

Miller, J. S. (2013). Improving oral proficiency by raising metacognitive awareness with recordings. In J. Levis & K. LeVelle (Eds.). *Proceedings of the 4<sup>th</sup> Pronunciation in Second Language Learning and Teaching Conference*. Aug. 2012. (pp. 101-111). Ames, IA: Iowa State University.

## **IMPROVING ORAL PROFICIENCY BY RAISING METACOGNITIVE AWARENESS WITH RECORDINGS**

[Jessica S. Miller](#), University of Wisconsin-Eau Claire

Audio technology such as podcasting may be an efficient tool to improve oral proficiency by exposing learners to more authentic input (e.g., listening to podcasts) and by giving them opportunities to produce substantially more output (e.g., creating podcasts). Combined with self-evaluation activities, voice recording technology can also contribute to metacognitive awareness, i.e., “the ability to reflect upon, understand and control one’s learning,” (Schraw and Dennison, 1994), an important component of the learning process (Swain, 1985).

This exploratory study examines multiple learning activities in conversation courses designed to develop spontaneous second language (L2) oral proficiency. It also investigates learners’ perception of what is needed to improve. Data were gathered in two university L2 conversation courses: an intermediate German course, and an advanced French course. Some of the activities proposed in those courses employed voice recording technology and rubrics to enhance metacognition skills, while others did not.

Preliminary results show that students gained from using audio technology and rubrics as they reported benefitting from paying more attention to their speech, which helped them correct their errors. Although not all favored those exercises, a vast majority acknowledged the need to be pushed in order to become proficient, no matter the activity in which they engage. Developing activities that enhance their Willingness To Communicate (McCroskey & Richmond, 1991; MacIntyre 2007) as well as their metacognitive awareness seemed to have a positive impact.

### **INTRODUCTION**

Short of traveling with a class to practice the target language in an authentic setting, instructors can bring the target culture to the classroom via technology. Because technology is now a part of students’ everyday lives, using it to teach and learn foreign languages makes the learning experience more relevant and applicable to their lives. For example, some authors have highlighted how podcasts can help second language (L2) students. Chinnery (2006) noted the advantage of portability, which can increase accessibility to L2 input. Ducate & Lomicka (2009) found that students appreciated the creative aspect of producing their podcasts. So did O’Byran & Hegelheimer (2007) who showed that learners viewed podcasting in a positive way. Lord’s research (2008) demonstrated that students’ attitudes and pronunciation abilities in Spanish improved as they engaged in crafting their podcasts. Onsrud’s high school French project (2009) concluded that students who recorded their assignments acquired oral proficiency skills more successfully.

Such positive reports could be explained by the fact that when students produce and listen to podcasts in another language, they create “their own mobile immersion environments” (Thorne & Payne, 2005, p. 386). They can in this manner immerse themselves in authentic material on topics of their own choosing, which makes that activity attractive (Rosell-Aguilar, 2007), contrary to traditional language lab settings where one listens and speaks around theme generally imposed by a textbook. For example, students in Miller & Hlas (2010) made a series of three

podcast episodes in their intermediate French and Spanish courses. Each team of two selected an overarching theme for all episodes such as healthy foods, traveling, university life, etc. Every installment had a different structure within which students had room for creativity, but all were linked by the general theme and together formed a radio show: episode one was an interview, episode two a top-ten list, and episode three a debate. This semi-guided activity allowed students to use their target language creatively in and outside of class as they researched their themes to prepare the radio program. The language lab then became a mock radio station where shows were produced and broadcasted to peers, thus creating a mini-immersion experience. The content learned from listening to and creating personalized podcasts could later be shared with classmates and recycled for further speaking practice.

