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## Do You See What I See? Using ELAN for Self-Analysis and Reflection

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Using ELAN for Self-Analysis and Reflection

# Do You See What I See? Using ELAN for Self-Analysis and Reflection

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## Abstract

This commentary discusses the application of video annotation software (ELAN) in the Auslan–English interpreter-training program at Macquarie University, Sydney, Australia. It gives an overview of the program’s context and highlights experience-based learning as one of the key pedagogical approaches being used to foster student self-analysis and reflection. In order for students to analyze their own interpreting performances, they must first be recorded, so the article touches on the rationale and some techniques for the video capture that provides the data for subsequent ELAN analysis. Examples of activities based on the use of ELAN software are then discussed.

Keywords: ELAN, reflective learning, experience-based learning, video, signed language interpreters, self-assessment

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# Do You See What I See? Using ELAN for Self-Analysis and Reflection

## 1. Context

The postgraduate diploma of Auslan-English interpreting at Macquarie University, Sydney, Australia, is a small and specialized government-subsidized program<sup>2</sup> that was established in 2002 in response to the dearth of trained professional-level interpreters working with deaf communities around Australia. The program structure has recently been expanded: eight units (four core, four elective) are now offered part time over 2–4 years in “blended” mode. Each unit is one semester in length and taught via a mix of online (moodle platform<sup>3</sup>) interaction, plus one or two on-campus 3-day blocks, for face-to-face delivery. We enroll approximately 8 to 10 students per year, who are already practicing interpreters with minimum entry-level interpreting qualifications<sup>4</sup> plus at least 2 years’ work experience (see Napier, 2006, for a more in-depth description of the program structure and development). This commentary piece is written from both my current role as program convenor and my experience as a graduate of the program.

For most students, it has been quite some time since they undertook any formal education, so they often need to “learn how to learn” in an academic environment. In addition, they have little opportunity for feedback and reflection on their professional practice, so they start the program somewhat disconnected from the quality and impact of their interpreting decisions and output. As Fowler (2007) suggests, interpreters who are not self-aware are unable to evaluate their own performance, nor address any shortcomings, which is a professional liability. One of the aims of any interpreter training program (ITP) is to therefore develop self-assessment, critical analysis, and decision-making skills—core competencies that underpin more specific interpreting skills and knowledge (Winston, 2005, 2006). These qualities are embedded in all Macquarie University programs as part of required “graduate capabilities.” As we offer a part-time program, with students who are already practitioners, we have the opportunity to apply classroom (on-site and online) learning to students’ concurrent interpreting experience in the “real world,” and vice versa.

## 2. Experience-Based Learning and Reflection

The centre of learning is experience: your own subjective experience...this puts the learner (not the teacher) at the centre of the learning process. (Kolb, 2008).

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<sup>2</sup> Student fees are subsidized by the federal government to encourage student enrollment in selected programs that meet identified community or industry need.

<sup>3</sup> Moodle is software that supports Internet-based courses and is used by many colleges and universities.

<sup>4</sup> Australian interpreters (across all language pairs, spoken and signed) are accredited by the National Accreditation Authority for Translators and Interpreters (NAATI). Auslan-English interpreters are currently able to be qualified at NAATI paraprofessional and professional levels.

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Adult educators since Dewey (1938) have suggested that learner experience is the means and goal of education; however, the 1980s saw the start of a major paradigm shift from from teacher-centered to student-centered curriculum design. Theorists such as Brookfield (1993), Boud (1995), Kolb (1984), and Schon (1987) have focused attention on the importance of engaging learners by incorporating and building on their own experience. This includes educators bringing prior learning to a new situation in the life experience of the learner, as well as designing learning processes in which the experience of the learner is used as the prime source and stimulus for learning (English, 2005).

An inherent part of the experience-based learning (EBL) approach is to create the opportunity for learners to synthesize their experience after the fact. Boud, Keogh, & Walker (1985) emphasize the importance of processing and integrating our own experience into learning through reflection, both individually and via group discussion. They suggest that following the experience (the behavior, ideas, feelings), the learner needs to return to it—to examine both positive and obstructive feelings and outcomes that arise. In this way the experience is reevaluated more objectively, which can lead to new perspectives or changes in behavior.

