

ACTION RESEARCH

PROMOTING PRE-SERVICE TEACHERS' REFLECTIONS THROUGH A CROSS-CULTURAL KEYPAL PROJECT

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This paper reports the results of an action research-based study that investigated participants' reflections on EFL learning and teaching in a computer-mediated communication (CMC)-based project. Forty pre-service teachers from two universities, in Poland and in Romania, exchanged emails on class-related topics; the email exchange was followed by a project evaluation questionnaire. E-mail entries and quantitative and qualitative findings from the questionnaire were analysed to evaluate the effects of participating in the keypal project on stimulating participants' reflections. Results point to considerable potential for the collaborative project as a means of evoking reflections on participants' knowledge, experience and practice. The investigation also highlighted the very positive perceptions of the participants about the value of the project for their professional training.

Keywords: Teacher Education, Technology-Mediated Communication, Collaborative Learning.

APA Citation: Wach, A. (2015). Promoting pre-service teachers' reflections through a cross-cultural keypal project. *Language Learning & Technology*, 19(1), 34–45. Retrieved from <http://llt.msu.edu/issues/february2015/action2.pdf>

Received: February 17, 2014; **Accepted:** July 28, 2014; **Published:** February 1, 2015

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INTRODUCTION

Contemporary trends in teacher education stress the need for teachers to adjust instruction to diverse contexts and learners, viewing teaching as a decision-making process, rather than focusing on the process-product paradigm of the transmission model of education (Freeman, 2002). This is in line with a view of teachers as lifelong learners, who, at any stage of their careers, should try to make sense of their didactic procedures. Reflection is thus an essential element of both L2 teaching practice and L2 teacher training, and promoting reflective thinking is an objective of most teacher education programs (Burton, 2009; Farrell, 1999; Richards & Lockhart, 1996).

Activities which foster reflective thinking in pre-service teachers can take multiple forms, such as journal writing, peer observation and peer teaching, filling in surveys, participating in discussions, etc. Currently, providing opportunities for trainees to engage in collaborative activities through computer-assisted language learning (CALL) resources is increasingly being recognized as a relevant option for pursuing professional education and enhancing reflection (Hanson-Smith, 2006; Hubbard, 2008; Hubbard & Levy, 2006; Kessler, 2006; Lord & Lomicka, 2011; Meskill, 2009; Murray, 2013). Different forms of computer-mediated communication (CMC), such as bulletin boards, blogging, or emailing, can stimulate collaborative dialogs among CMC participants, allowing them to share experiences, challenge beliefs, get mutual support, and thus, reflect upon their own experience and practice. Research on teacher education in CALL shows that discussions through CMC can encourage L2 pre-service teachers to consider multiple perspectives on educational issues, both those covered in teacher training courses and those they have experienced themselves, leading to a new understanding of ideas (Kamhi-Stein, 2000; Liaw, 2003; Mann & Talandis, 2012; Seale & Cann, 2000).

This article presents the outcomes of an action research study in which pre-service teachers from universities in Poland and in Romania were engaged in email correspondence as a way of enhancing their reflections about L2 learning and teaching. First, however, the relevance of reflection in pre-service teacher education, particularly in CALL environments, is discussed.

LITERATURE REVIEW

Reflection and Collaboration in CALL Teacher Education

Most definitions of reflective thinking include the notion of creating conceptualizations from a learning experience, which leads to a new understanding of a given situation or phenomenon (Seale & Cann, 2000). Because reflection fosters awareness of oneself and one's actions, serving as a link between knowledge and experience, it is considered to be a cornerstone of professional development and a central element in contemporary L2 teacher education (Burton, 2009; Farrell, 1999; Freeman, 2002; Mann, 2005; Richards & Lockhart, 1996).