In addition, technology that allows learners to monitor and evaluate their own language likely promotes metacognitive skills, an aspect of L2 acquisition that, if strengthened, supports language learning (Anderson, 2008; Graham, 2006; O'Malley & Chamot 1990; Rivers, 2001; Thompson, 2012). Metacognition can be defined as “the ability to reflect upon, understand and control one’s learning,” (Schraw & Dennison, 1994). In other words, developing students’ metacognitive skills is helping them think about thinking so they develop the capacity to evaluate themselves and control their own learning. Fostering metacognitive skills can be done by asking learners what they find difficult and why (Tanner, 2012), or by addressing study habits (Schraw & Dennison, 1994), or by modeling instructors’ or peers’ thought processes when dealing with difficulties (Schraw, 1998).

Developing metacognition in L2 learners is essential for attention to be drawn to correct language uses. Swain’s Output Hypothesis (Swain, 1985) indicates that processes such as noticing and metalinguistic reflection facilitate second language acquisition. Indeed, research has shown that across any field learners with higher metacognitive skills pay closer attention and use more effective learning strategies (Cooper & Sandi-Urena, 2009), and as a result “perform better than unaware learners” (Schraw & Dennison, 1994). Active learning paired with metacognition development contributes to greater learning in that students process events better and consequently memorize them more precisely. They also remember the reasons why they were asked to engage in those activities, as well as what they learned and how they learned from them (Tanner, 2012).

The present exploratory study investigates learners’ perception of what is needed to improve L2 oral proficiency as it relates to metacognitive skill development assisted by recording technology. Data were collected from two university L2 conversation courses that integrated recording technology combined with self- and peer-monitoring rubrics. In a 300-level German conversation class, students recorded multiple narrations of stories using scripted and unscripted speech. In a 400-level French conversation class, students produced podcasts as well, following Miller & Hlas’ methods (2010). In pairs they created three episodes of their own radio show as described above. In both language groups learners were required to evaluate their own recordings. In the French class only they were asked to evaluate peers’ podcasts.

## **RESEARCH QUESTIONS**

Current professional demands highlight second language proficiency as a crucial attribute for a global workforce (Henn, 2012) but budget constraints make it increasingly difficult to send students abroad or to limit class sizes for more individual attention. If used thoughtfully, technology may increase the quantity and quality of learners’ input and output, and allow

learners to self-monitor and self-evaluate. They may thus develop metacognitive behaviors. For example, Lord (2008) found that self-evaluation by language learners can help them acquire proper pronunciation by raising metalinguistic awareness. This exploratory study on recording technology and oral proficiency aims at offering ways to make instruction more effective and relevant to current needs. It also reflects on changing learners' behaviors by showing them different learning strategies that have the potential to increase their autonomy and thus enhance their L2 capabilities. Foreign language college students exposed to different activities including recorded and self-evaluated tasks are asked the following broad questions: what learning activities do you feel help increase their oral proficiency? What do you feel is needed to become proficient? Within those questions responses are scrutinized to investigate whether or not learners benefit from recording technology, and if so, whether metacognition has a role to play in those benefits. Pedagogical implications are discussed as well.

## **METHODS**

Qualitative data were collected in 2012 at a mid-sized liberal arts university in the Midwest from students enrolled in two L2 conversation courses: an intermediate 300-level German course and an advanced 400-level French course. In both, learners practiced spontaneous speech in multiple ways, with and without recording technology. They were surveyed at the end of the term.

### **Participants**

Intermediate and advanced language courses have limited enrollment so as to ensure frequent individual interaction between learners and instructors. Among all students registered in those two classes, eight learners of French and ten learners of German chose to participate in this study. While the results cannot be generalizable due to the small sample size, they indicate possible trends for further explorations.

### **Procedure**

For one semester all learners received instruction meant to improve their oral proficiency skills according to the national standards developed by the American Council on the Teaching of Foreign Languages (ACTFL, 2002). While both courses were taught by different instructors and used different types of activities, the course objectives and teaching methods were similar. One goal of both courses was to prepare students for an ACTFL's Oral Proficiency Interview (OPI), an oral exam required to receive teaching licensure in many states. An online survey containing open-ended questions designed to trigger reflection on oral proficiency was distributed at the end of the semester. Those questions appear in the Results section below.