Although EBL is not the only pedagogical approach used in our program (problem-based learning and collaborative learning, for example, are overlapping and equally relevant frameworks), it can be a powerful perspective. Examples of learning activities (already familiar to ITP educators) that elicit and/or respond to student experience include:

- Choosing case study discussion topics (translation and/or behavioral decisions) based on students' own experiences, so that they "own" the content.
- Simulated experiences, such as interpreted role plays, that are set up as authentically as possible (e.g., with real doctors, lawyers, deaf professionals, etc.) and act as catalysts for self-analysis and discussion (see Metzger, 2000, for a comprehensive description of this in practice).
- Submission of mid-semester and end-of-semester reflective journaling, about which concepts and experiences, from students' unit readings and learning activities, resonate (or not) with their outside interpreting practice.

For some learning activities, the focus is on students experiencing, and then reflecting on, what it is like to be the "other" in interpreting and classroom interactions. These activities include:

- Learning how to provide effective peer feedback, by starting with their perspective as the receiver.
- Watching video clips of their own interpretations (from their outside practice, or classroom-generated) with only the target text available, that is, without sound (for English-to-Auslan monologues), or without looking (for Auslan-to-English monologues). In this way, they experience, and can then analyze, the respective client's access to the information, without being beguiled by the source text.
- Participating in a simulated interpreted meeting as a deaf client (via earplugs plus earmuffs), where the majority of participants are hearing, so that students directly experience limited access to information.
- Participating in a simulated mainstream classroom as a deaf student (again with earplugs & earmuffs), to experience the compromise of reliance on multiple information sources at the same time.

One of the challenges to accessing any interpreting experience is the ephemeral nature of oral target texts. Unless interpretations are reflected upon (either individually or in discussion) soon after the event, their form, content, and process can easily be lost. Another compounding dimension of our particular language pair is dual modality: working between a signed and a spoken language. The students' capacity to hear their spoken output, although imperfect, makes it easier to monitor and remember than their signed output—they can't see themselves in the way that they can hear themselves. Given that the majority of students coming through the training program are not native signers, monitoring the production of what for these students is their least fluent language is even more problematic. Consequently, like many ITPs, Macquarie has been using video technology to capture student

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performance for feedback and reflection, since the program's inception. More recently, we have added ELAN analysis as a further step in the process.

### 3. Video Capture

The capacity to revisit performance, and to do so in detail, reveals a wealth of feedback data for interpreting, as well as for other "practice professions" (Dean & Pollard, 2005). Xiao, Seagull, Mackenzie, and Klein (2004) describe video capture in medical settings as allowing "time-shifted" analysis for repeated and fine-grained review. In sports training, video feedback has been invaluable in improving performance, but learners need to "see" their performances to gain maximum benefit from feedback sessions (Miller, Doering, & Scharber, 2010). If interpreters can witness and learn to critically analyze their behaviors and decisions, they can become more autonomous learners over time.

Brookfield states that "our experiences as learners provide us with a powerful lens through which we can view our own practices as educators in a more formalised and purposeful way" (1994, p. 156). As a former student of the program, I remember the difference between being told what I was doing (via verbal feedback immediately after an interpreting task, or via written notes on an assessment rubric long after the event) versus seeing it (and believing it) for myself, on video. I also remember how illuminating and confronting it was to closely analyze filmed interpretations of my own work.

Some of our students have videoed themselves in earlier training courses (when VHS was the dominant format), but this practice has not been continued into their working careers. The video-capture process has changed markedly even in the last few years, by virtue of improving technology, storage capacity, and reducing cost. As Bowen-Bailey & Gordon (2004, p. 107) note, the move to digital video technology has made it possible for us to work with more "speed and precision, freeing us to focus on the learning experience." The ability to view a text frame by frame, without loss of definition, allows greater access to detail; it is a natural partner to the study of signed languages and signed language interpreting.

