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Interpreter education in the International Year of Indigenous Languages

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Welcome to the first issue of Volume 11 of the *International Journal of Interpreter Education.* In this issue we bring you an exciting array of contributions from both signed and spoken language interpreting research from four different continents. It is gratifying to see an increased number of submissions to the journal, the breadth and quality of which is helping to develop the journal as a vehicle for interpreter educators globally to share experiences and best practice. Through this, we collectively gain a deeper understanding of interpreting pedagogy in a diverse world.

Before introducing the articles in this issue, we would like to start by reflecting on 2019 as the International Year of Indigenous Languages and on what that means for all of us involved in interpreter education. The increased flow of people around the world means societies are more diverse than ever in terms of their cultural and linguistic make-up. It may well be that the growing recognition of superdiverse societies has also helped encourage the revitalization and maintenance of indigenous languages (Fishman & García, 2010; Fishman, 2001). A greater interest in interpreting and translation from and into indigenous languages may mean there is increasing awareness of the rights of speakers of indigenous languages to express themselves in their mother tongue, through interpreters where necessary, rather than having to communicate in a second language (cf. Whalen, Moss, & Baldwin, 2016). This works to enrich the language and culture of society as a whole, for example with the translation of important cultural expressions such as the *waiata/mele* (songs) of Aotearoa New Zealand and Hawaii (Christophe, 2016) providing insights into the cultural heritage of indigenous communities to a wider global audience.

We are fortunate here in New Zealand that both NZ Sign Language and Te Reo Māori (the indigenous Māori language of NZ) are official languages. The annual conference of the New Zealand Society of Translators and Interpreters was held in Christchurch, New Zealand in early June, and was an official UNESCO event for the United Nations' International Year of Indigenous Languages. The conference started with an official *karakia* (prayer) and a keynote address by Ngahiwi Apanui, Chief Executive of Te Taura Whiri o te Reo Māori, the Māori Language Commission. Several of the presenters spoke about translating literary and other texts into indigenous languages, and issues concerning the alignment of translations within the existing cultural and historical contexts of those languages. Australian interpreter educator Magdalena Rowan gave an interesting presentation about

providing non-language specific training for interpreters in new and emerging languages, including indigenous languages, using innovative online technology. Non-language specific training (or the 'language neutral' classroom) is certainly gaining traction around the world, but there is a lot for educators in these contexts to consider, especially when educators themselves do not speak the indigenous or minority language. How do we frame our teaching in a culturally appropriate way? How do we teach in a highly multicultural and multilingual classroom? How can we best keep an open mind to learning and developing our own teaching as we go?

John Jamieson, a linguist who works with a number of different languages, gave the audience at the conference an insight into the connected nature of Te Reo Māori grammar and how this challenges what he called the disconnected world view that is evident in English as "an I-language". The overriding message that came out from his presentation was that we all need to be aware of how much our worldview is shaped by the language we grow up using, and how much we could learn from being challenged to look at the world differently (see, for example, Walsh & DeJoseph, 2003). As interpreter educators and researchers, it is thus our responsibility to be ever wary of the 'monolingual mindset' (Clyne, 2008), and to be open to worldviews that differ from our own or from the dominant view/s in society. When we are open minded to expanding our worldviews in the interpreting classroom, we can learn as much from our students as they do from us, and we can make our classrooms a more welcoming and safe place to practice interpreting.

This issue of IJIE also includes content on indigenous interpreter education and concludes with an interview with educators involved in a project aimed at teaching indigenous interpreters to interpret at the Navidad Medical Center in Salinas, California (by Cynthia Roat, Katharine Allen, Marjory Bancroft, and Angélica Isidro). Victor Sosa, the Co-founder of Indigenous Interpreting+®, a national indigenous language interpreting service, was the driving force behind developing The Indigenous Interpreter training program. The interviewees point out that traditional training approaches are often inappropriate for people raised in indigenous cultures. The trainers also report on their in-depth preparatory work, which included extensive consultation with the indigenous communities. The interview contains a link to the training manual which Katharine Allen and Marjory Bancroft compiled in close collaboration with Victor Sosa and Angélica Isidro, participants in the program, and the communities they represent. Readers can download the manual at no cost from this link.

Our research article section includes international contributions from both spoken and signed language interpreter education research. Weiwei Zhang and Zhongwei Song used data from interpreting contests in China to study the effect of self-repair on the judged quality of interpreting and discuss implications for the teaching of consecutive interpreting techniques. In the United States, Barbara Garrett and Emily Girardin studied the American Sign Language expressive competence of applicants wanting to gain entry into a four-year ASL English interpreting major. Their research addresses the valuable debate about the program length and curriculum required to produce competent interpreting graduates. Campbell McDermid, James Pope and Michael Conrad report on a study which aimed to investigate the efficacy of teaching English to ASL translation skills though an online delivery format. They conducted a mixed method evaluation of participants' translation work and evaluated participants' responses to the online lessons.

The commentary section of this issue of IJIE comprises a book review by Laura Maddux of the book *Here or There: Research on Interpreting Via Video Link* edited by Jemina Napier, Robert Skinner and Sabine Braun, and contains a variety of international contributions from research in this growing interpreting field.

The Open Forum comprises two interviews, the first of which was conducted by Hong Kong-based interpreter educator Ester S. M. Leung. Ester interviewed Nicole Lan Wei about preparing speakers of languages of limited diffusion for their role as medical interpreters in the Hong Kong healthcare system. The second interview is on the indigenous interpreter training program we mentioned earlier. The dissertation section provides a brief summary of new graduate research undertaken by Janis Cole (Gallaudet University, USA) "Storied Realities: An Examination of the Lived Experiences of Deaf Translators", Nicole Wei Lan (Hong Kong Baptist University) "Crossing the Chasm: Embodied Empathy in Medical Interpreter Assessment", and Rosie Henley (Victoria University of Wellington, NZ) "Sharing the Chairing? A case study investigating practices and impacts of sign language interpretation in meetings with deaf and hearing chairpersons".

The majority of contributions in this issue of *IJIE* show once again that our work as educators often involves identifying barriers faced by a specific group of learners and incorporating this knowledge when we plan our curricula. It also involves consulting and collaborating with members of the communities our graduates will interpret for. We hope that this journal will continue to be a platform which allows interpreting educators and researchers to expand our 'gaze' by sharing our experiences from around the world. Please do keep sending in

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your manuscripts to IJIE: we very much welcome new research articles, ideas for commentary pieces (for example on teaching or interpreting practice issues), as well as interviews. Also please remind your graduate students that the journal has a 'Student Work' section that is an ideal publishing stepping stone for new researchers.

And finally, returning to the theme of the UN International Year of Indigenous Languages, we would like to conclude this editorial with a Māori proverb which deeply resonates with all of us interpreters, interpreter educators and researchers.

> He aha te mea nui o te ao?
> He tangata, he tangata, he tangata
> *What is the most important thing in the world?*
> *It is the people, it is the people, it is the people*

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The Effect of Self-repair on Judged Quality of Consecutive Interpreting: Attending to Content, Form and Delivery

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Abstract

This paper investigates the correlations between self-repair and subjective assessments of student interpreters' performance in consecutive interpreting (CI). Twelve interpretations from an interpreting contest in China are transcribed, with the self-repairs identified and annotated based on Levelt's classification (1983), including both overt and covert repairs. In addition to the final scores awarded at the contest, different methods and raters are used to assess the comprising aspects of an overall quality, namely content, form and delivery. Statistical analysis shows that: (1) overt repairs have a strong positive correlation with content, and moderate negative correlations with form and delivery; (2) form and delivery are negatively correlated with covert repairs, in terms of the frequencies of repetitions and pauses, and the mean length of pauses; (3) the judges' overall assessments are more closely correlated with content than self-repairs. Finally, pedagogical implications for CI training are discussed, as are suggestions for future research.

