

Exploring Learners' Microgenetic Development in SCMC-Based L2 Dynamic Assessment via Web 2.0

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Vygotsky's Sociocultural Theory

mediation

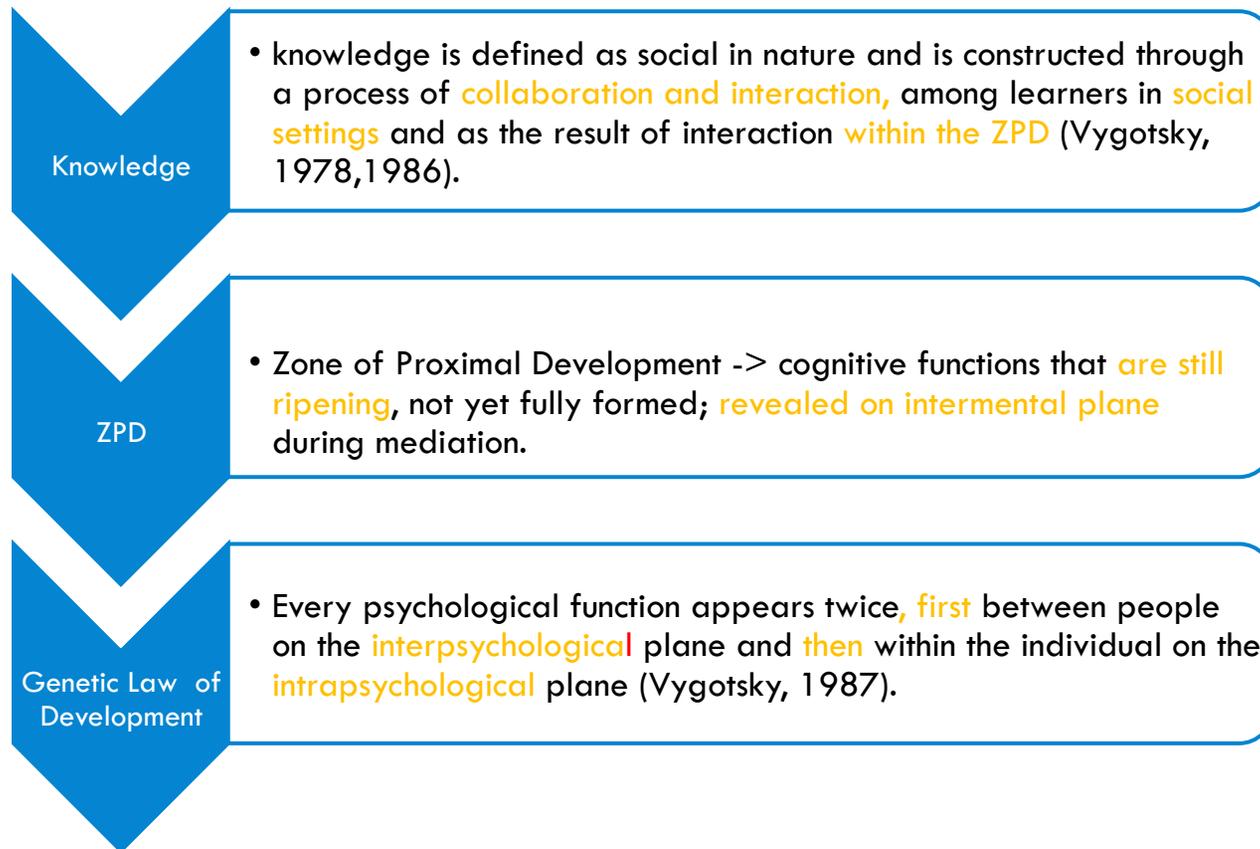
- The concept of mediation , a fundamental concept of sociocultural theory, indicates that **human cognition is mediated by tools, either physical and/or symbolic.**

Learning

- Learning, in Vygotsky's view, is what an individual is able to do with **assistance of another person or an artifact** created by others.

Development

- Development, on the other hand, results from the **appropriation and internalization of that assistance**, which in turn, enables individuals to function independently of specific concrete circumstances and to therefore extend their abilities to a broader range of circumstances



Vygotsky on Measurement

- Ability not stable trait of individuals but **malleable feature** dependent on activities in which individuals participate
- Test performance not complete without person's **response to assistance**
- Person's **potential to develop** depends on ZPD.
- The task of the psychologist is not to measure but to **interpret the individual** (Vygotsky, 1998, p. 204).

Dynamic Assessment

- A single activity performing both evaluative and instructional functions.
- Teachers intervene as necessary to help learners stretch beyond current capabilities.
- Teaching and assessment as dialectic, as parts of unified process.
- “Conventional attitude of neutrality... replaced by an atmosphere of teaching and helping” (Sternberg & Grigorenko 2002: 29)

Approaches to DA



- Mediation may be:
 1. **Interventionist** -> in form of **prespecified and fixed** hints, prompts and leading questions
 2. **Interactionist** -> open-ended, continually **attuned to learner needs** (Reuven Feuerstein)
- L2 DA work (to date) emphasized dialogic approach (Lantolf & Poehner 2004; Poehner 2007, 2008;2009 Ableeva 2008; Summers 2008,Birjandi&Ebadi,2009,2010)

Web 2.0

- ❑ Web 1.0 tools deliver information to people.
- ❑ Web 2.0 tools allow the active creation of information by users. Wesch (2007) proposes “an evolution from the *linking of information to the linking of people*”. There is an increased emphasis on user generated content, data and content sharing and collaborative effort.
- ❑ Web 2.0 applications are in line with constructivist paradigm, in which knowledge and meaning are seen as constructed rather than provided (Parker & Chao, 2007).

