greatly to the development of an individual's reflective dialogues and critical analysis (Aviv et al, 2003).
## Prevalent method

<table>
<thead>
<tr>
<th>Categories</th>
<th>Contribution /responses</th>
<th>Man 18 (45 %)</th>
<th>Woman 22 (55 %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New information (without theory)</td>
<td>260 (34 %)</td>
<td>103 (31 %)</td>
<td>157 (37 %)</td>
</tr>
<tr>
<td>Explane (incl. theory)</td>
<td>16 (2 %)</td>
<td>6 (2 %)</td>
<td>10 (2 %)</td>
</tr>
<tr>
<td>Evaluate ideas</td>
<td>227 (30 %)</td>
<td>105 (32 %)</td>
<td>122 (29 %)</td>
</tr>
<tr>
<td>Reproductions</td>
<td>177 (23 %)</td>
<td>91 (27 %)</td>
<td>86 (20 %)</td>
</tr>
<tr>
<td>Accepting and confirming</td>
<td>79 (11 %)</td>
<td>26 (8 %)</td>
<td>53 (12 %)</td>
</tr>
<tr>
<td>Sum</td>
<td>759 (100 %)</td>
<td>331 (100 %)</td>
<td>428 (100 %)</td>
</tr>
</tbody>
</table>

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## Study 1 – meaning potentials

<table>
<thead>
<tr>
<th>Dialogic Level</th>
<th>The levels of thematic pattern in the dialogue (N=189)</th>
</tr>
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</table>
| Passive and authoritative               | • accepting and confirming  
• passively reproducing  
• monological and authoritative  
• failure to explicate the possible meaning potential in the dialogue as a basis for learning and development |
| Persuasive and preliminary negotiation  | • accepting, confirming and questioning  
• elements of passively reproducing posts  
• negotiations  
• responses create possible meaning potentials  
• failure to use meaning potential as a basis for learning and development |
| Persuasive and co-authorial negotiation | • accepting, confirming or actively questioning and a desire to develop the discussion  
• few or no elements of reproducing posts  
• others’ statements reworded to own words  
• participants are shareholders and co-authors in the account  
• negotiations  
• responses create possible meaning potentials  
• use of meaning potential actively as basis for learning and development |
"Therefore, one can say that any word exists for the speaker in three aspects: as a neutral word of a language, belonging to nobody; as an other’s word, which belongs to another person and is filled with echoes of the other’s utterance; and, finally, as my word, for, since I am dealing with it in a particular situation, with a particular speech plan, it is already imbued with my expression” (Bakhtin, 1986, 2004, p. 88)

<table>
<thead>
<tr>
<th>Study 2 – multiple voices</th>
</tr>
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<tbody>
<tr>
<td><strong>Multiple Voices</strong></td>
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</tbody>
</table>
| 1. Neutral word of a language | • reproducing others’ perception of their surrounding world  
• aim on something generally acknowledgements  
• are not supported with my own words from literature or own experiences |
| 2a. Others’ word | • reproducing earlier voices  
• contain echo from others’ voices  
• explicit voices are proper to other’s voices  
• the voices are not always from the bottom of one self |
| 2b. Others’ word from literature | • reproducing other authors voices  
• built on others’ subject based experiences and arguments from other texts  
• others’ statements from literature rewords to own words  
• create, negotiate and confirm the meaning |
| 3. My word | • involves inner reflections and feelings  
• contain own and others’ voices, arguments, justifies, contradictions, experiences etc. which appropriates to my own words  
• construct and again construct a mutual meaning or a part of it  
• create, negotiate and confirm the meaning |
Study 3 – argument pattern

The theoretical framework is based on:
Socio-cultural theory of learning and development
Bakhtin's theoretical framework of dialogues
Toulmin's argument pattern

Toulmins’ argument pattern

- **Data**: Information which the claim is based (previous research, personal experience, common sense or statements) and are used as evidence to support this claim
- **Qualifier**: Related to the claim and indicates the degree of strength in the claim of using peculiar comments
- **Warrant**: Explicit or implicit argument that explains the relationship between data and claim
- **Claim**: Assertions about what exists or the justification of the norms or values that people hold or desire for acceptance of the claim
- **Backing**: Connected directly to the warrant, with often implicit motives underlying underwriting and claims
- **Rebuttal**: Connected to the qualifier with the statements or facts that either contradict the claim, data or rebuttal or qualify an argument
- **"But" / "Unless"**
- **"Therefore" / "So"**
- **"Because" / "Since"**
- **"Because of" / "On account of"**
Methodological approach and analysis

The data collection consists of 32 students’ written asynchronous contributions (N=362) about the teachers’ leadership (N=33), one official case and one from each student, every day over a period of one week with deadlines.

Findings

In students written arguments the word of their own, authors and the addressees meets.

When all voices can be heard or read, then develops more and finer traces of deeper active understanding.

The development of sense-making and meaning-mediating possibilities becomes more explicit when the theories of Bakhtin’s dialogic interactions and Toulmin’s argument pattern are combined as a meta-cognitive tool.
**Discussion and online education implications**

It is an active learning process that develops over time, when students use their experiences with others, to new ways of thinking and acting.

The different voices and arguments in the written asynchronous dialogues make it obvious that the collective interactions are not made or developed on their own.

Thank you!