Keywords: self-repair, interpreting quality, consecutive interpreting, subjective assessment, student interpreter

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The Effect of Self-repair on Judged Quality of Consecutive Interpreting: Attending to Content, Form and Delivery

Quality of interpreting is often defined as 'elusive' (Pöchhacker, 2012, p. 305) not only because the different parties involved in the interpreting interaction may have their own views and perceptions, but also because "the variability of perception extends… to the different criteria used in measuring it" (Pradas Marcias, 2006, pp. 25-26). Comprehensive surveys have been conducted to find out what professional interpreters perceive to be important criteria of quality assessment (Bühler, 1986; Chiaro & Nocella, 2004; Pöchhacker, 2012). For example, Pöchhacker's (2012) study showed that following the content-related criteria of *sense consistency* and *logical cohesion*, the prosody-related factor of *fluency* ranked as number three among the eleven linguistic-semantic and extra-linguistic factors carefully selected in his research. The criteria that are consistently used as variables of fluency include 'repairs', 'pauses', 'self-correction', 'fillers', 'hesitation', and 'repetition', as can be seen from Lee's (2015, pp. 231-236) summary of 24 previous studies on quality assessment methods. In Levelt's (1983) categorization, these factors are all regarded as forms of self-repair, and therefore self-repairs undoubtedly play a major role when assessing fluency in interpreting.

The phenomenon of self-repair has been of great interest in academia since Jefferson presented the 'Error Correction Format' (as cited in Rieger, 2002, p. 19). Research on classification, monitoring mechanisms, as well as internal and external triggers of self-repairs over the past decades has shed light on the cognitive process of language production. Speakers make pauses or corrections because of the presence of a monitoring mechanism in their mind; they balance their attention between different aspects of the speech and attend to certain kinds of errors or dysfluencies while ignoring others, depending on the context and on the task (Levelt, 1983). Certain subcategories of self-repair have also been investigated in studies of second language (L2) and interpreting quality assessment to explore the acoustic correlates of fluency, as well as the relationship between perceived fluency and perceived quality (Bosker, Pinget, Quené, Sanders, & De Jong, 2013; Cucchiarini, Strik, & Boves, 2000; Han, 2015; Pradas Marcias, 2006; Yang, 2002; Yu & van Heuven, 2017).

Most of the literature on self-repair in interpreting focuses on simultaneous interpreting (SI), while the role of self-repair in the quality assessment of consecutive interpreting (CI) is still under-researched. CI is not only an essential pedagogical component of conference interpreting training, it is also an important part of the curriculum for most undergraduate English majors in China. As CI requires coordinated cognitive efforts between listening comprehension, working memory, long-term memory and coherent target language production, CI training is believed to have not only effectively contributed to the skill set for conference interpretation, but also to students' overall language proficiency (Zhang & Wu, 2017). Therefore, a more comprehensive investigation of the effects of self-repairs on the perceived quality of interpreter performance may provide theoretical implications for interpreting studies. Moreover, the results may be of pedagogical significance as well because self-repair provides insight into interpreters' monitoring mechanisms in the interpreting process.

This paper sets out to investigate the effect of self-repair on the judged performance of undergraduate students in CI, using data from the semi-final of an English to Chinese interpreting contest for university students in China.

The effect of self-repair on consecutive interpreting quality

The authors acknowledge that a holistic assessment of interpreting quality involves an interplay of different criteria, however in this paper they will focus on an attempt to explore the correlations between self-repair and perceived quality in view of the three categories of *content*, *form* and *delivery*.

1.   Self-repair

1.1.   Self-repair in L1 and L2 language production

Levelt (1983) is widely acknowledged to have made a pioneering effort in describing a priori categories and the distribution of self-repairs. Based on an analysis of a large corpus of self-repairs spontaneously made by Dutch-speaking participants in a task, he argued that speaker's self-monitoring was probably based on parsing their own inner or overt speech. As interpreting is also a complex process of language production, his theory allows us a perspective on how interpreters monitor their inner speech, the *sense* derived from the source text, as well as their overt speech, the interpreting product.

Levelt (1983) describes a typical repair as comprising of three parts: the *original utterance* (OU), which contains the *reparandum*, the item to be repaired; the editing phase, which may or may not contain an *editing term* (ET), (uh, well, etc.); and the *repair* (R) proper, which contains an alteration (also referred to as *reparatum* in subsequent studies, e.g., van Hest, 1996). In light of this description, self-repairs are grouped into two categories: overt repairs and covert repairs, the difference being whether the *reparandum* is articulated or not. A summary of Levelt's classification is shown in Table 1.

Table 1: Classification of self-repairs in Levelt (1983)

Overt Repairs	***Different information repairs (D-repairs)***	current message replaced by a different one
	Appropriateness repairs (A-repairs)	AA-repairs ─ ambiguity reduction AL-repairs ─ appropriate level terminology AC-repairs ─ coherence with previous text ALC-repairs ─ AL or AC
	Error repairs (E-repairs)	EL-repairs ─ lexical repairs ES-repairs ─ syntactic repairs EF-repairs ─ phonetic repairs
Covert Repairs	***Pauses***	silent and filled pauses
	Repetitions	repetitions of one or more lexical items
Rest Category	***R-repairs***	repairs that defy any systematic categorization

Variance in the distribution of self-repairs can be arguably explained by the speech production theory and perceptual loop theory formulated by Levelt (and others) (as cited in Kormos, 1999). According to this model of speech production, speech processing comprises of five principal components: the conceptualizer, the formulator, the articulator, the acoustic-phonetic processor, and the parser. When producing a speech, speakers first conceptualize the message, before formulating its language representation, and finally articulating it. The perceptual loop theory assumes that a speaker monitors the speech production processes through three loops: the preverbal message is inspected against the original intention before going into the formulator; the formulated message then goes through covert or pre-articulatory monitoring before articulation, and finally the generated utterance is checked after articulation, in very much the same way that we check others' utterances (Kormos, 1999).

Based on these theories, linguistic, cognitive, pragmatic and psychological triggers of self-repairs have been investigated, and the varied distributions can be explained with the assumption that speech production monitors are more sensitive to certain types of errors in line with the characteristics and the context of a particular task. For example, studies find that speakers adopt self-repair as a strategy to gain planning time when they are cognitively strained (Al-Harahsheh, 2015; Rieger, 2003). Further, significant correlations are found between working memory capacity (WMC) and the number of different types of self-repairs in L1 and L2: L1 speakers with a larger WMC can allocate more attention to the norms of appropriacy, thus more Appropriateness repairs (A-repairs), while L2 speakers with larger WMC pay more attention to form, hence more Error repairs (E-repairs) (Mojavezi & Ahmadian, 2014). Many other studies have confirmed a relationship between self-repair and L2 proficiency. L2 speakers with a higher proficiency attend more to A-repairs, in comparison to lower proficient L2 speakers who attend more to E-repairs and Different information repairs (D-repairs) (Hennecke, 2017; Kormos, 1999; van Hest, 1996; Yang, 2002).

1.2. Self-repair in interpreting

The phenomenon of self-repair has also been investigated in interpreting studies, drawing on findings from L1 and L2 language production research. SI studies focus more on covert repairs, including pauses (filled and unfilled/silent) and repetitions, in interpretations from the second or B-language into the native or A-language. Thus, Plevoets and Defrancq (2016) explore the relationship between informational load and the occurrence rate of the editing term *uh(m)* and find that interpreters produce significantly more *uh(m)'s* than non-interpreters, which lends support to the notion that interpreting is a cognitively more demanding task than L1 and L2 speech production. Their study also finds that the input side and the output side compete for cognitive resources and pose challenges of a different nature to interpreters. In an earlier study, Petite (2005) investigates the input and output triggers of repairs and finds strong evidence that simultaneous interpreters not only repair input-generated errors to achieve greater resemblance to the source text, but also more frequently resort to output-generated repairs to achieve greater relevance, to make it easier for the receivers to understand the message.

Research on self-repair in CI is more focused on describing the distribution of different types of self-repairs, especially with a view to the discrepancies between A and B target language production, and between higher and lower interpreting competence. Some argue that problems with retrieving information from notes contribute as much to pauses as language skills (Mead, 2000; Xu, 2010), which is another interesting topic that needs more empirical evidence from future research. Also, B language proficiency has been found to play a prominent role in the occurrence of self-repair in students' interpretations (Dai, 2011; Mead, 2000; Yu, 2012; Zeng & Hong, 2012). For this reason, the authors opted to focus on A language interpretations, in an attempt to explore the correlation between self-repair and perceived interpreting quality, rather than B language proficiency.