Moreover, the need to integrate technology into foreign language teacher education programs has been stressed for many years (e.g. Egbert, 2006; Hampel, 2009; Hanson-Smith, 2006; Hubbard, 2008; Hubbard & Levy, 2006; Kessler, 2006; Krajka, 2012; Murray, 2013). One reason for this is that the application of technology may promote reflective thinking in pre- and in-service teachers by creating opportunities for a conscious articulation of their practice, a reconstruction of knowledge, and enhanced awareness of learning and teaching processes. In such environments, students have time to reflect before they respond, as well as opportunities for deeper thinking and challenging assumptions, and for formative feedback and peer mentoring (Chapman, Ramondt, & Smiley, 2005). In the view of Freeman (2002), providing trainees with the means and occasions to articulate their experience is a vital aim of teacher education courses, as articulation and reflection are linked processes, and CALL teacher training may help achieve this goal. Egbert (2006) and McNeil (2013) see a link between CALL teacher education and "situated learning," during which trainees can combine their "expert" and "craft" knowledge in authentic contexts. Finally, technology-based activities often involve the written medium, and, as noted by Burton (2009), since writing is based on a composing process, it "actually involves reflection" (p. 303).

Another benefit derived from technology-enhanced teacher education is its potential to stimulate collaboration, which has also been recognized in research as a way of supporting reflection (Arnold & Ducate, 2006; Lord & Lomicka, 2004; Mann & Talandis, 2012). Arnold and Ducate (2006) note that asynchronous CMC, in the form of emails or electronic bulletin boards, seems to be especially appropriate within teacher training programs, as the lack of time pressure allows more space for reflection; moreover, asynchronous formats are usually more task-focused and encourage deeper and more extended interactions. Warschauer (1997) stresses the potential of CMC in stimulating people to collaborate in knowledge construction, "thus linking reflection and interaction" (p. 437). Because of the capacity of CMC to lead learners to reframe their ideas through cooperation, engaging teacher trainees in sharing experiences with peers can create opportunities for the development of critical thinking skills, deeper reflection, realized as a social process, and transformative learning (Bauer-Ramazani, 2006; Lord & Lomicka, 2007).

Previous Research on CALL Teacher Education

Many recent studies have revealed positive influences of CMC environments, including collaborative keypal projects, on promoting different aspects of L2 teacher training. Kamhi-Stein (2000), for example, compared teacher-trainees' participation in a face-to-face environment and on a Web-based bulletin board, noting that the online environment stimulated more peer discussions conducted without a trainer's intervention, and produced higher levels of student collaboration and mutual support. Similar conclusions were drawn by Son (2002), who investigated online interactions among native and non-native speaker teachers of English within CMC discussion groups, and observed multiple opportunities for collaborative

learning, peer support, and positive evaluations of the project among the study participants. In Liaw's (2003) study, a group of Taiwanese trainees exchanged emails with a peer group from a U.S. university on topics of their own choice (some of these topics were related to learning and teaching languages, others involved interpersonal and sociocultural issues). The participants' notions about the other culture were challenged, their knowledge deepened and reconstructed, and, generally, reflective thinking was fostered. Arnold and Ducate (2006) described a study in which teacher trainees from two universities used a discussion board for exchanging information, views, and opinions about theoretical and practical topics connected with foreign language learning and teaching. The experience proved to be beneficial for the participants' professional training for both social and cognitive reasons. In Yang's (2009) study, Taiwanese EFL teacher trainees participated in online discussions through blogging with the aim of engaging in and examining their own reflective practice. CMC was shown to be a flexible means of stimulating active involvement in discussions, leading to reflective inquiry. Increased reflection, as one of the advantages of participating in CALL-based teacher education programs, was also frequently mentioned by L2 teachers in a study conducted by Slaouti and Motteram (2006). Other benefits, related to the concept of teacher reflectivity, included knowledge transformation, increased awareness of teachers' and learners' roles, and reconstructive processes evident in teachers' actions and thinking.

The Conceptual Framework of the Present Study

The main pedagogical foundation for the present study was provided by the social-constructivist theory, which views learning as co-construction of knowledge in a social context. Individuals are actively engaged in making sense of knowledge through interacting with others in a specific sociocultural context. Thus, a constructivist program in teacher education may involve an emphasis on learning as reflective thinking and productivity, context-rich learning which focuses on authentic activities and allows for student collaboration in exploring and evaluating ideas (Warschauer, 1997; Williams & Burden, 1997). As noted by Kern and Warschauer (2000), the interactive nature of CALL aptly allows for this kind of learning, and Kessler and Bikowski (2010) make the point that within technology-mediated environments, the adaptation of the social-constructivist theory to new contexts of learning needs a redefined interpretation.