At Macquarie we predominantly use two digital video-capture methods. One is via desktop computer filming of student interpretations in our Mac lab.<sup>5</sup> We use Panda software<sup>6</sup> that has added dubbing and annotation options, but any built-in webcam can be used. This is useful for monologic interpreting tasks, where the source text can be provided live or from recorded media. Panda creates mp4 files, for immediate, or later, analysis. This capture is most successful when working from English into Auslan, as the source text (ST) and target text (TT) are automatically jointly recorded. The ST sound can be available or muted in later review. In this language direction, it is easy for multiple students to record themselves simultaneously. The partitions that divide the booths can be extended for exam conditions so that students cannot see each other's signing.

When working in the other language direction, two issues arise. The first is competing TT sound interference between students. In the absence of conference-interpreting-style booths, we address this by supplying students with earplugs plus earmuffs, which cut out intelligible sound from the renditions of their peers as they interpret. We also seat them further apart, so that their headphone mics don't pick up too much external sound—this necessitates more than one shift of candidates for testing in larger groups.

The second issue is the capture of both the ST and TT (as the built-in computer camera only records the student speaking and not the TT he or she is watching). When filming in the lab, we are able to use Panda to overdub video clips of signed STs. As this software is only available for Macs, is licensed to the university, and is no longer supported, this option is limited. In PC labs, or when working on Macs without Panda, we sometimes use pocket digital video cameras (discussed in the second method of video-capture, below) pointed at the signed ST on the computer screen, as the student interprets. The camera's microphone picks up the student's English

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<sup>5</sup> We have 12 iMacs in booths along opposite walls.

<sup>6</sup> Developed by the Centre for Deaf Studies at the University of Bristol in the U.K., as part of their SignLab learning suite. As far as I am aware, this software is no longer available for purchase.

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rendition, so both TT sound and ST vision are available for analysis. When the Auslan ST media is only available via a data-projected screen at the front of the room, or when we don't have enough cameras, we just record the students' English TT at their computers and supply a transcript of the ST for later analysis instead.

The second method we use for video capture is via high-definition pocket digital video cameras, for filming interactions which would be awkward to anchor to a desktop camera, for example, dialogic interpreting or multi-party meetings (either in the lab or in external settings). We have been using Flip cameras<sup>7</sup> as they are small and lightweight, have excellent vision quality, and have a direct camera-to-computer USB connection, so that the video content is available for immediate analysis and feedback—this is particularly useful for time-poor teachers and learners. Unfortunately Flip cameras are now being phased out,<sup>8</sup> but pocket video camera alternatives that also feature an in-built USB arm are available, including Sony Bloggie and Kodak Playfull. Many students now have smartphones with sufficient video-recording capacity. On entry to the program, all students are required to purchase some form of small digital video camera, so that they can film themselves in classroom activities, in their work (with relevant permissions), and at home.

Once captured, interpreted texts can be shared via memory stick or cloud storage (e.g., Dropbox).<sup>9</sup> We also use a selection of prerecorded English source texts, Auslan source texts, and videoed interpretations by other practitioners for practice and analysis.

It's easy to be seduced by the bells and whistles of digital technology (Bowen-Bailey, 2006), but digital technology is not always available, nor is it appropriate in every case. The process can be time consuming, especially when technology fails (Bowen-Bailey & Gordon, 2004). Getting face-to-face peer or teacher feedback in the moment is just as valuable and can be less confronting. However, there is value and reward in revisiting the detail and nuances of interpreter performance (especially our own), when there are so many variables to disambiguate. Regular filming is therefore highly recommended, especially when the analysis can be done with ELAN.