1.3. Self-repair and interpreting quality assessment

Interpreting quality assessment can be approached from multiple perspectives and dimensions using different sets of standards and criteria (Pöchhacker, 2001). Subjective judgements can be made from various perspectives of the interpreters themselves, the users (listeners, speakers) and also the commissioners of the interpreting services (Gile, 1991), while researchers as 'external observer[s]' may take an interest in 'objective' measures of the interpreting product (Viezzi, 1996, p.12, as cited in Pöchhacker, 2001, pp.411-412). A wide range of methodological tools have thus been developed to make both measurements possible, including, for example, surveys and impression/holistic scoring for subjective assessment, and error counts, propositional scores and even acoustic features as parameters for objective quality assessment (Lee, 2015; Pöchhacker, 2001).

In response to the notion that evaluating interpreter performance in the classroom should receive scholarly attention, Lee (2015) conducted an online questionnaire survey of interpreter trainers, and grouped a final list of 21 weighted criteria into three categories: content, form, and delivery. While perceptions certainly vary regarding what criteria should be incorporated to represent each category, the three broad categories described by Lee (2015) would be generally agreed upon, especially given the face-to-face communication genre of CI.

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Examiners' holistic judgement is still heavily relied upon in interpreter training programs, and one of the problems with subjective assessment as revealed in previous experiments is the so-called 'halo effect' (Fulcher, 2010, p.209, as cited in Lee, 2015, p.230), where the judgement of one particular criterion affects that of other criteria used in one assessment. For example, pauses as a subparameter of fluency have a negative effect on fluency evaluation (Pradas Marcias, 2006), while a lower fluency in turn shows a tendency to impact negatively on perceived quality (Rennert, 2010; Yu & van Heuven, 2017). Therefore, it is necessary to explore further how these variables of interpreting quality are related to and affect one another.

Research on how prosodic factors influence interpreting performance mainly draws on quantitative assessment of L2 fluency, such as the ones shown in Table 2, in which filled pauses, repetitions, restarts, and repairs are transcribed exactly as they were uttered and then counted, and silent pauses are detected by running software and then automatically computed. Different quantitative measures are adopted in these three studies, and the variables which fall into categories of self-repairs are bolded by the authors.

It should be noted, however, that a cut-off point of 0.25 seconds is taken in Yu and van Heuven's (2017) research, but no differentiation is made between syntactic and non-syntactic pauses. The position of pauses plays a strong role in subjective experience because we are more tolerant of pauses between sentences or phrases and sometimes perceive a pause where there is no actual interruption (Rennert, 2010). Therefore, acoustic measures should be combined with subjective assessment to make better judgement of perceived pauses.

Table 2: Self-repair in quantitative measures of fluency

Cucchiarini et al. (2000), L2	Bosker et al. (2013), L2	Yu & van Heuven (2017), CI
Seven primary variables	*Speed*	Articulation rate
Articulation rate	Mean length of syllables (MLS)	Speech rate
Rate of speech		Effective speech rate
Phonation/time ratio	*Breakdown*	**Number of silent pauses**
Mean length of runs (Mean number	**Number of silent pauses (NSP)**	**above 0.25 seconds in**
of phonemes between silent pauses)	**Number of filled pauses (NFP)**	**duration**
Mean length of silent pauses	**Mean length of silent pauses (MLP)**	**Mean length of silent pauses**
Duration of silent pauses per minute		**longer than 0. 25 seconds**
Number of silent pauses per minute	*Repair*	**Number of filled pauses (uh,**
	Number of repetitions (NR)	**er, mm, etc.)**
Two secondary variables	**Number of corrections (NC)**	**Mean length of all filled**
Number of filled pauses per minute		**pauses;**
Number of disfluencies per minute		**Number of pauses**
		Mean length of pauses
		Number of other disfluencies
		Mean length of fluent runs
		Phonation/time ratio

Another problem with quantitative assessment is that using a larger number of acoustic measures would increase the chance of confounding the different measures. For example, the relative contribution of *speech rate* and *mean length of silent pauses* to perceived fluency would remain unclear because both measures depend on the duration of silent pauses. Therefore, correlations among acoustic measures should also be taken into account (Bosker et al., 2013), and for practical purposes, a small number (three in Mead's research) of parameters may be predictive enough to assess interpreter's fluency (Mead, 2005).

In short, exploring the correlations between self-repair and the perceived quality of interpreting performance may involve more theoretical and pedagogical implications than investigating individual subcategories of self-repair as temporal parameters of fluency, because self-repair also offers insight into how interpreters monitor the interpreting process. Secondly, in investigating such correlations, acoustic measures should be selected rationally and combined with subjective assessment for better judgement. Finally, data from real-life settings should complement finding (Yu & van Heuven, 2017).

2.   Research questions

The design of the current study was inspired by the three categories of content, form and delivery in the analytic rating scale developed by Lee (2015). These three categories correspond roughly to the rubrics adopted in a semi-final interpreting contest for undergraduate English majors in China, namely *information*, *delivery of message*, and *professionalism* (See Appendix). Data from this contest were also used because the contest involved a simulated real-life CI setting, where student interpreters faced a large audience of judges and students and teachers from participating universities, and were hence under multiple pressures including overcoming nervousness and striving to meet professional standards. The audio and video recordings of the contest were acquired with the consent of the organizers of the contest. The judges' assessments were also attained, and the authors designed the ratings of individual aspects of the performances (see section 4.2.2). The data were used to try and answer the following two research questions (RQ):

> RQ1: What are the characteristics and the distributions of different types of self-repairs in student interpreters' CI performance?
> RQ2: What are the relationships between self-repairs and interpreting quality assessments, from the perspective of both perceived quality overall as well as the categories of content, form and delivery?

3.   Methods

3.1.   Participants

A total of 35 students from over twenty Chinese universities attended the contest, but interpretations by only 12 participants were used as research data for reasons that will be discussed later. All participants were senior English majors aged 21 or 22, who had started to learn English at the age of 12 or earlier, and who had undertaken intensive training in English for 3.5 years since they started university. They had just finished one semester of interpreting classes and undergone some additional CI training, including note-taking skills, by the time of the contest. The contestants also had to complete a preliminary round of competition at their respective universities in order to qualify for the semi-final.

In the first round of the English to Chinese interpreting task, the recording of a speech titled "currency manipulation" was played once, non-stop. The speech had 224 words, lasting one minute 15 seconds at a rate of 179 words per minute. The contestants began to interpret after a beep signal, and had to finish within one minute and 30 seconds of hearing the speech. Five judges rated the interpreted renditions in accordance with the rubrics used for assessment at the contest, the main criteria including information, delivery of message, and professionalism (see Appendix). The contest recessed after the first three contestants so that the judges could compare their grades, given on a 100-point scale, and have discussions to reach an agreed understanding of the rubrics. The final score for each contestant was the sum of the five grades given by the judges. The 12 contestants who scored the highest were selected as the research participants because their general interpreting qualities were comparable and well above average, so it is safe to assume that the subjective assessments would not be predominantly undermined by any particularly poor aspect of the performance. For example, when a contestant made major mistakes or missed too much of the message, the assessments of form and delivery may have only played a negligible role as compared to content, and it would therefore make little sense to analyze any correlations between self-repair and the perceived assessments of interpreting quality agreed upon by the judges.

The twelve interpretations were transcribed by a postgraduate assistant, and checked by the first author to make sure that all repairs and filled pauses were transcribed exactly as they were uttered.

3.2. Material

3.2.1 Self-repair

All overt repairs were annotated in accordance with Levelt's classification (1983) (summarized in Table 1) by the same specially trained postgraduate assistant, and checked by the first author. Inconsistencies were discussed, and the second author was consulted until an agreement was reached. A closer look at an undefinable group of repairs in the data shows that they were the results of failed attempts by the student interpreters to correct a mistake or modify an expression, and were thus annotated as FRs (failed repairs) instead of Rest Repairs.

The annotation of covert repairs was more complicated. Firstly, in addition to repetitions of the same lexical items (annotated as S1), another type of repetition was also found in the data. The interpreter in question had apparently used a different expression to render the same information unit that had been rendered immediately before, and therefore such renderings were also annotated as repetitions but with 'S2', that is a similar rendering of the same lexical items in the ST.

> Example 1:
> Source Text (ST): And is there really anything wrong with this…
> Target Text (TT): 又是怎样的一个错误，或者说一个其它的问题所在呢 [S2]?
> Literal translation of TT: What kind of mistake is it? Or is it another problem?