The study was also inspired by the sociocultural perspective on learning, derived from the principles of social-constructivist theory. Johnson and Golombek (2011) explain that within the sociocultural perspective, "human cognition originates in and emerges out of participation in social activities" (p. 1). Learning is

not the straightforward appropriation of skills or knowledge from the outside in, but the progressive movement from external, socially mediated activity to internal mediational control by individual learners, which results in the transformation of both the self and the activity. (Johnson, 2009, p. 2)

The final, most specific inspiration for the study was the beneficial effects of collaborative learning, a premise based on the social-constructivist theory, which is often discussed within CALL contexts as offering exposure to diverse perspectives on relevant issues with a problem-solving orientation, as well as helping to establish relationships among participants (Beatty & Nunan, 2006; Belz, 2002; Elola & Oskoz, 2010). In teacher education programs, the flexibility of CALL-based collaboration can contribute to trainees' engagement and autonomy (Kessler, 2013; Kessler & Bikowski, 2010; Reinders & Hubbard, 2013).

RESEARCH AIMS

To investigate the potential of online collaboration as a reflection-enhancing tool, an action research project was designed using cross-cultural email exchanges in two groups of pre-service teachers. The primary aim of action research is to work out a solution to a problem; hence, it is based on a series of

stages, including an identification of a problem, planning and implementing an intervention, data collection and evaluation, and, if necessary, revising the plan (Burns, 2010; Wallace, 1998). The direct stimulus behind the present study was the largely insufficient level of reflective thinking displayed by prospective teachers and their overall willingness to rely on ready solutions to various ELT issues discussed in class. Given that CALL teacher education, among its benefits, can stimulate reflective thinking, once the problem was identified, it was hypothesized that online collaboration focused on exploring course-related issues could have a positive effect on fostering students' reflections. Since preparing future teachers for the role of intercultural mediators is a vital objective of contemporary teacher training—and the participants had few opportunities to get hands-on experience in developing their intercultural awareness within the constraints of their EFL contexts, a cross-cultural collaboration project seemed to be an optimal kind of intervention.

The research questions were:

1. Will pre-service teachers benefit from collaborating online with keypals from another country? If they do, what kinds of benefits will they experience?
2. Will any evidence of reflections emerge from their interactions?
3. What will their perceptions be of their participation in the project?

METHOD

Participants

Forty pre-service teachers, 20 (16 females and four males) from a university in Poland and 20 (19 females and one male) from a university in Romania, participated in the study. All participants were students in the final year of three-year BA programs, and all were training to be teachers of English. The Polish group was more homogeneous in this respect, as all of the Polish students were majoring in English; in the Romanian group, some students were majoring, while others were minoring, in English (their major was Romanian or another foreign language). Another difference between the groups lay in that all the Polish students were having their practicum at the time of the study. In the Romanian group, some of the students had already started the practicum, while others had not.

Procedures

The study lasted for 11 weeks, from the beginning of November 2012 to mid-January 2013. The students were paired up at random by the trainers, and cross-cultural pairs of students exchanged emails on assigned topics. Topics concerned their own courses of study, with a special focus on the teacher training components; the situation of English teachers in the two countries; the qualities of a good teacher; and effective teaching. The full list of the topics in the form that the students received them is included in the [Appendix](#). In the final task, the students collaboratively made a presentation which summed up what they had learned from their partners. The emails (altogether, 292 entries) and the presentations were forwarded to the trainers. The study was concluded by in-class feedback sessions, during which students filled out questionnaires evaluating the project experience. Thirty-five of the participants filled out questionnaires: all of the Polish students (20), and 15 Romanian ones. The questionnaire consisted of five Likert-type questions, to which the students responded by ticking the most appropriate answer on a 5-point scale, where 1 meant “not at all”, 2 – “no”, 3 – “hard to say”, 4 – “yes”, and 5 – “very much indeed.” For each question, space was provided for the students' descriptive comments; moreover, the questionnaire ended with an open-ended question: “Generally, what did you learn from the experience of participating in the project?” The answers to these open-ended prompts offered more in-depth insight into the students' perceptions about how helpful the project was for their professional development.