#### 4. EUDICO Linguistic Annotator (ELAN) as an Analysis Tool

ELAN was developed by the Max Planck Institute for Psycholinguistics in the Netherlands, based on video-editing software. It is specifically designed for the annotation and analysis of spoken and signed languages, and gesture, and it is being adopted widely for language analysis and research. It is free to download<sup>10</sup> and works with both Windows and Mac OS platforms, so it is ideal for student use. Using ELAN, interpreting students are able to annotate digital video files—mapping the video clip for easy navigation and recording their observations and transcriptions at the exact points that they occur, time-aligned to the source. ELAN annotations can be searched and exported for further analysis (e.g., via Excel). This has classroom teaching, independent-study, and further research applications.

<sup>7</sup> Thanks to a presentation by Dr Suzanne Erlich at the 2009 Australian Sign Language Interpreter Association (ASLIA) national conference.

<sup>8</sup> As of the end of 2013, the manufacturing company, Cisco, will no longer be producing or supporting Flips. Despite some reports of "short life" issues, we have not experienced any difficulties with Flip camera use over time so we will continue using them until they "expire."

<sup>9</sup> Approximately 6 minutes of high-definition digital video uses 1GB of storage, so emailing is not yet a transfer option.

<sup>10</sup> Mac OS or Windows versions can be downloaded from <http://www.lat-mpi.eu/tools/elan/download>

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Figure 1: Macquarie University Auslan video lab, showing students using ELAN for self-analysis.

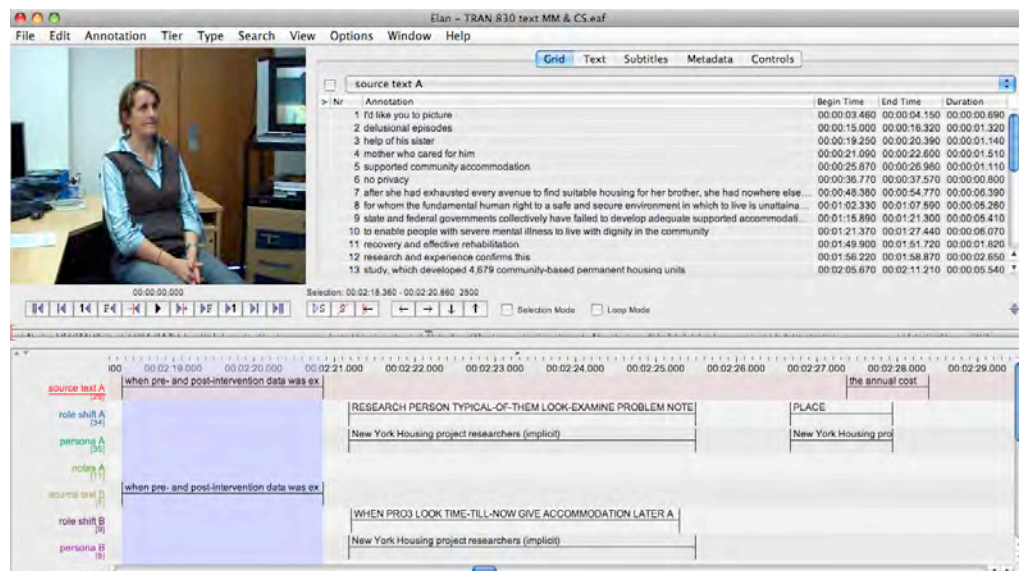


Figure 2: Screen shot of ELAN file showing linked video clip with playback controls (top left), tiers for each variable being analyzed (bottom left), annotations that have been added as the video was played (rest of lower half of screen), and the data being generated across tiers, ready for export (top middle and right of screen).

I was introduced to ELAN via Auslan linguistics research and could see its potential as a tool for interpreter training—I remembered the laborious logging of Auslan and interpreted video clips for my own assessment tasks. When I joined the Macquarie signed language interpreter (SLI) teaching team in 2008, I took the opportunity to apply ELAN to classroom learning and was validated by the immediate and positive student response, as per these typically effusive recent comments:

The ELAN software is an excellent tool for self-evaluation. It provides the ability to critique our own performance as an interpreter that will be very useful for evaluating and developing skills in a safe environment. I'm confident this personal and professional development tool will enhance my future interpreting skills. (student journal feedback, 2011).