Secondly, a range of 0.25 to 2 seconds of the cut-off criterion for pauses has been used in the interpreting literature (Han, 2015). Considering the direct communicative nature of CI, another three raters who had not been informed of the ST watched the video of the first three interpreters, and noted down the perceived pauses. Based on this, a cut-off criterion of 0.5 seconds for non-syntactic (silent, filled) pauses was agreed upon after discussion, and filled pauses shorter than 0.5 seconds were annotated together with editing terms in overt repairs as ET. The detection and measuring of pauses in the recordings was done manually with the WavePad Sound Editor at a sampling frequency of 44100 Hz. Silences at the very beginning and the end of every interpretation were discarded by the trim function in the software.

Four objective measures were calculated for each interpretation to reflect the self-repair features as shown in Table 3. The aspect of overt repairs was represented by one measure: the number of overt repairs. The number of editing terms (ETs) was added to the total number of overt repairs because disguising editing terms is regarded as a tactic by experienced interpreters (Petite, 2005) and the pronounced fillers would nevertheless affect the flow of the speech. The covert repair aspect was represented by three measures: the number of repetitions (NR), the number of pauses (NP) and the mean length of pauses (MLP). All frequency measures were calculated using spoken time to avoid confounding the different measures (Bosker et al., 2013)

Table 3: List of four objective measures of self-repair

Category	Measures	Calculation
Overt repairs	Number of overt repairs (NOR)	(Number of D/A/E repairs + ETs+FRs)/spoken time
Covert repairs	Number of repetitions (NR)	Number of S1S2 repairs/spoken time
	Number of pauses (NP)	Number of silent and filled pauses/spoken time
	Mean length of pauses (MLP)	Sum of length of silent and filled pauses/number of silent and filled pauses

3.2.2 Subjective assessments

The overall perceived quality was represented by the final scores given by the five judges in the semi-final. Four of the five judges were experienced interpreter trainers from four Chinese universities, while the other judge was a senior interpreter from the local municipal government. For the subjective assessments of individual aspects of the performance, different raters and different methods were used to avoid a halo effect.

3.2.2.1   Content

The method for rating content was a proposition-based one, which has been proved effective in evaluating the accuracy of interpreting performance (Chen, 2017). The ST was divided into 25 scoring propositions by the first author and a second rater, who had both had training and had experience undertaking proposition-based scoring following a previous research project. Inconsistencies were discussed until an agreement was reached. In addition, fourteen cohesive links in the ST were identified in the same way. The assessment of cohesive links was also included because logical cohesion ranked among the top criteria of quality based on the existing literature, and "the cohesion…can be described in terms of the formal (syntactic and semantic) links" (Widdowson, 1978, as cited in Li, 2016, p.38). A score of 1 was given when the meaning of a proposition was correctly interpreted. For a link to gain an extra score of 0.5, it had to be immediately adjacent to the proposition that it was used to link, as indicated in the ST. In addition, the rendering of the link played a comparable linking role in the TT, but did not necessarily represent the same syntactic or semantic form as the corresponding one in the ST. Added information and erroneous renderings were not penalized. Kendall's W was run to determine if there was agreement. The agreement between the two raters was statistically significant: $W = .967$, p < .0005.

3.2.2.2   Form

The definition of form was readjusted in the present study by taking into consideration both the criteria used in previous studies and the rubrics of the competition semi-final so as to reflect a fairly independent parameter of the quality assessment. The three raters, who had participated in the judgement of perceived pauses (see 4.2.1), were asked to rate the form of performances on a 10-point scale (1 being very poor and 10 very good) while watching the video recordings. They were instructed to base their judgments on (1) impression of confidence, (2) poise, (3) appropriate register, (4) pleasant appearance, (5) pleasant voice (lively intonation and stress, unambiguous and clear diction), and (6) perceived reliability. A short interview was also conducted after the assessment as to which criteria might have affected their ratings the most.

    The three raters were all PhD candidates in Linguistics, and as they had not been informed of the ST, their assessments could be justified as representative of end users of the interpreting service, whose presumed expectations were also an important part of quality assessment (Kurz, 2001). Also, raters' subjective assessments of particular aspects of a speech or interpretation were proven to be valid in previous studies (Bosker et al., 2013; Yu & van Heuven, 2017). Kendall's W showed that the agreement among the three raters was statistically significant: $W=.858$, p< .0005.

3.2.2.3   Delivery

Fluency is arguably a more dominant criterion of delivery. The objective acoustic measure of *effective speech rate* was adopted to represent the judged fluency of performances for two reasons. Firstly, effective speech rate was found to be the best indicator of perceived fluency in CI (Yu & van Heuven, 2017); secondly, another subjective assessment of fluency would have been contaminated by the halo effect, thus undermining the interpretability of the relative contributions of self-repair to the perceived assessments of form and delivery. The effective speech rate was calculated as number of syllables, excluding disfluencies from the syllable count, divided by total duration of speech including all (silent and filled) pauses.

4.   Results and discussion

The results of the self-repair distributions are presented first, followed by the subjective assessments of different aspects of the interpreting performances. Finally, the correlations between these are discussed.

4.1. Distribution of self-repairs

The authors found Levelt's classification (1983) to be effective in describing self-repairs in students' interpretations from English into Chinese. The data revealed significant differences in the distribution of self-repairs between students' A language interpretations and L1 production based on previous findings (Brédart, 1991). The percentage of covert repairs was 47.1% (since only pauses >0.5 seconds were counted in the present study, the actual number could be even larger), much higher than the 24.6% in Levelt's and the 41.5% in Brédart's studies on L1 self-repairs (Brédart, 1991). According to speech production theory and perceptual loop theory, covert repairs occur before an utterance is articulated, when the speaker is inspecting a preverbal message against the original intention, the ST in this case, or is wording the message with the language formulator. Given that the students interpreted into their A language Chinese, it can be argued that conceptualizing the message in the ST, that is deverbalization in the interpreting process, is a more prominent cause of covert repairs in students' interpretations. Secondly, a certain level of professionalism can be inferred from the distribution of repairs. A-repairs were found in the data, indicating that students were also monitoring the production process in the interest of the audience, while only a very small number of errors were left unrepaired (4.8%) to maintain the integrity of the interpretation. Detailed information about students' interpretations and the self-repair distribution is shown in Table 4.

4.2. Subjective assessments of interpreting performances

In rating the content aspect of interpretations, it was found that the students had little difficulty re-presenting the common linking devices such as "for example" and conjunctions like "but". However, they were not as good at identifying the relationships implied by some adverbs, which compromised the coherence of the interpretation. Examples include "though" in "China has a mighty wand on its hand though", and "however" in "it is encouraging to note, however, that…'. Also, the assessment of cohesive links could get a little tricky because of the syntactic differences between the Chinese and English language.

> Example 2:
> SS: This thus keeps the Yuan undervalued.
> TT: 这使得人民币得以贬值。
> Literal translation of TT: This leads to the devaluation of RMB.

As is shown in Example 2, the adverb "thus" is used as a cohesive link to indicate a cause-effect relationship. The same relationship was built semantically with the predicate "leads to". General agreement was reached after discussion, and an extra 0.5 was awarded for the achievement of the coherent relation, but further research into the differences in syntactic and semantic linking devices between English and Chinese is suggested for future studies.

After rating the form aspect of interpretations, the raters briefly discussed the criteria used in the assessment. Raters seemed to be more sensitive to different problems in the performances in their own particular ways, and this again reflects how highly subjective interpreting quality assessment can be. "No eye contact whatsoever", "mistake against common sense", "unease voice", "not very confident", etc. were reported to have affected their assessment. However, a satisfactory concordance was found eventually between the raters, which means that the ratings could nevertheless represent how the audience might have perceived interpreting quality in general. Moreover, the mention of "mistake against common sense" indicated that perhaps users of interpreting services with no knowledge of the ST may still reach sound judgments of the accuracy of interpretations. As *no opposite meanings* is also a heavily weighted criterion in Lee's (2015) scale, it may be reasonable to introduce penalties for opposite meanings in the assessment of content to better reflect the correlation between content and perceived quality in future studies.