RESULTS

Examples of reflections from the emails

The concept of reflection, due to its complexity, can be approached and described from a variety of perspectives. Within the scope of this study, reflective discourse was operationalized as possessing at least one of the following features (Hatton & Smith, 1995; Moon, 1999):

- an expression of participants' own thoughts, comments, and beliefs related to L2 learning and teaching, rather than a quotation of information from other sources;
- relating to what a participant's keypal has written about L2 learning or teaching and an attempt to understand the other person's thinking;
- an indication of applying course-based knowledge to the context of a participant's own practice;
- a descriptive interpretation of one's academic or professional performance.

In the body of participants' email entries, portions of text which contained reflective discourse (referred to as *reflection units*) were coded, divided into theme threads (mostly related to the topics explored in the exchanges), and subjected to further analysis. To illustrate the proportion of samples containing reflective discourse, [Table 1](#) presents information about the numbers of the email entries and words gathered in the study. As can be seen, reflection units were present in more than half of the emails and constituted about 60% of the total number of words produced by the participants.

Table 1. *Descriptive Statistics of the Number of Emails and Words Gathered in the Study.*

	<i>N</i>	%
Total number of email entries	292	100
Number of email entries containing reflection units	157	53.7
Total number of words	53,144	100
Number of words in reflection units	32,228	60.6

All of the reflections present in the emails were stimulated by the assigned topics ([Appendix](#)). While discussing the topic of what constitutes good teaching practices, students referred both to knowledge obtained in the didactics courses and to their own experiences as learners and trainees. Quite often, they evaluated their own practice in the context of discussing a wider topic, while at the same time sharing ideas with their partners, as seen in the following example:

Today we had a micro-teaching session in our didactics class and we were supposed to prepare some activities to teach vocabulary. I chose difficult words connected with a bike, like a valve, a saddle, etc., and my students made comparisons, such as: I'm like a rim because... or My friend is like a saddle because... . (...) it was real fun:) (Ania 6/12/2012)

One student reflected upon the project they were participating in, concluding that it was beneficial for learning:

When I am finally a real teacher, I will try to involve my students in projects similar to the one we're now taking part in. There are so many opportunities for kids to get in touch with people from other countries and naturally they will be forced to use English. (Adam 8/12/2012)

Many reflections resulted from rethinking their own learning experience, often from high school, from a

teacher-trainer perspective and drawing more generalized conclusions, as in the following examples, in which students shared ideas about what it takes to be a good teacher: “When it comes to the qualities of a good teacher, I think that one has to love what he or she does. The worst teachers I’ve ever met were fed up with their job” (Karolina 28/11/2012); “Effective teachers use facts as a starting point, and always ask ‘why’ questions, encouraging students to think for themselves. Some of my teachers at school were like that, but most of them weren’t” (Andrea 7/12/2012).

The interactive character of the project stimulated the students to build upon their partners’ ideas and add their own comments, which was evident in most of the emails, as in this example: “I agree that a good lesson is one in which (just like you said) the teacher varies activities” (Alexandra 10/12/2012).

Numerous reflections concerned the challenges involved in being a teacher and illustrated the students’ doubts about the benefits of pursuing a career in teaching. These excerpts display some of their feelings: “I’m afraid that it is so difficult to be a really good teacher that I’m even afraid to try. Maybe one day ... when I’m wiser;)” (Beata 27/11/2012);

There are so many elements which have to be taken into account when you are in front of the class. You have to keep control of everything and organize every activity. I think that it is a difficult job, but a beautiful one. (Ioanna 22/11/2012)

I have my practicum at primary school and although I find it very fulfilling, as I've said before, it seems to me that teachers in Poland are underestimated. Also, discipline problems and tense relations with parents are something that discourages me a little bit. (Anna 23/11/2012)

Closed-Ended Questionnaire Responses

The mean values and standard deviation levels for the students’ responses are presented in [Table 2](#). As can be seen, the students positively evaluated the relevance of the discussion topics assigned by the trainers and admitted that the email exchanges stimulated their reflections on teacher training (for both of these questions, the average responses oscillated between 4.0 and 5.0 in both groups).