Activities performed in both the German and French classes were debates, conversations, presentations, summaries of articles, and story narrations. In the French class, learners also listened to authentic podcasts, produced their own, and evaluated theirs and their classmates'. Varying degrees of attention were given to those tasks depending on the course. Table 1 below gives an overview of what types of activities were used in each class. It shows which ones used voice recordings that students could hear later, which ones did not, which ones alternated, and which ones were accompanied by a self-evaluation.

Table 1.

*Learning activities designed to increase oral proficiency*

Activities	French course	German course
Podcasting	recorded + self-evaluated	N/A
Debates	recorded and not recorded	not recorded
Conversations	recorded and not recorded	not recorded
Presentations	not recorded	not recorded
Summaries	not recorded	not recorded
Story narrations	recorded and not recorded + self-evaluated	recorded and not recorded + self-evaluated

**RESULTS**

*Among the activities that you identified above, describe the one that you feel helped improve your foreign language oral proficiency the most.*

Learners of German ranked story narration as the most helpful followed by article summaries (Table 2 below). A participant explained: “Telling stories using only pictures as guides really helped improve my oral proficiency because it forced me to really think about narration in the past tense, word order, and conjugations. As the semester went on, I was able to catch my mistakes more quickly and be more confident in speaking”. Another one describes: “Not only did we have to narrate a story and recite without reading it, but then we also listened to our recordings, found the mistakes, and corrected them. It was really helpful listening to our own speech”. Those comments underline that narrating and evaluating one’s performance may support the development of oral proficiency by raising consciousness to some issues. Other participants’ comments stressed the importance of developing the ability to speak spontaneously in a pressure-free environment. For example, one participant noted that summaries “forced me to be able to think quickly and put all the words together in an order that worked within the grammatical structures” while another remarked that “conversing with partners seemed to be the most effective because it allowed me to speak my second language in a less stressful situation than having the entire class listen to what I’m saying”.

Table 2.

*Activities that German students found helpful to increase proficiency*

Rank	Type of activity	Number of students who cited it
1	Story narration	4
2	Article summaries	3
3	Role-plays	1
3	Conversations	1
3	OPI training	1

Students of French selected debates as being the most helpful (Table 3 below). One participant explained: “I think that the in-class debates were the most helpful for improving my foreign language oral proficiency. They forced us to talk about topics that we wouldn’t on a daily basis. While we had time to prepare for some of them, others were spontaneous”. Many comments in the French group echoed those in the German group regarding the usefulness of practicing spontaneous speech in a relaxed environment. Debates were not graded, their topics varied from silly to serious, and students could rely on their peers and the instructor for assistance. As for podcasts, one student wrote: “I feel the creation of the podcasts greatly helped improve my oral proficiency. The *table française* [conversation table outside of class] is great too, but I tend to be too shy to speak up a lot [...]. However, during the podcasts, I am forced to speak an equal amount as my partner. Also, the podcasts were spontaneous, so it was great practice for spontaneous discussion of ideas that were complex and beyond everyday conversation topics”. In this case, the learner benefitted from pressure linked to the obligation to speak.

Table 3.

*Activities that French students found helpful to increase proficiency*

Rank	Type of activity	Number of students who cited it
1	Debates	4
2	Creating podcasts	2
2	Conversations	2

Interestingly, the verb “forced to” occurs frequently in both groups’ positive feedback. The lack of stakes and accountability during traditional conversations seems to negatively affect participation rate, and therefore less progress is accomplished. The students acknowledged the usefulness of being pushed to talk. Tying those responses to the Willingness to Communicate (WTC) framework (McCroskey & Richmond, 1991) can help interpret the results. The WTC concept was applied to L2 acquisition and defined within that context as “the probability of speaking when free to do so” by MacIntyre (2007, p. 564), with or without the speakers’ explicit

awareness. When the participants explained the benefits of being “forced” to speak, they were in a way describing convincing external factors motivating them to communicate willingly, even though they may not have been aware of it. MacIntyre explained: “Perhaps the most important decision language learners face is whether or not to use their incipient skills when the opportunity arises, inside or outside the classroom” (p. 573). Therefore the activities described as helpful – specifically the recorded story narrations and non-recorded article summaries in the German group, and the debates (either recorded or not) and the recorded podcasts in the French group – have in common that they increased the students’ WTC. Those activities not only led to more output, but to more reflection about the learning process and the errors to be corrected.