Table 4: Interpretation measures and self-repair distribution

No.	Measures of Interpretations						Overt Repairs						Covert Repairs					
	Duration second	SP length	FP length	Word count	Word excl. repairs	ESR	D	A	E	FR	ET incl. FP<0.5s	Total	S1	S2	Subtotal S1+S2	SP	FP	Subtotal SP+FP
1	80.07	_	1.37	346	330	4.12	1	1	2	1	4	9	5	1	6	0	2	2
2	86.36	0.60	5.15	465	346	4.01	3	0	4	3	12	22	6	2	8	1	7	8
3	72.73	0.50	1.09	350	338	4.65	2	0	1	1	1	5	2	1	3	1	1	2
4	59.39	0.57	5.75	245	233	3.92	0	2	1	0	4	7	0	0	0	1	7	8
5	71.39	0.83	1.08	349	341	4.78	0	2	0	2	3	7	0	1	1	1	2	3
6	51.93	0.65	0.54	248	240	4.62	0	2	0	0	1	3	2	0	2	1	1	2
7	43.03	0.50	_	213	205	4.76	4	1	0	0	1	6	4	1	5	1	0	1
8	69.39	1.13	3.43	306	290	4.18	2	0	1	0	4	7	2	0	2	1	6	7
9	71.78	_	4.11	355	321	4.47	0	0	1	1	11	13	3	0	3	0	6	6
10	84.94	_	4.81	366	340	4.00	1	2	1	0	6	10	4	1	5	0	7	7
11	69.95	5.08	1.21	286	251	3.59	2	1	1	2	3	9	6	0	6	7	1	8
12	74.43	_	0.76	378	348	4.68	1	2	2	0	7	12	1	1	2	0	1	1
Repair Total	208						16	13	14	10	57	110 (52.9%)	35	8	43 (20.7%)	14	41	55 (26.4%)

Table notes. SP=silent pause, FP=filled pause, ESR=effective speech rate, D=different information repairs, A=appropriateness repairs, E=error repairs, FR=failed repairs, ET=editing term, S1=repetition of the same lexical items, S2=similar rendering of the same lexical items in ST

Finally, the delivery aspect of the performances was represented by the objective measure of effective speech rate. It is worth noting, however, that the different criteria adopted to define and measure pauses (see 4.2.1.) may have led to a variance in the explanatory power of delivery in the present study. A summary of all subjective assessments is shown in Table 5.

Table 5: Overall perceived quality and subjective assessments of content, form and delivery

No.	Judges	Content			Form				Delivery
		Rater 1 L+P	*Rater 2* L+P	*Mean*	*Rater 1*	*Rater 2*	*Rater 3*	*Mean*	*ESR*
1	470.15	3.5+9.5	2.5+10	12.75	7	8	8	7.67	4.12
2	459.05	1.5+7.5	1+6.5	8.25	6	7	6	6.33	4.01
3	455.31	1.5+5.5	1+5.5	6.75	8	9	7	8.00	4.65
4	461.12	1.5+9.5	2+8	10.50	5	6	6	5.33	3.92
5	468.94	1.5+10.5	1.5+10	11.75	9	8	9	8.67	4.78
6	456.46	1+7	1+6	7.50	7	7	8	7.33	4.62
7	460.08	2.5+11.5	2.5+10.5	13.50	4	5	5	4.67	4.76
8	478.99	0.5+9.5	1+9	10.00	7	6	7	6.67	4.18
9	468.86	1+12	1+10	12.00	6	6	7	6.33	4.47
10	462.92	3.5+12.5	3.5+10.5	15	6	5	6	5.67	4.00
11	456.51	2+10	2.5+10.5	12.5	5	4	6	5.00	3.59
12	465.68	3.5+12	3+12.5	15.50	8	9	7	8.00	4.68

Table notes. L=cohesive links, P=propositions

4.3. Correlations between self-repair measures and subjective assessments of CI quality

The self-repair measures were compared with different categories of subjective ratings to determine how, and to what extent, these were related. Pearson's *r* correlations were run to assess such relationships. Any outlier was removed when detected in the preliminary analysis of whether the variables were normally distributed, because it would otherwise have compromised the data, and this would have run contrary to one of the research goals, which was to generalize any findings. To this end, possible reasons for the occurrence of outliers were analysed. Pearson's *r* results are shown in Table 6.

4.3.1   Correlations between overt repairs (represented by NOR) and subjective assessments

In the preliminary analysis of whether the variables were normally distributed, student 2 was determined to be an outlier in the linear relationship between NORs and content. The distribution of self-repairs in Table 4 shows that the total number of overt repairs in his/her interpretation was 22, nearly twice as many as the second highest number, which was 13 in student 9's interpretation. This could lead to the abnormal distribution of values, so student 2's data were removed.

A strong positive correlation of r=0.712* was found between NORs and content. Overt repairs are made when an error is detected in an articulated utterance: D-repairs (see Table 1) are made when the interpreter wants to provide a better organized message or replace it with a new one, A-repairs are made when the interpreter wants to rephrase an expression mainly for the benefit of the audience, and E-repairs are made when a linguistic error is detected in the utterance. As the distribution of self-repairs reflects the monitor bias of the speaker in the language production process, it can be assumed that the students who scored higher on content may be linguistically more competent or have a larger WMC, since they could cognitively manage to monitor their interpreting output. Little correlation was found between NORs and the overall perceived quality, indicating that the judges did not seem to penalize overt repairs in students' interpretations. However, moderate negative correlations of *r*=-0.330 and *r*=-0.299 were found between NORs and form and delivery respectively, which shows that an audience's subjective assessments of whether the interpreter looked professional and whether the message was delivered fluently may have been affected by overt repairs to a certain extent. The case of student 2, though regarded as an outlier, also shows that when the number of overt repairs exceeds a certain level, the above analysis would no longer be applicable to any correlations between the variables.

Table 6: Correlations between self-repair measures and subjective assessments

Self-repair Measures	Content	Form	Delivery	Overall Perceived Quality
NOR	0.712* (No. 2 removed)	-0.330	-.299	0.005
NR	0.142	-0.774** (No. 4 removed)	-0.541 (No. 7 removed)	-0.430 (No. 4 removed)
NP	-0.118	-0.866** (No. 7 removed)	-0.789**	-0.208 (No. 8 removed)
MLP	-0.112	-0.303 (No. 7 removed)	-.492	-0.208

Table notes.
*$p<.05$ (two-tailed)
**$p<.01$(two-tailed)

4.3.2 Correlations between covert repairs (represented by NR, NP and MLP) and subjective assessments

In the preliminary analysis of the linear relationships between covert repair measures and the subjective assessments, a few values were identified as outliers and therefore removed where appropriate. For the variable of NR, as student 4 made no repetitions, while student 7 had the highest NR value, they were identified as outliers. Student 7 was also an outlier in the relationships between form and NP and MLP, probably because he/she received the lowest score for form. For similar reasons, student 8, who received the highest score from the judges, was identified as an outlier in the linear relationship between NP and overall perceived quality.

The results show that the three covert repair measures have low correlations with the assessment of content, but stronger negative correlations with the other three subjective assessments. That is to say, the raters and the judges seemed to be inclined to penalize covert repairs more than overt repairs.

Both NRs and NPs were found to have strong negative correlations with form and delivery, which denotes that repetitions and pauses in interpretations may have seriously diminished the end users' evaluation of the student interpreters' fluency and credibility. MLPs were found to only have a moderate correlation with form and delivery, probably due to the fact that students may have strived to shorten pauses and finish interpreting within a given set time in the contest. As for the judges' assessment, a higher negative correlation was found between NRs than NPs and the overall perceived quality, indicating that the judges may have been more sensitive to repetitions than to pauses. Based on our analysis above, covert repairs may have resulted from cognitive strains in the conceptualizing part of the language production process. In other words, it is very likely that student interpreters were struggling to reformulate the message by repeating the same or similar lexical items or employing pauses to gain some thinking time.

4.3.3 Content, form and delivery as predictors of overall perceived quality

From the analysis above, it seems that self-repair played a less notable role in the judges' evaluation than the other subjective assessments. In an attempt to explore further the relationship, a multiple regression was run to predict the dependent variable of overall perceived quality from the three independent variables of 'content', 'form' and 'delivery'. Unfortunately, no other statistically significant results were found aside from a value of $R=0.471$, indicating a moderate linear association between the dependent variable and the independent variables. This result has the following implications. Firstly, different criteria may have influenced the judges to a varying extent despite the use of set rubrics in the contest. A Pearson's correlation of $r=0.559$ (outlier student 8's data removed) shows that the judges' scores were strongly related to the content aspect of the interpreting performances. While it would be impossible to find out how much the judges weighted each criterion, it could be inferred that content may have played a predominant role in their assessment. In other words, the judges, who understood both the ST and the TT, still relied heavily on accuracy of information in their assessment of interpreting quality. Secondly, only twelve interpretations from the total number of 35 were analyzed for the present study. Considering that the

twelve participants were randomly distributed among the 35 contestants, whom the judges evaluated consecutively at one sitting, it cannot be ruled out that the factors of physical or mental exertion and an order effect could also have played a role. In addition, the results of subjective assessments of interpreting performances in a contest may have been influenced by many other unidentified factors. Finally, the correlations between self-repair and form and delivery may suggest a stronger impact of self-repair on the subject assessment of interpreting quality in real-life settings.