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Best of all I would have to say ELAN has been an amazing piece of technology, especially for the visual language that we are all involved in. I must say I love to hate it, because “wow,” this made a huge impact on me in terms of what I am producing. To be able to analyse this much has been a blessing to my interpreting education.

(student feedback, 2011).

As the convenor of the first unit in the Macquarie program, I introduce students to ELAN on the first day of their first on-campus block. From then on, the rest of the teaching team use it for different tasks, on and off campus, throughout the program. It takes a 1-hour training session to get students started on their initial interpreting analysis activity (see below). It is important to note that ELAN is just video annotation software—it enables analysis, but it cannot do the analysis. It is a window into data, but looking is not seeing, and it is often difficult for students to notice anything meaningful (except how their hair looks!) at the first pass of a video clip. The things they next tend to notice in English-to-Auslan interpretations are obvious linguistic features, like the production of particular signs, or fingerspelling, or nonmanual expressions. As Dean and Pollard (2005) note, interpreters in the early stages of their careers are still attending to mastery of the signed language. Students need to incrementally learn what to look for as they are taught different constructs. ELAN allows for the creation of annotation tiers relating to selected variables for attention, which act as a template with which to view the data. In this way, the students are not overwhelmed by trying to notice everything at the same time.

To demonstrate some ways that we use ELAN in the program, the following section explains how I introduce it and use it in the first on-campus block. TRAN 863 is the first core unit of the program. On their first 3-day block, students meet each other and the lecturers for the first time. They are usually quite nervous about how their interpreting efforts will “stand up” in front of their peers.

Activity 1: Students are provided with a 5-minute clip of a graduate student (with permission), from a monologic interpreting task early in her program, when there were plenty of obvious skills gaps. This is less confronting for the students than watching themselves first up, and it shows them that they too can improve over time. Before the students learn how to open the clip in ELAN, we discuss a framework for analysis that they are already familiar with from the readings: Cokely’s (1992) miscue analysis. We explore the broad concepts of omissions, additions, substitutions, intrusions, and anomalies using examples from their own experience.

We follow a “Basic Introduction to ELAN” guide (which I created as a reference for students’ home study), to open an ELAN file with the clip, and we add Cokely’s omission categories as annotation tiers. I demonstrate the steps as the students go, via the data projector. I always get them to add an extra annotation tier for “comments”—anything that they notice along the way that is of interest or that they want to ask about.

Once the tiers are set up, the students practice inserting and deleting annotations, before they analyze the interpretation for themselves. This begins their mapping of the clip, allowing them to jump to any annotated segment, slow it down if they need to, or to view it a few times. Inevitably, they get sidetracked by other features that they are noticing and make a few annotation errors as they get used to the software and the taxonomy. They are asked to watch the clip with and without the sound of the English ST and comment on the difference. (They need the sound to check how accurate the message transfer is, but they see it more realistically when they watch with “deaf-client eyes”).

At the end of the annotation time (20–30 minutes), the students can tally the number of annotations for each miscue type to get a sense of the patterning of the errors (as per Napier, 2005). Next, they pair up to compare tallies and observations, before we discuss the process and its outcomes in the full group. We explore the “why” behind some of the miscue behaviors, by getting students to identify and replay examples from their annotated clips and by drawing on their own experience to imagine possible reasons for the interpreter’s choices. In this way, students start to learn that the root causes (Weisman, 2008) are usually more interesting and important than the presenting “symptoms.” By this stage they have unwittingly developed a basic functional competency in using ELAN.



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Activity 2: Next, the students film themselves (using Panda) interpreting a short English monologue (similar to the text they analyzed in Activity 1). They then create the same ELAN tiers and apply the miscue analysis in their annotations of themselves. Again, they move into pairs (of similar skill, so that they are not too daunted) and compare what they have noticed. In the full-group discussion, the “why” is more readily available, as they generally remember (and can see) very clearly what was happening for them in the moments they marked and annotated. Napier’s (2002) taxonomy of omissions is then introduced, and the students revisit their omission annotations to see how this less-error-focused approach applies to their choices.