*What does a speaker need to become proficient? Name at least 3 elements that, in your opinion, characterize a high level of oral proficiency.*

The answers from the German group varied greatly but a majority believed that correct grammar is the most important, followed by vocabulary. Among the learners of French, the results differed. While only one respondent in the German group cited pronunciation, that was the most frequently cited component as a correlate of proficiency in the French group. Grammar came in third position, after guidance. Here, guidance as expressed by students likely means corrective feedback. For example, learners often request the presence of a native speaker to point out and correct their errors during conversation tables. This finding may reflect a certain anxiety toward pronunciation experienced by learners of French who tend to find that aspect quite challenging. The same may be true for learners of German and grammar. The German group cited “confidence” in third place, also indicating the need to let go of fears tied to insecurities in order to become proficient.

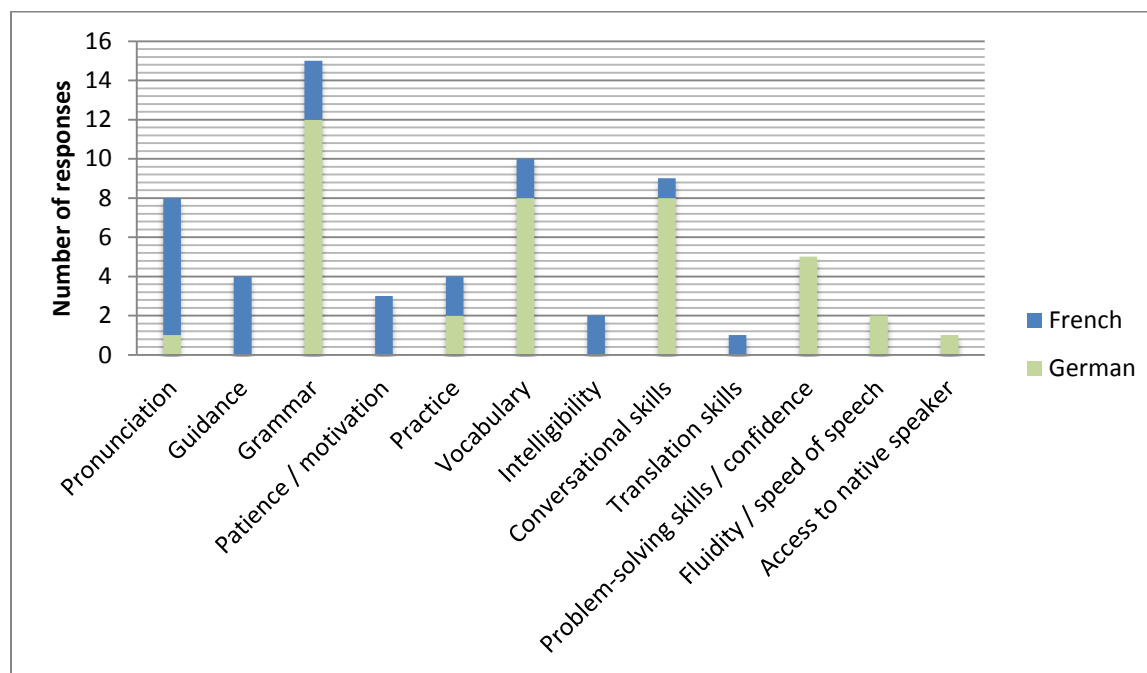


Figure 1. Elements characterizing high proficiency according to students

*Among your activities outside of class, and reflecting on your entire life as a language learner, describe an event or activity that helped improve your oral proficiency the most.*

The most frequent answer to this question was “immersion” for both groups. For the learners of German, equally as important were self-monitoring through recordings, receiving OPI training, and communicating with natives outside of immersion contexts. For instance, a student of German noted: “It’s good to be corrected/correct your own speech soon after you’ve said it so that you learn from your mistakes and hopefully quit making them”. That comment illustrates that outside of immersion, being made to notice mistakes is perhaps one of the better teaching and learning techniques.