5.   Conclusion

This paper investigated the effects of self-repairs on the subjective assessments of the three aspects of CI performance, namely content, form and delivery, and an overall perceived quality. The data collected from an interpreting contest were arguably more representative of how student interpreters would monitor their interpreting process in a real-life CI setting than in experiments. In an experimental setting, participants often perform the interpreting tasks in a more solitary environment with no added concerns about the quality of their interpretations. By comparison, the contestants had to manage the stresses of interpreting in the presence of a large audience, having a time limit to complete the task, while striving for a high quality performance in accordance with the assessment rubrics used at the contest. Our analysis showed that students who scored higher on content used more overt repairs, while those who scored lower used more repetitions and pauses. The negative ratings of form and delivery were closely correlated with covert repairs, in terms of the frequencies of repetitions and pauses and the mean length of pauses. Lastly, even though self-repair did not seem to have affected the judges' assessment in the contest, it may play a more prominent role in real-life interpreting settings.

One of the limitations of the study is the comparatively small data set for determining correlations between quantitative variables. The twelve participants were selected for reasons stated in the methodological part of the paper, however future research may benefit from a larger data set involving interpretations of more mixed quality, and subjective assessments by raters from more varied backgrounds.

The findings of the study provide some reference values for interpreter trainers. As a contribution of the study to CI training, the types and distribution of self-repairs may be used as additional information for trainers to identify problems in students' performance, and thus help students address them accordingly. As suggested in data analysis, a higher presence of overt repairs may indicate that students have more developed interpreting competence and larger WMC, while more covert repairs could indicate that students still have difficulty conceptualizing the sense of the ST. Secondly, while self-repairs are generally discouraged in interpreter training, trainers could differentiate between overt and covert repairs as subjective assessments of interpreting quality seem to be more sensitive to covert repairs including repetitions and pauses. Finally, interpreter trainers should be aware that, despite the existence of rubrics, their assessments of student's performance may still be predominantly influenced by accuracy, because trainers understand both the source and target spoken texts. Awareness of this bias may result in the development of new evaluation practices in interpreting training, for example, introducing additional examiners, who do not listen to the source text but only the interpreted renderings, to the examiners panel.

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Appendix. Rubrics for the English to Chinese Consecutive Interpreting contest

Categories	Criteria
Information (50%)	• Accurate rendition of main ideas • Maintaining the tone and the style of the source speech
Delivery of message (25%)	• Grammatical correctness • Logical cohesion • Appropriate register • Appropriate use of interpreting strategies, e.g. addition, abstraction, paraphrasing and omission • Natural/idiomatic target-language expressions • Variety of words and expressions
Professionalism (25%)	• Pleasant voice • Good/natural pronunciation • Not speaking too fast/slowly • Fluency of delivery • Eye contact with the audience • Giving an impression of confidence • Showing professionalism • Extra-linguistic communication skills

American Sign Language Competency: Comparing Student Readiness for Entry into a Four-Year Interpreter Degree Program

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Abstract

Foundational language competence is directly related to a student interpreters' success in interpreter education and ultimately, certification readiness upon graduation. This study focused on the American Sign Language (ASL) expressive competence of applicants to a four-year ASL English interpretation major through a pre-program screening of 250 applicants over eight years. Applicants' ASL expressive competence compared scores of those who held two-year interpreting degrees to those who had completed four semesters of ASL. Data showed that applicants from two-year interpreting programs and applicants who have taken four semesters of ASL possessed similar expressive ASL competence. This study further examined if applicants with a two-year degree in interpreting were able to transfer into a four-year interpreting program with year three language skills. This study provided quantifiable evidence for addressing inefficiencies in interpreter education that negatively impacted both the student interpreters, and the quality of services provided to stakeholders.

Keywords: interpreter education, pre-program entry screening, expressive ASL competence

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American Sign Language Competency: Comparing Student Readiness for Entry into a Four-Year Interpreter Degree Program

Pre-program entry screening (Johnson & Witter-Merithew, 2004; Boegner Godfrey, 2010) with foundational ASL and English competence assessment is identified as a strategy to increase the success of students who graduate from interpreter education programs in the United States (US) (Johnson & Witter-Merithew, 2004; Winston, 2005). "Language fluency [or competency] must be mastered prior to program entry so focus during the course of the interpreting program can build on the pre-existing skills and demands" - this allows for "concentration on more complex interpreting skills" (Boegner Godfrey, 2010, p. 22). Ball (2013) further emphasizes that successful completion of interpreter education is directly related to the student's ASL competence at the time of admission.

Historically, members of the D/deaf community in the US determined if an individual had sufficient ASL competence and evaluated whether they would act in the best communicative interests of the Deaf Community (Fant, 1990; Cokely, 2005). As the field of ASL-English interpreting education further developed in the US, interpreter education programs began considering how to more effectively evaluate potential students through pre-program entry screenings primarily managed by both D/deaf professionals and interpreting practitioners (Hunt & Nicodemus, 2014). Boegner Godfrey (2010) conducted a review of the entrance requirements of five programs in the US. Of those, four had rigorous requirements for entry into the interpreting portion of the program. The findings of the Boegner Godfrey (2010) study demonstrate the initial application of research findings by establishing screening of applicants' ASL competence prior to entering interpreter education programs.

For the purpose of this current study, the term "ASL I-IV" refers to four semesters of ASL coursework, with each course typically ranging between 3-5 credit hours, which equates to between 45 and 75 clock hours of faculty-student interaction (where 1 credit hour is equal to 15 class contact hours). The term "two-year degree in interpreting" here refers to an associate-level degree in the US in the field of ASL-English interpreting. Such an associate-level degree ranges from 60-80 credit hours, the majority of which involve language and interpreting skills coursework. An associate-level degree is usually completed in two-years or more at community colleges, technical colleges, and some universities. Overall such courses involve at least between 900 to 1200 clock hours of faculty-student interaction. All two-year degrees in interpreting discussed in this study include a minimum of four semesters of ASL coursework (ASL I-IV coursework).

This study reports on the ASL-English Interpretation (ASLEI) bachelor's degree program at the University of Northern Colorado (UNC) which has administered a proprietary pre-program entry screening called the ASL Demonstration of Competency (DOC) since 2007. Some consistent trends noted by UNC ASLEI academic advisors led to a formal analysis of DOC results and prior educational experience of applicants. The research reported here investigated the following questions:

1. How do applicants with a two-year degree in ASL-English interpretation compare to those who had only completed coursework in ASL I-IV in regard to their respective competence in the production of American Sign Language, referred to as expressive ASL competence?

 2. Do applicants with a two-year degree in interpreting transfer with expressive skills suitable for entry to year three of a four-year interpreter education program?

To answer these questions, the authors reviewed the available literature in the field. This overview of the literature will be presented next, followed by the chosen methodological approach and the findings of the study.

1. Literature review and background

1.1. *History of interpreter education in the United States*

The Registry of Interpreters for the Deaf (RID) is a national organization in the US which was established in 1964. Since that time the demand for ASL-English interpreters in the US has increased as laws were passed that recognized the need for interpreting services for both adults and children. These public laws include the Vocational Rehabilitation Act of 1965 (PL 89-333), the Rehabilitation Act of 1973 (PL 93-112), the Education of All Handicapped Children Act (PL 94-142), the Federal Court Interpreters Act (PL 95-539), the Telecommunications Act, and the Americans with Disabilities Act of 1990 (Witter-Merithew & Johnson, 2005).

In 1990 Lou Fant compiled a history of the first 25 years of ASL-English interpreting profession in the US. In this historical narrative of the RID and the field of ASL interpreting, he identified the lack of competent ASL-English interpreters which led to recruitment of new individuals to become interpreters (Fant 1990). Those willing to enter the profession needed training, and in 1974 the Rehabilitation Services Administration (RSA) began funding training programs with the goal of developing and implementing training courses for individuals without prior interpreting experience who already had some ASL competence (Cokely, 2005; Frishberg, 1990). The goal of these grant-funded programs was to help develop more work-ready interpreters. However, there was limited research and understanding of how to approach interpreter education and curriculum development at the time. As a result, courses were developed that varied in terms of duration and content. In addition, the training programs that were established at that time lacked the level of rigor that prospective interpreters would have received from within the D/deaf community (Cokely, 2005).