Table 2. *Descriptive Statistics of the Participants’ Responses to the Likert-Type Questions*

	Polish (N=20)		Romanian (N=15)		Totals	
	Mean	SD	Mean	SD	Mean	SD
Before the project started, did you have positive feelings about it?	3.60	.883	3.07	1.335	3.37	1.114
Did you find the topics for interactions relevant and adequate?	4.00	.459	4.33	.488	4.14	.494
Did you learn about the system of teacher training and the position of ELT in the other country?	3.25	.639	4.40	.507	3.74	.817
Did you reflect upon your own experience of learning to be a teacher?	4.05	.605	4.47	.640	4.23	.646
Generally, are you glad that you took part in the project?	3.75	.550	4.67	.488	4.14	.692

Note: 1 = “not at all,” 2 = “no,” 3 = “hard to say,” 4 = “yes,” and 5 = “very much indeed.”

Interestingly, while the Romanian students marked definitely positive answers to the question concerning their learning about the other country’s teacher training system, the Polish group’s answers were less positive. The mean scores to the initial question indicate that the students did not know what to expect

from the project (it was the first time any of them had participated in such an activity), and their feelings were not very positive before it started. However, their responses point to high levels of overall satisfaction with the project, although the Romanian students' responses were considerably more positive than the Polish students'.

The Open-Ended Questionnaire Comments

Both the comments which explained the Likert-type answers and the answers to the final, open-ended question, provided an array of opinions about the benefits of the project. The fact that it provided opportunities for reconsidering (or, in other words, reflecting upon) the participants' own practice, their own system of education, and their beliefs, was the most frequently cited benefit of the experience. One Polish student wrote: "With my partner, we talked about our teaching experience, which made me reflect upon my own practice. I also described some specific situations that happened in the lessons I conducted and we discussed them." Similarly, other students also stressed the importance of rethinking their experience: "When I wrote about my experience, I started feeling like a real teacher, not just a student! I reflected about my favorite techniques and some problems that I have encountered in teaching, which helped me understand many things better"; "While interacting with my keypal, I always related to my own experience, both as a teacher and a learner" (Polish students' comments).

Many of the students noted that in order to write comprehensive answers to the questions, they had to integrate their knowledge, experience, and feelings, as can be seen in the following comments: "I referred to my experience of learning to be a teacher, but also sometimes read some material from the previous semester (when we covered the theoretical aspects of teaching) to be able to comment upon the topics" (a Romanian student); "The topics we discussed required sharing our personal feelings, opinions and experiences, and were not only based on 'bookish' knowledge" (a Polish student). Such an integration may be conducive to enhanced reflectivity.

The students clearly valued the chance to reflect upon various issues related to their training, as it enriched their knowledge base. One Polish student wrote: "I learned to look at a given topic from a different perspective." Another added: "When discussing the topics, we could compare our situations, draw conclusions, and not only broaden our knowledge about teaching, but also pick up some practical ideas."

At the same time, some remarks indicated that the process of engaging in reflection and verbalizing them was not easy: "Sometimes the topics were difficult, as they required some reflection and I didn't have ready ideas" (a Polish student); "In order to answer my partners' questions, I had to think about my experience in teaching. But I still have little experience, so it was rather difficult" (a Romanian student).

Some of the students admitted that participating in the project caused them to begin considering the idea of taking up a teaching career after graduation: "I had to reflect a lot upon whether I really want to be a teacher in the future, and the project has convinced that I do enjoy teaching and this is what I want to do as my career"; "I found out so many interesting things about teaching, and in fact during this project I started thinking seriously about becoming a teacher" (Romanian students' comments).

Finally, some of the comments summed up the experience as an enjoyable one for professional and social reasons. Two examples of such comments, both made by Polish students, are: "I am glad that I had a chance to share experience with a teacher trainee from another country"; "It was a useful opportunity to exchange our experience and opinions, and compare how differently teacher training may be conducted in different countries." Similarly, two Romanian students stressed the relevance of interacting with peer trainees from another country: "Comparing our educational systems and discussing their pros and cons was thought-provoking"; "It was interesting and motivating to discover that we faced similar problems as teacher trainees, although we study in different countries."

DISCUSSION, CONCLUSIONS, AND LIMITATIONS

Addressing the research questions, it can be concluded that the pre-service teachers in this study benefitted from taking part in the project in many different ways. First of all, they had a chance to participate in a novel, innovative learning-teaching situation within the didactics course (they had never taken part in a collaborative keypal project before), which offered them ideas and encouragement for their own practice. It has been shown that through technology-based hands-on experience in learning, prospective teachers are more likely to incorporate technology in their own teaching (as was also shown in other studies, e.g. by Lord & Lomicka, 2004, 2011; Arnold & Ducate, 2006). The descriptive findings in the current study suggest that this was indeed the case.