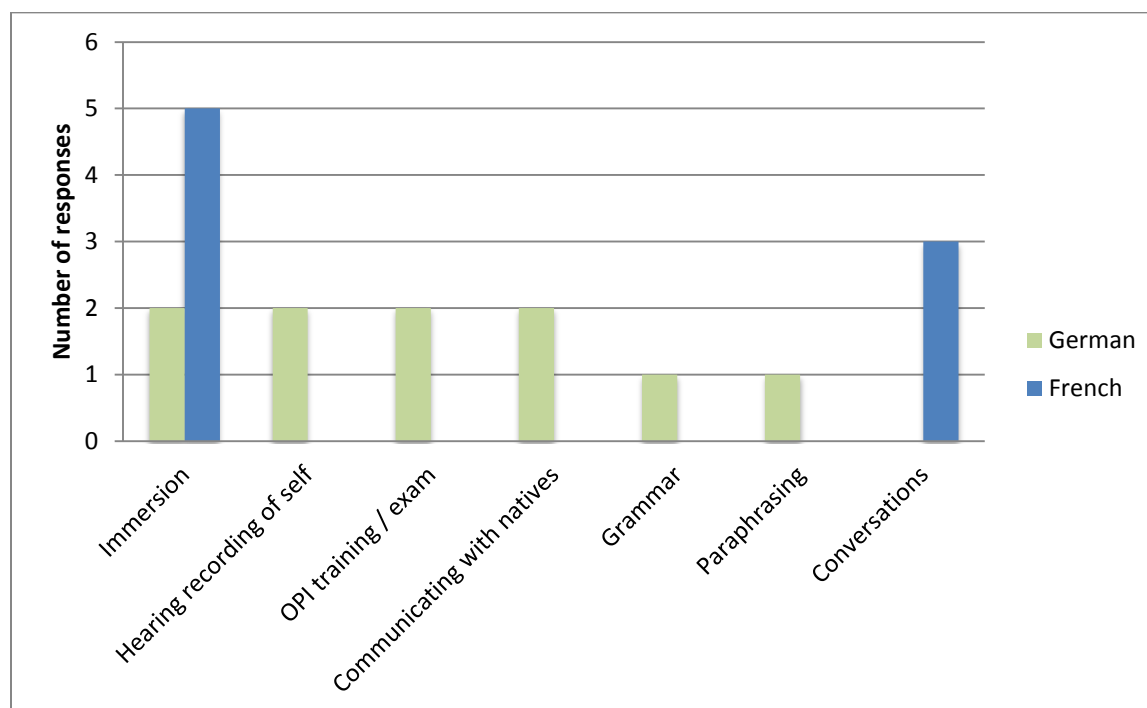


Figure 2. Elements described by students as helpful to increase oral proficiency

In the French group, the majority responded that immersion was important: “The most transformative experience was studying abroad in France for a semester. It greatly helped that I had more than 4 hours of class everyday only in French. I also lived with a host family who only spoke French. This mainly improved my oral proficiency out of necessity”. Otherwise they cited conversations, noting that immersion and conversations display similarities: “Definitely any immersion scenario has helped me the most. In French classes we have discussion groups that are mini immersion experiences and they’ve helped me out a lot. When I am forced to speak the language in order to get by, it helps me go outside my comfort zone and it helped me become much more comfortable with the language”. Once again, words like “necessity” and “forced to” emerged. There is an apparent contradiction between learners needing to be pushed outside of comfortable boundaries but all the same requiring a pressure-free learning environment. As explained earlier within the WTC framework, learners are not truly forced to speak: rather, they are made to find convincing motivational factors to use the target language.