By the 1980s, when the number of programs had grown to over fifty, interpreter educators determined that these skills-focused training programs should incorporate both comprehensive skills training as well as a liberal arts education (Cokely, 2005; Boegner Godfrey, 2010). ASL-English interpreting programs were beginning to see a new student base and students entering the programs did not always have close ties with the D/deaf community, or possessed minimal or no ASL competence, which meant they required additional extensive courses in ASL (Fant, 1990; Cokely, 2005). A further shift involved academic institutions taking on responsibility for the admission screening process, which meant the D/deaf community's role as gatekeepers to the profession was reduced (Cokely, 2005).

It became clear to educators that two years was insufficient time for students to develop the necessary ASL language competence and ASL-English interpreting skills (Johnson & Witter-Merithew, 2004; Cokely, 2005; Humphrey 2000). This led to discussions regarding the need to develop four-year degree programs (Humphrey, 2000; Johnson & Witter-Merithew, 2004; Boegner Godfrey, 2010). Along with this shift in thinking came the transition - which some would argue is still evolving - from "interpreter training" which reflected a trade-based or a "distinctly vocational profile" to "interpreter education", which fosters a more academic perspective towards developing students into practitioners for professional practice (Winston & Monikowski, 2013; Witter-Merithew & Johnson, 2005).

Beginning in 2012, the RID began requiring all candidates for certification to have completed a four-year degree prior to being allowed to sit the performance component of the certification exam. This was an important move towards validating the need for a higher standard for interpreters entering the field, however, the requirement was for any four-year degree, and not a discipline-specific degree. While this has led to some students pursuing a four-year degree in interpretation, others instead chose to complete a four-year degree in an area unrelated to ASL-English interpreting (Winston & Monikowski, 2013).

ASL competency: Comparing student readiness

In January 2018, RID's website listed 49 certificate (less than a two-year degree) programs, 76 associate (two-year) degree programs, 43 bachelor's (four-year) degree programs, and four graduate-level programs. However, some of the interpreter education programs listed are actually programs in related fields such as ASL or Deaf Studies, minors, or concentrations[2] in interpreting (Boegner Godfrey, 2010). This demonstrates the lack of standardization in interpreter education.

While multiple colleges and universities offer interpreter education to meet the high demand for ASL-English interpreters, there are students graduating and obtaining employment without certification. In some cases, students complete the necessary coursework to earn their degree and sit for the certification test under RID, without successfully passing the required national certification exam. In other cases, graduates meet the state-legislated requirements, but are not actually able to effectively manage the complex language and information processing skills required in interpreting. These students face interpreting demands that they are ill-prepared to meet (Witter-Merithew & Johnson, 2005). In 1979, Carol Yoken, then editor of *the Journal of Rehabilitation of the Deaf*, challenged the field to "move from associate or bachelors level programs to masters and doctoral level programs" (Ball, 2013, p. 141). Yoken (in Ball, 2013) outlined a plan to improve interpreter education which included encouraging interpreter educators to work together to establish program outcomes and a curricular design that aimed to enhance students' ability to successfully enter the profession upon graduation. She also encouraged research that would compare student outcomes of interpreter education programs at the two-year, four-year and graduate levels in order to determine the most appropriate duration of interpreter education.

1.2. The gap

There is a well-documented gap between the point in time interpreting students graduate and the point at which they gain national interpreter certification. Winston (2005), Cokely (2005), and Witter-Merithew & Johnson (2005) have consistently noted how all stakeholders are impacted by students graduating from programs who are not able to provide competent interpreting services, as evidenced by their inability to obtain interpreter certification. In other words, there is a gap between students' ability to graduate and their ability to obtain national certification, meaning they often begin interpreting without national certification. Smith (in Witter-Merithew & Johnson, 2005), identifies how this gap does a disservice to the D/deaf community because the average graduate from an interpreter education program does not pass certification exams. This gap between graduation and earning interpreter certification in the US causes graduates to start taking on interpreting assignments before they are ready with the baseline skills set out by the RID. This means, in essence, that they learn on the job, while D/deaf people miss out on essential information and are therefore often misrepresented (Witter-Merithew & Johnson, 2005).

It is important to note that the gap differs depending on whether a student has graduated from a two-year program or a four-year program. Boegner Godfrey's (2010) study identified that the majority of graduates from four-year (bachelor) degree programs will obtain state-level credentials upon graduation in states that offer state certification, but that these same students may take up to one-year to earn national credentials. In contrast, graduates from two-year (associate) degree programs will typically require two additional years to obtain state-level certification and often more than that to earn national certification (Boegner Godfrey, 2010).

It could be that two-year interpreter education curricula may be rushing language development because in these programs interpreting courses are typically aligned with intermediate ASL courses (e.g. ASL III). There is evidence that ASL competence and ASL-English interpreting skills cannot be achieved in two years (Roy, 2000). Interpreting students themselves have "expressed concern about how all the skills could be acquired and mastered within a two-year associate degree" (Witter-Merithew & Johnson, 2005, p. 51). Unfortunately, the 2009 Interpreter Education Program Needs Assessment (Cokely & Winston, 2010) identified a higher number of

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[2] A concentration (sometimes also referred to as 'an emphasis') is a structured program of study within a major. Some university programs in the US allow for a student to select from a prescribed list of courses that provide an additional structured focus in a related subject. Alternatively, some programs allow students to create an emphasis by self-selecting courses that are of interest to a future career goal. These typically consist of 4 to 6 courses, but there is great variability. A program additional concentration or emphasis is not sufficient to learn ASL English interpreting as it is even less education than a two-year discipline-specific program.

students enrolled in associate level programs (1037 students) compared with those enrolled in bachelor level programs (379 students). This could be based on availability, as there are more associate-level programs available nation-wide, while cost of tuition is less at a two-year community college versus a university. It may also be that some students are not willing to commit to more than two years to training.

The gap between the outcomes of interpreter education and certified, competent practice is reiterated by publications and presentations (Ball, 2013; Boegner Godfrey, 2010; Cokely, 2005; Hunt & Nicodemus, 2014; Volk, 2014; Winston, 2005; Witter-Merithew & Johnson, 2004, 2005). However, educators have failed to close the gap (Witter-Merithew & Johnson, 2005). Research findings indicate that one consistent recommendation in closing this gap would be the clear articulation of expected outcomes based on levels of academic study completed. At least two initiatives have been undertaken to articulate expected outcomes in the US. One comprised the accreditation standards of the Commission on Collegiate Interpreter Education. The other is a publication born of a grant-funded gathering of leading ASL-English interpreting education scholars from across the US who met to discuss this issue, which resulted in the publication of 34 entry-to-practice competencies that the group identified as requisite to entering the profession (Witter-Merithew & Johnson, 2005). While there is a published list of accredited interpreter education programs in the US, it is unclear how many programs have adopted competency-based program outcomes, or to what level the aforementioned competencies might have been applied to the curriculum design of two-year and four-year programs. In the US, neither the professional organization of interpreter educators nor the national certifying body for interpreters has delineated the difference in educational standards or outcomes for graduates from two-year and four-year degrees. There is an optional accreditation available to interpreter education programs in the US through the Commission on Collegiate Interpreter Education (CCIE). As of January 2018, the accrediting body lists five two-year (associate) programs, and thirteen four-year (bachelors) programs as having been accredited. However, no specific criteria for the different levels of accreditation are listed, nor is there any statement regarding an expectation of increased rigor for higher levels of academic study.

Several professions in the US, such as those related to healthcare, law, and education, have a system for identifying various levels of preparation and expertise. These are typically identified with labels that correspond to the amount of education completed along with certifications and/or licensure. Typically, those with a certificate or two-year degree are categorized as paraprofessionals, those with four-year degrees as generalist professionals, and those with graduate degrees as specialist professionals (Witter-Merithew & Johnson, 2005). In these practice professions where there are various levels of degrees and certifications, the certifying body identifies expected competency-based outcomes depending on the degree earned (Ball, 2013; Schumacher & Risco, 2017). Competency-based curriculum and educational approaches in nursing, have resulted in increased learner-centred education which promotes clear student and instructor understanding of expectations for performance, and this has in turn led to program success (Schumacher & Risco, 2017).