Activity 3: We discuss each of the English-to-Auslan monologic interpreting criteria that the students will be assessed against, to make sure they understand the concepts before applying them in self-assessment. Then they are videoed interpreting a second English monologic ST. This time they choose three TT features from the rubric that they wish to focus on (e.g., use of time lag, role shift, prosodic features, etc.) and create matching ELAN annotation tiers, along with the “comments” catch-all tier. Again, they start annotating solo, then share observations in pairs. But rather than finishing with general discussion, this time I come and sit alongside each student in turn, with other students watching on. One by one, the students take me through what they have annotated so far, which gives me access to what and how they are “seeing.” In the allocated time (5–10 minutes for each student), I select a couple of their annotated examples (and ones that haven’t been noted yet) and explore what was happening for them in that moment, before we canvas possible alternative responses. This enables me to role-model feedback techniques, before we cover peer-assessment strategies as the next topic. As Fowler (2007) notes, proficiency in peer assessment leads to more skilled self-assessment.

The on-campus block continues with a variety of activities related to the topics at hand, some of which include further application of ELAN. The students go home after the block able to use ELAN independently for text analysis. In later units, students use ELAN to analyze data in a range of tasks, including:

- Discourse analysis report, based on an Auslan text. Students select a discourse feature that they wish to better understand and improve in their own signing.
- Linguistic analysis of Auslan corpus texts to identify grammatical elements.
- Self-analysis report, of a filmed “real world” interpretation, applying demand-control schema (Dean & Pollard, 2005).
- Self-analysis report, of their interpretation in a filmed moot court role play, linking their observations to related readings.

We are still exploring potential applications, for our students and ourselves.

Although this is clearly a glowing report of how useful and necessary ELAN has become to our program, like any software, it is not without technical glitches, especially away from the controlled environment of the lab. ELAN is designed for use with both Macs and PCs, but the variable age, configuration, and capacity of student computers means that occasionally ELAN cannot be uploaded or doesn’t function reliably (this is more common with PCs). To their credit, the software designers have continuously updated versions of ELAN, responding to user feedback, ironing out bugs, adding new features, and keeping it free. It is therefore recommended to download new versions as they become available.

## 5. Broadening Its Use

In an effort to “spread the word” about ELAN as a tool for self-analysis (and assessment and research) to signed and spoken language interpreting and educator colleagues, I have presented at a number of translation and interpreting conferences on the potential applications of using ELAN, and I have been invited to give hands-on workshops to interpreters across Australia.

During 2010 and 2011, as an extension of the domestic delivery of our program, I, with Jemina Napier (who now oversees the translation and interpreting section here at Macquarie) and Rachel McKee—our counterpart at Victoria University, Wellington—jointly adapted and delivered the postgraduate diploma in New Zealand. We

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used the same experience-based and reflection-focused techniques, supported by ELAN analysis, which were revelatory to that cohort as well.

Signed language linguistics researchers routinely use ELAN for the creation and analysis of research data, and a number of our recent interpreting graduates are pursuing master's-level research using ELAN for their analysis—they have never known anything else.

If you are an interpreter or interpreter trainer and have not yet considered using ELAN as one of your teaching, learning, or research tools, I hope this article encourages you to investigate the possibility.