On the other hand several students noted that conversations can also be helpful among friends. One of them wrote: “I think speaking with my friends in French outside the classroom was most important because I could freely ask them questions about certain words without having to look

them up, or if neither of us knew how to express a certain idea, looking it up and both learning it together. This was most effective because we were not necessarily constrained by time limits or the structure of a classroom setting and could take our time, and we didn't judge each other for our mistakes or misuse of words like we might think students or teachers might do in a classroom". In this case, the learners displayed a high level of WTC without feeling obligated to speak. The difference may lie in different personalities. MacIntyre (2007) noted that extroverts thrive in unfamiliar situations whereas introverts do better in familiar settings. The first context could be equated to situations where one feels forced to speak (e.g., podcasting, recorded narrations, being immersed in a host country), and the second to more laid-back situations (low-stakes in class activities such as debates that were often not recorded, non-recorded article summaries, conversations with friends).

## **DISCUSSION**

### **Grammar vs. Pronunciation**

The between-group difference on what learners perceive to be correlates of high proficiency deserves attention. For the most part, learners of German believe that it takes a good control of grammar and vocabulary. Students of French, on the other hand, think that correct pronunciation is required to attain high oral proficiency. There are two possible explanations for this divergence. First, the difference may be attributed to teachers' influence. While neither course was geared specifically toward grammar or pronunciation, the German instructor is a certified OPI trainer and may have emphasized grammatical elements important to success on a German OPI more strongly. Mastery of verb tenses and connectors, along with repercussions on subject-verb order, is crucial at the Intermediate and Advanced levels targeted in that course. In comparison, French link words carry little consequence on syntax. The French instructor is also a phonetician, and her interest in pronunciation may have influenced students. In addition, native English speakers may find French pronunciation and German grammar/vocabulary more challenging than the other way around, as German phonology is closer to that of English. But German grammar, with distinct word order and complex declensions, may seem more daunting than the French system.

### **Recorded vs. not recorded**

In both groups, activities that included recording technology were ranked as helpful to increase oral proficiency. But contrary to the French group the German group cited self-monitoring as a tool for improvement, explaining that listening to one's own speech induced noticing and subsequently correcting mistakes. The students of French appeared to favor conversation practice in a low-stress environment, i.e., ungraded debates that were not subject to self-evaluations. This finding supports the Affective Filter Hypothesis (Krashen, 1982): stressful situations raise the affective filter, preventing the processing of input; stress-free situations lower the filter, giving access to comprehensible input, which leads to learning. Yet students thought that being forced to tackle unfamiliar topics – an ability linked to higher proficiency on the OPI – was nonetheless positive. In summary, the best overall teaching strategy seems to involve a little pressure to provide a motivating challenge and increase the WTC in extrovert students, add low-stakes speaking practice to lower the affective filter and increase the WTC in introvert students, while giving opportunities for metacognitive development to facilitate noticing and accelerate second language acquisition.



## **Pedagogical implications**

Preliminary results suggest that recording technologies paired with self-monitoring and self-evaluation tasks do benefit learners' metacognitive behaviors as respondents commented on the usefulness of noticing mistakes in order to correct them more easily. However, traditional conversations in and outside of class were found to be helpful too. Results varied across classes. Learners of French may generally ask for more pronunciation instruction but learners of German may request more grammar. Recording activities should perhaps emphasize different skills depending on the target language. Ducate & Lomicka (2009) showed that podcasting contributes to improving L2 pronunciation, so podcasting may be an appropriate option to develop that aspect in French courses. Podcasting could perhaps be utilized in German classes with more focus on grammar.

In addition to that, sequencing the skills differently for French and for German students with guidance for self-evaluation might reduce anxiety and satisfy the varying learners' needs. For instance, students could engage in three different recorded activities out of several practices for each: a narration, a debate, and a conversation. In the French group pronunciation could be the focus of the first, followed for the second by pronunciation and grammar, and finally pronunciation, grammar, and vocabulary for the third. The order in German class would be grammar, vocabulary, and lastly pronunciation.