CMC in Web 2.0

Synchronous

- + communicative urgency
- + presence
- Chat mediums like Skype , Messenger and Google talk

- Google Wave combines synchronous and asynchronous CMC

Asynchronous

- + distance/reflection
- + depth of engagement
- Blogs , Wikis

SCMC



- **Less pressing time constraints** and **less ephemeral language** (e.g., through possibility of re-reading) in the written modality
 - **Reduced processing demands**, which may serve as an equalizer for learners with lower working memory capacity (Payne & Whitney 2002)
 - **Attention to form** and monitoring of language production (Chapelle 2003, Pellettieri 2000)
 - **Visual saliency** of the SCMC form enables learners to think, see, and edit their own production, thus, learners **notice their errors with minimal outside feedback** and take subsequent responsibility for error correction (Ozko,2005).

The Relevance of SCMC to DA

- ❑ SCMC creates a **new manifestation of the process of 'scaffolding' and Vygotsky's theory of 'ZPD** through collaborative construction of knowledge, (Beauvois , 1997) .
- ❑ **tracking system** which allows teachers and students to track who, what, and when changes are made. This tracking system is directly related to Vygotskian notion of history.
- ❑ **Shifts in pedagogy** from an individual orientation to a **collaborative one** as well as from a product-oriented medium to a **process oriented one** makes SCMC suitable environment for learning

Research Questions

- The following questions guided the present study:
- 1-What does dynamic assessment in SCMC reveal about the microgenetic development of L2 learners' grammatical structure in writing ?
- 2-What are the learners' perspectives on DA in web2.0-based SCMC ?

Methodology

- Following a SCT-based DA framework, this study gives **priority to a qualitative approach** which is best suited to the ZPD concept.
- The study implements the **microgenetic method** as the general analytical framework.
- The microgenetic method primarily concerns the reorganization and **development of mediation over a relatively short span of time** (Lantolf, 2000,p.3).
- Following Aljaafreh and Lantolf(1994)the researchers developed a **5-level regulatory scale** to investigate microgenetic development of **modals in English** via Web 2,0 application of **Google wave and Skpe**.

Participants



The participants for the study were recruited among university students at ATU.

1. They were asked to fill out two questioners in both English and Farsi posted to their emails on language learning experience and web literacy.
2. They were required to take the structure section of the test of DIALANG available at www.dialang.org and email the results to the researchers.
3. On the basis of DIALANG proficiency levels two female students in A1 level were selected for later comparison for the degree of responsiveness to mediation.
4. The selected participants had one-to-one individual weekly DA sessions that lasted forty minutes for each on writing assignments in Google Wave(GW) and Skype for a period of three month.

Context of the study

- **Google Wave** allows access to immediate and live unfolding of the students' writings in real time which is unprecedented in SCMC context, i.e. as they write, their drafts are shared on both screens.
- **Skype audio chatting** was used for explicit spoken mediation

Data Collection procedures

- The data collection included the following phases:
 1. Participants in the study were prompted through picture stories to **write a short paragraph focusing on modal verbs**
 2. Students and the mediator worked together through **the enrichment program** using **regulatory scale(table 1)** that emerged out of the researchers' mediation with different students in their private conversation classes over Skype.
 3. In the final phase of data collection, **interviews** were conducted in L1 with students on their **perspectives** on the whole process of online DA in SCMC.

Web 2.0 Regulatory Scale of Mediation from Implicit to Explicit Assistance

Level	Type	Explanation
0	Collaborative frame	The experts' mere online dialogic presence
1	Yellow highlighting	Yellow highlighting of the erroneous sentence
2	Red highlighting	Red highlighting of particular erroneous section within the sentence
3	Using sticky notes for sharing web links	Using sticky notes consisting of related web links to target structure tutorials available online
4	Choice offering through sticky notes	Offering choices through sticky notes to raise the learners' awareness on the target forms,
5	Oral explanation and exemplification	The explanation and exemplification of form orally presented to the learners via Skyp's audio chatting.

5/24/11

The evaluation of Mediation

- To evaluate mediation within the ZPD, Aljaafreh and Lantolf (1994) developed five transitional levels of mediation strategies to track learners' microgenetic development from other-regulated to self-regulated performance within DA sessions and transfer tasks.