## 6. References

- Boud, D. (1995). *Enhancing learning through self-assessment*. Philadelphia, PA: Kogan Page.
- Boud, D., Keogh, R., & Walker, D. (1985). Promoting reflection in learning: A model. In D. Boud, R. Keogh, & D. Walker (Eds.), *Turning reflection into learning*. London, UK: Kogan Page.
- Bowen-Bailey, D. (2006). Putting theory into practice: Creating video resources for discourse-based approaches to interpreter education. In C. Roy (Ed.), *New approaches to interpreter education*. Washington, DC: Gallaudet University Press.
- Bowen-Bailey, D., & Gordon, P. (2004). Making your presentation shine: Incorporating digital video in your teaching. In E. Maroney (Ed.), *Proceedings of the 15<sup>th</sup> national convention of Conference of Interpreter Trainers CIT: Still shining after 25 years* (pp. 105–124). Washington, DC.
- Brookfield, S. (1993). Through the lens of learning: How the visceral experience of learning reframes teaching. In D. Boud, R. Cohen, & D. Walker (Eds.), *Using experience for learning* (pp. 21–32). London, UK: SHRP & Open University Press.
- Cokely, D. (1992). *Interpretation: A sociolinguistic model*. Burtonsville, MD: Linstok Press.
- Dean, R., & Pollard, R. (2005). Consumers and service effectiveness in interpreting work: A practice profession perspective. In M. Marschark, R. Peterson, & E. Winston (Eds.), *Sign language interpreting and interpreter education: Directions for research and practice* (pp. 259–282). New York, NY: Oxford University Press.
- Dewey, J. (1938). *Experience and education*. New York, NY: The Free Press.
- English, L. (Ed.). (2005). *International encyclopedia of adult education*. Basingstoke, UK: Palgrave Macmillan.
- Fowler, Y. (2007). Formative assessment: Using peer and self-assessment in interpreter training. In C. Wadensjo, B. Englund Dimitrova, & A. Nilsson (Eds.), *The Critical Link 4: Professionalisation of interpreting in the community*. Amsterdam, the Netherlands: John Benjamins.
- Hooper, S., Miller, C., Rose, S., & Veletsianos, G. (2007). The effects of digital video quality on learner comprehension in an American Sign Language assessment environment. *Sign Language Studies*, 8(1), 42–58.
- Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.
- Kolb, D. (2008). *What is experiential learning?* [Podcast]. Retrieved from <http://www.learningfromexperience.com/>
- Metzger, M. (2000). Interactive role-plays as a teaching strategy. In C. Roy (Ed.), *Innovative approaches for teaching sign language interpreters*. Washington, DC: Gallaudet University Press.
- Miller, C., Doering, A., & Scharber, C. (2010). No such thing as failure, only feedback: Designing innovative opportunities for E-assessment and technology-mediated feedback. *Journal of Interactive Learning Research*, 21(1), 65–92.

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- Napier, J. (2002). *Sign language interpreting: Linguistic coping strategies*. Coleford, UK: Douglas McLean.
- Napier, J. (2005). Teaching interpreting students to identify omission potential. In C. Roy (Ed.), *Advances in teaching sign language interpreters*. Washington, DC: Gallaudet University Press.
- Napier, J. (2006). Educating signed language interpreters in Australia: A blended approach. In C. Roy (Ed.), *New approaches to interpreter education*. Washington, DC: Gallaudet University Press.
- Schon, D. (1987). *Educating the reflective practitioner*. San Francisco, CA: Jossey-Bass.
- Weisman, L. (2008). Self-analysis tools and techniques: Moving beyond symptomatic analysis to uncover root causes. In L. Roberson & S. Shaw (Eds.), *Proceedings of the 17<sup>th</sup> National Convention of Conference of Interpreter Trainers CIT: Putting the pieces together: A collaborative approach to educational excellence* (pp. 139–157). Conference of Interpreter Trainers.
- Winston, E. (2005). Designing a curriculum for American Sign Language/English interpreter educators. In M. Marschark, R. Peterson, & E. Winston (Eds.), *Sign language interpreting and interpreter education: Directions for research and practice*. New York, NY: Oxford University Press.
- Winston, E. (2006). Enhancing critical thinking and active learning in online courses. In E. Maroney (Ed.), *Proceedings of the 16<sup>th</sup> national convention of Conference of Interpreter Trainers CIT: A new chapter in interpreter education: accreditation, research & technology* (pp. 167–182). Conference of Interpreter Trainers.
- Xiao, Y., Seagull, F., Mackenzie, C., & Klein, K. (2004). Adaptive leadership in trauma resuscitation teams: A grounded theory approach to video analysis. *Cognition, Technology & Work*, 6, 158–164.