There may also be anxiety linked to unfamiliar technology. The creation of podcasts might sound intimidating to some learners. In reality a podcast does not have to be anything more than a collection of speech samples. Breaking it down in those terms may relieve some of the learners' stress. MacIntyre (2007) remarked the complexity of the choices to evaluate before reaching a WTC level high enough to speak. Anxiety and personality types are major contributing factors, and the familiarity of the situation comes into play as well. He commented: "As expected, the extraverts showed higher WTC than the introverts when studying new L2 vocabulary words in a moderately unfamiliar situation. However, the pattern was reversed when the study conditions were highly familiar. Under that condition, the introverts actually showed higher WTC than the extraverts did" (p. 570). Providing a balance between familiar and unfamiliar learning situations seems crucial to cater to different personalities. With technology it may thus be important to schedule multiple sessions so that recording activities eventually become familiar, which will help introvert learners. A conversation course could be turned into an amateur French radio show. Learners would come to class to prepare the show on a regular basis throughout the semester, record a few episodes during the term (i.e., narrations, debates, conversations), and have the option to share the episodes with classmates, friends, or any target audience of their choice. Moreover, since participants in this study felt that immersion is the best way to achieve a higher proficiency level – and research supports their view (Lindseth, 2010) – stepping into the lab would equate stepping into a recording studio, transforming part of the course into a mini-immersion experience.

Having students reflect on their personalities so they can be made aware of how they learn and what situations will increase their WTC can also be a good time investment. Instruments are available to increase metacognitive awareness. There are Likert-scale questionnaires that can be distributed to students to guide their reflection. One of them is the Metacognitive Awareness Inventory (Schraw and Dennison, 1994). It contains 52 items, among which "I summarize what I've learned after I've finished", "I am a good judge of how well I understand something", or "I change strategies when I fail to understand". Those types of questions generate reflection on

personal behavior when facing challenges while describing strategies to cope with those problems.

## CONCLUSION

As participants pointed out, some learners need to be pushed outside of their comfort zone and rise to the challenge of spontaneously speaking a second language. Others do better in more familiar environments. No matter the situation, in order to correct mistakes and improve L2 proficiency it is important for students to (1) be explicitly or implicitly convinced to speak, i.e., reach a high WTC, (2) become conscious of errors, i.e., develop noticing skills, (3) be aware of learning strategies, i.e., increase metacognitive awareness. Recording technology and traditional teaching methods combined together are able to provide opportunities for all three aspects and lead to increased oral proficiency.

## ACKNOWLEDGEMENTS

The author wishes to thank her colleagues Dr. Hlas and Dr. Lindseth for their collaboration and guidance, her student Laura Szymanski who helped initiate the project, as well as the students who participated in this study. She also received support from student differential tuition funds through the University of Wisconsin-Eau Claire's Faculty/Student Research Collaboration Differential Tuition Program.

## ABOUT THE AUTHOR

Jessica Sertling Miller (Ph.D., University of Illinois at Urbana-Champaign), a native of Strasbourg, France, is an Associate Professor of French at the University of Wisconsin-Eau Claire. She teaches all levels of French courses, from beginner to linguistics and advanced conversation. She also supervises students in the French Education program. She has most recently published work on foreign language pedagogy and co-authored a textbook on French pronunciation, *Sons et Sens* (2013).