Most important within the scope of this paper were the email exchanges, which apparently stimulated “reflective conversation” (Burton, 2009, p. 301) and gave participants opportunities to see, describe, and analyze situations which they have experienced—both in the ELT courses and in their teaching practice from a different perspective. As concluded by Seale and Cann (2000), creating meaning from an experience that helps a trainee see things in a different light lies at the core of reflective practice, and helping trainees discover links between the ideas and skills they learn from L2 didactics materials and the reality of an L2 classroom is considered to be an important benefit of collaborative learning in teacher education (Hanson-Smith, 2006; Hubbard & Levy, 2006). Numerous examples of email entries in this study revealed that in the interactions, participants had to link their knowledge with their own beliefs and practices, thus potentially increasing awareness about their training. They also learned about the system of teacher education in another country, which could stimulate reflections about their own programs of study and their own apprenticeship.

Many of the reflections recorded in the emails were rather technical and not very deep (as they focused primarily on descriptions of behavior), but some students made attempts at deeper, more critical reflections by linking previous experiences to their present situation, and by making references to what their partner wrote and evaluating it critically. This was necessitated by the dialogic nature of the exchanges, and it points to the value of collaboration and peer feedback as serving to mediate reflective thinking skills. The students’ views were often challenged by their partners’ responses, and, as they later admitted, such situations posed a particular difficulty for them. It can be assumed that having to reevaluate certain ideas and beliefs and to express them could lead to an activation of deeper cognitive processing. This assumption corroborates with findings from other studies, in which collaborative projects brought cognitive benefits, such as improved critical thinking skills (Arnold & Ducate, 2006; Bauer-Ramazani, 2006; Liaw, 2003).

The participants generally evaluated the usefulness of the project for their professional training very highly. As can be seen from the questionnaire responses, they were aware of the role of reflective thinking in their learning, and appreciated how the project created opportunities for reflection. Their keypals were found to create a form of support community, and the interactions were evaluated as both informative and enjoyable. It can, therefore, be concluded that the collaborative learning environment not only stimulated reflections in the trainees, but it also had a positive affective effect on them personally. Again, this is largely in line with the findings of other investigations which highlighted the importance of building communities of practice in online interactions as a source of achieving social and affective support in the process of learning (e.g. Hampel, 2009; Hanson-Smith, 2006).

It should be acknowledged that this study had a number of limitations. First, the small number of participants allows for no generalizations. Second, although the participants were satisfied with the topics, more variety and more student independence in choosing their own topics could have been allowed. Finally, for various technical reasons, email was the only form of CMC used in the study. Applying other forms would have undoubtedly contributed to the attractiveness of the project.

Despite these limitations, the main didactic implication derived from the study is that involving students

in cross-cultural collaboration online, and not only in EFL didactics courses, appears to be a relevant teaching procedure. It not only stimulates learners' reflectivity, but also brings out their potential and allows them to develop skills they need to function in today's increasingly complex and globalized world.

APPENDIX. The prompts that served as a basis for interactions

- Topic 1: •What are you studying?
•What is the organization of your study (i.e. what courses and how many of them do you take, are they obligatory, etc.)?
•Which subjects do you like most / least?
•Do you have to work hard?
- Topic 2: •Do you want to be a teacher of English when you graduate?
•Why/Why not?
•Is it good to be an English teacher in Poland / in Romania?
•What are your prospects of finding a good job within the teaching profession?
- Topic 3: •What are the qualities of a good teacher?
•Thinking back and recalling all your teachers, which of their teaching qualities did you admire most?
- Topic 4: •On the basis of your knowledge and experience (as learners or teacher trainees), what teaching procedures (techniques, materials, etc.) are the most effective?
•Give some examples of good teaching activities that you have read about/observed/participated in/used.

ACKNOWLEDGEMENTS

I would like to thank the students who participated in the study and my Romanian colleague, Dr. Elena Bonta, for their involvement in the project. Moreover, I would like to express my gratitude to the LLT editors and the anonymous reviewers for their insightful comments on the earlier versions of the article.

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