Levels of Internalization from Interpsychological to Intrapsychological Functioning

Level Description

Level 1
The learner is unable to notice or correct the error, even with intervention.
Level 2
The learner is able to notice the error, but cannot correct it, even with intervention, requiring explicit help.
Level 3
The learner is able to notice and correct the error, but only with assistance. The learner understands the assistance and is able to incorporate the feedback offered.
Level 4
The learner notices and corrects an error with minimal or no obvious feedback and begins to assume full responsibility for error correction. However, the structure is not yet fully internalized since the learner often produces the target form incorrectly. The learner may even reject feedback when unsolicited.
Level 5
The learner becomes more consistent in using the target structure correctly in all contexts. The learner is fully able to notice and correct his/her own errors without intervention.

5/24/11

Qualitative Data Analysis

- **Trustworthiness is ensured by the use of data triangulation.** Online DA mediation sessions and transfer tasks between students and mediators are recorded.
- These recordings are analyzed **for emergent microgenetic development of target structures.**
- These analyses are supplemented with **questionnaires** and follow up **interviews** with students
- **Data reduction** is necessary to maintain consistent and systematic data analysis (Darhower ,2002) . Reduction is achieved by the selection of **language related episodes. (LREs)**
- Swain(2001)described **LRE** as “any part of a dialogue where students talk about the language they are producing, question their language use, or other- or self-correct their language production” (p.287).
- In the present study instances of dialogic engagement during DA sessions and transfer tasks in **LREs are the unit of analysis.**

Episode A Session 1(S1)

S1. When I came to the airport, I could asked the taxi driver.... (Level 1)

R. Highlighted the erroneous sentence in yellow.

S1. When I came to the airport, I could asked the taxi driver... (Level 2)

R. Highlighted the target structure error to zoom in.

S1. When I came to the airport, I can asked the taxi driver...(Level 3)

R. Provided web links on target structure lessons available online through sticky notes.

Follow this link:

<http://www.englishpage.com/modals/modalintro.html>

S1. When I came to the airport, I couldn't asked the taxi driver....(Level 4)

R. Offered choices through sticky notes.

Which one is correct?

Could ask or could asked

S1. When I came to the airport, I could asked the taxi driver... (Level 5)

R. Explained and exemplified the target structure orally over Skype.

Episode B Session 3 (S1)

S1.I have a sister that she could speaks English and French.(Level 1)

R. Highlighted the erroneous sentence in yellow.

S1.I had a sister that she could speaks English and French.(Level 2)

R. Highlighted the target structure error to zoom in

S1. 1.I had a sister that she could speaks English and French.(level 3)

R. Provided web links on target structure lessons available online
through sticky notes

Follow this link:

<http://www.englishpage.com/modals/modalintro.html>

S1.I had a sister that she could speak English and French.

Good, Bravo

Episode C Session 2 (S2)

S2.It is because she can speaks different language.(Level 1)

R. Highlighted the erroneous sentence in yellow.

S2.It is because she could speaks different language.(Level 2)

R. Highlighted the target structure error to zoom in

S2.It is because she could speak different language.(Level 3)

R. Provided web links on target structure lessons available online

through sticky notes

S2. It is because she can speak a different language.

Good, Bravo

Follow this link:

<http://www.englishpage.com/modals/modalintro.html>

Episode D Session 4 (S2)

S2.I lived with my brother and I couldn't to be happy in the house.(Level 1)

R. Highlighted the erroneous sentence in yellow.

S2.I lived with my brother and I couldn't to be happy in the house.(Level 2)

R. Highlighted the target structure error to zoom in

S2.I lived with my brother and I couldn't be happy in the house.

Good, Bravo

Discussion and Pedagogical Implications

1. The inadequacy of proficiency levels reported in the psychometric-based DIALANG results in pinpointing learners' future potentials for L2 grammar development. It was demonstrated that two learners who happened to be at the same A1 level had different potentialities for learning the target structure.
2. Regarding the first research question, the data evidenced that it might be possible to obtain a richer and more accurate understanding of students' potential level of development .

Discussion continued

3. According to SCT **development can take several directions simultaneously** .Mediation in SCMC aided in the development of the skills of **electronic literacy**, which constituted a part of learners' **electronic communicative competence**. (Chapelle, 2001)
- 4.**Microgenitic development profiles** can be used for development of **emergent syllabus** (Boettcher,2007) which is based on the emergent patterns of learners' behavior and unpredictability of the course.

Learners' Perspectives

- Regarding the second question on **learners' perspective**, in the post study interview, both participants indicated that along with the target structure, **their web literacy has dramatically improved.**
- As for the **effectiveness of moves** in regulatory scale, they both favored **level(3)** in which the learners were given opportunity **to explore the web** by following the posted links to the relevant web sites focusing on the target structure.
- Both participants in the study reiterated in the post study interview that **highlighting made their errors salient and provided links via sticky notes** have been effective **in focusing their attention.**

Limitation and further study

- SCT-based research is affected by some of the usual difficulties in developing **casual explanation and generalizations** through naturalistic research(Mitchell and Myles 1998).
- Gutierrez(2008) raises a crucial issue in SCT –based research and rightly questions **:is it possible to claim that the L2 change observable during interaction does become internalized?(P.231).**
- Further research is needed to address the above theoretical challenges with larger population and in depth analysis not only to investigate the linguistic development **but to focus on discoursal and pragmatic dimensions of communicative activity.**

Thank You

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