Jessica S. Miller  
University of Wisconsin-Eau Claire  
Foreign Languages, Hibbard 378  
Eau Claire, WI 54702-4004  
Home: (715) 254-1347  
Office: (715) 836-4267  
E-mail: millerjs@uwec.edu

## REFERENCES

- ACTFL/NCATE program standards for the preparation of foreign language teachers*. (2002). Yonkers, NY: American Council on the Teaching of Foreign Languages.
- Anderson, N. J. (2008). Metacognition and good language learners. In C. Griffiths (Ed.) *Lessons from good language learners* (99-109). Cambridge University Press.
- Chinnery, G. M. (2006). Going to the MALL: Mobile assisted language learning. *Language Learning & Technology*, 10(1), 9-16.
- Cooper, M. M., and Sandi-Urena, S. (2009). Design and validation of an instrument to assess metacognitive skillfulness in chemistry problem solving. *Journal of Chemical Education* 86 (2), 240-245.
- Ducate, L. & Lomicka, L. (2009). Podcasting: An effective tool for honing language students' pronunciation? *Language Learning & Technology*, 13(3), 66-86.

- Graham, S. (2006). A study of students' metacognitive beliefs about foreign language study and their Impact on learning. *Foreign Language Annals*, 39(2), 296-309.
- Henn, S. (2012). On Utah's 'Silicon Slopes,' Tech Jobs Get a Lift. *NPR* Retrieved from [www.npr.org/2012/03/12/148252561/on-utahs-silicon-slopes-tech-jobs-get-a-lift](http://www.npr.org/2012/03/12/148252561/on-utahs-silicon-slopes-tech-jobs-get-a-lift)
- Krashen, S. (1982). *Principles and practice in second language acquisition*. Oxford: Pergamon Press.
- Lord, G. (2008). Podcasting communities and second language pronunciation. *Foreign Language Annals*, 41(2), 364-379.
- Lindseth, M. U. (2010). The development of oral proficiency during a semester in Germany. *Foreign Language Annals*, 43(2), 246-268.
- McCarty, S. (2005). Spoken Internet to go: Popularization through podcasting. *The JALT CALL Journal*, 1(2), 67-74.
- McCroskey, J. C., & Richmond, V. P. (1991). Willingness to communicate: a cognitive view. In M. Booth-Butterfield (Ed.). *Communication, cognition, and anxiety*, 19-37.
- MacIntyre, P. D. (2007). Willingness to communicate in the second language: Understanding the decision to speak as a volitional process. *The Modern Language Journal*, 91, 564-576.
- Miller, J. S. & Hlas, A. (2010). The possibilities and potential of podcasting. In M. Bloom and C. Gascoigne (Eds.). *Central States Conference Report 2010*, 27-44.
- O'Bryan, A., & Hegelheimer, V. (2007). Integrating CALL into the classroom: The role of podcasting in an ESL listening strategies course. *ReCALL*, 19(2), 162-180.
- O'Malley, J.M. & Chamot, A.U. (1990). *Learning strategies in second language acquisition*. Cambridge: Cambridge University Press.
- Onsrud, E. M. (2009). *Podcasting in the foreign language classroom: Improving communication*. (Unpublished Master's thesis). University of Wisconsin-Stout, Menomonie, Wisconsin.
- Rivers, W. P. (2001). Autonomy at all costs: An ethnography of metacognitive self-assessment and self-management among experienced language learners. *The Modern Language Journal*, 85(2), 279-290.
- Rosell-Aguilar, F. (2007). Top of the pods: In search of a podcasting "podagogy" for language learning. *Computer Assisted Language Learning*, 20(5), 471-492.
- Schraw, G. and Dennison, R. S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology*, 19, 460-475.
- Schraw, G. (1998). Promoting general metacognitive awareness. *Instructional Science*, 26, 113-125.
- Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in Second Language Acquisition*, 235-256. New York: Newbury House.
- Tanner, K. D. (2012). Promoting Student Metacognition. *Cell Biology Education—Life Sciences Education*, 11 (Summer): 113-120.
- Thompson, D. R. (2012). Promoting metacognitive skills in intermediate Spanish: Report of a classroom research project. *Foreign Language Annals*, 45(3), 447-462.
- Thorne, S. L., & Payne, J. S. (2005). Evolutionary trajectories, Internet-mediated expression, and language education. *CALICO Journal*, 22(3), 371-397.