Despite the continued discussion about the gap between interpreting program graduation and certification readiness, little progress has been made in the US toward implementation of the recommendations to reduce the gap or ultimately, eliminate it. In 2005, Witter-Merithew and Johnson issued this challenge to the field: "It is time we set ourselves a deadline, and begin working on the infrastructures. We all own the gap" (p.15). Nearly ten years later, Volk (2014) presented a national call to action among interpreter educators to address this very same issue. In 2017, a national grant-funded project through the University of St. Catherine in St. Paul, Minnesota began working on the goal to further research strategies for closing this gap, specifically for students who hold a four-year degree. The study conducted in this article aims to inform the field by providing the first set of quantifiable data in the US which compares the expressive ASL competency of different groups of students.

2.   Method

2.1.   Theoretical framework

The foundation for assessing applicant language skills is based on Social Interactionist theory which emphasizes the learners' regular use and application of a second language as the best source for effective acquisition and eventually fluency in that language (Vygotsky, 1980). This framework provides insight into understanding the process of second language acquisition and has informed the development and administration of the language assessment that is required of applicants to the ASL-English interpreting program at the University of Northern Colorado (UNC). Applicants complete, as part of a larger admission process, an assessment of their fluency in using ASL as a second or other language. The results of this assessment have provided the data for this research project. These entry placement results were compared and analyzed based on prior education of applicants: completion of either a two-year interpreting degree or completion of only four semesters of ASL coursework (ASL I-IV).

2.2.   Participants

The researchers identified 330 participants who were applicants wishing to enter UNC's ASLEI program during an eight-year span (2009 – 2017). For this purpose, the researchers wanted to identify applicants who had either graduated from a two-year interpreting program (including a minimum of ASL I-IV courses and interpreting courses) and applicants who had completed only ASL I-IV coursework from a college or university.

Applicants were excluded from the study if they had **not** completed a) ASL I-IV post-secondary coursework or the four semesters of ASL coursework (four classes, each ranging from 3-5 credits), or b) a two-year, associate-level degree in interpreting. This eliminated applicants who took ASL in high school, had acquired ASL through life experience or employment, or acquired ASL through other sources. A total of 250 applicants met the selection criteria for the two groups. Applicants came from across the US, ranging in age from 18-55, including a breadth of cultures and identities, involving both applicants who had no experience in the field and current practitioners who had yet to obtain national credentials. Applicants with a two-year degree had graduated from 24 different institutes of higher education. Applicants from 133 different colleges and universities had applied to transfer to UNC after completing ASL I-IV.

Applicants' identities were kept strictly confidential, and all identifiers were removed to analyze potential correlations in findings without bias. Additional information listed about the applicants included academic background (completing a two-year degree or only having taken ASL language courses), state, transfer institution, and the results of the three areas of the DOC (receptive, expressive, and knowledge of ASL grammar and Deaf Culture). For the purpose of this article, only the data from the ASL expressive component were analyzed. The transferring institution and states of residence will not be reported on here.

2.3.   Instrument

The ASLEI program requires applicants wishing to pursue a bachelor's degree in ASL-English Interpretation at UNC, to complete a pre-screening assessment, consisting of an application with a written essay, the ASL DOC, and an intake interview. The data from the DOC constitute one factor used to determine applicants' readiness and entry placement in the ASLEI program.

The DOC is a proprietary pre-screening system scheduled and administered by the ASLEI program. The DOC screening was developed by a nationally recognized D/deaf ASL assessment expert in 2007 and began to be implemented in the ASLEI program later that same year. In the eight years examined for this study, the DOC has maintained the exact same format, knowledge questions, ASL receptive scenarios, and ASL expressive instructions. There are two versions of source material for the DOC so that students who re-take the screening are presented with new questions and new texts.

All applicants are given a week to complete the online DOC. They are encouraged to complete the expressive screening first since those are sent out to external raters. The expressive screening consists of four sets of instructions to elicit the standard ASL features that compose the 20 to 30-minute recorded language sample. By being allowed a week to complete the requirements, applicants can practice and polish their language sample in order to submit their best effort. This avoids a situation where preparation time taken differs and acts as a confounding variable when comparing results.

2.3.1   DOC assessment rubric

The validity of the DOC is evidenced by the standard rubric used by the team of expert D/deaf raters (see below). The rubric used includes standard grammatical and linguistic features such as maintaining ASL grammatical structure, incorporating use of space and classifiers, accurate ASL sign production, fluency in fingerspelling and numbers, and fluidity of overall language production. Based on the rubric, the ratings were aligned with an ASL course level based on language competence. Applicants receiving a recommendation of ASL I-IV placement demonstrated less than the minimum required for program entry. Applicants receiving an ASL V rating demonstrated the minimum language competence for entry into this four-year program. Applicants recommended for ASL VI or higher are viewed as having advanced ASL skills, appropriate for entry into a program that offers them another three years of interpreter education until graduation. These applicants will undergo an additional screening by an ASLEI faculty member to confirm advanced placement. UNC's ASLEI curriculum provides two-years of ASL in the lower division courses (year one and two of the four-year degree program), specifically ASL V-IX, prior to commencing two-years of consecutive and simultaneous interpreting coursework in the upper-division work (year three and four of the four-year degree program).

2.3.2   Expert raters

The ASL expressive language sample submitted by each applicant is reviewed by a team of two to five external raters who hold a minimum of a graduate degree. They act as raters on other national ASL assessments and are instructors of ASL at post-secondary institutions across the US. The number of raters for a given DOC is based on availability, and not on potential ability of the applicants. Multiple raters are used to ensure inter-rater reliability.

A minimum of two raters independently review the applicants' language sample. If ratings and recommendations are widely different between the two raters, an additional assessment will be done by one more rater, followed by a discussion regarding the rating if necessary. The raters are not provided applicants' full names or contact information; however, a limitation is that students may introduce themselves in their video and/or raters may recognize them. Raters are required to follow University standards regarding the US Family Educational Rights and Privacy Act (FERPA) and UNC contracts require additional documented agreements. There was no requirement for raters to provide consent to participate in the study reported on here, since the research only looked at the outcomes of ratings.

One dependent variable of this study was the applicants' placement into ASL or interpreting coursework based on the expressive ASL competencies revealed during the DOC screening and placement recommendation of the raters.

2.4.   Procedure

The ASLEI Program stored the DOC results on a secure server within the Department of ASL and Interpreting Studies at UNC for the purpose of academic advisement. After receiving approval from the UNC Institutional Review Board (IRB), the researchers began creating a master list, dividing applicants into two categories: applicants who had graduated from a two-year interpreter education program and applicants who had completed only ASL I-IV coursework prior to application. The ASL expressive screening ratings were compared between these two groups.

For the purpose of this study, all applicants were assigned numbers (1-330) in order to avoid identification by third parties. In addition to this assigned number, the year the applicant took the DOC was listed. The study compared applicants' academic backgrounds, specifically if they had taken ASL I-IV coursework or a two-year

interpreting degree with ASL coursework incorporated into the curriculum, and compared that information to their ASL expressive screening results. The ASL expressive screening scores were compared between applicants from these two groups, identifying the number of applicants that screened into one of these four groups:

1. Remedial ASL: This means an applicant was assessed as eligible for entry into ASL I-IV, or foundational ASL coursework, and was not ready for ASLEI program entry.

2. Minimum language competence for program entry (ASL V): This means an applicant was assessed as eligible for entry into ASL V, which is the first class in the first year of the ASLEI program.

3. Advanced ASL (ASL VI or higher): This means an applicant was assessed as eligible for entry into ASL VI or higher. These courses are taken in the latter part of year 1 or in year 2 of the ASLEI program.

4. Interpreting: This means the applicant was assessed as eligible for entry into year 3 of the ASLEI program, and was considered to have near-native like ASL competence.

3. Data analysis

Descriptive analysis was used to compare the percentages of applicants in the two groups and their expressive ASL competence ratings. A chi-square was used to perform the analysis on the scores between the groups.

The second research question inquired as to whether or not a two-year degree in interpreting transferred into a four-year degree in interpreting with junior (third year) level expressive skills. Many of the various colleges and degree programs offering the two-year associate degree stated in their course catalogues and on their websites that graduates of their two-year programs could complete a four-year discipline specific degree in ASL-English interpreting within two additional years. A descriptive statistics approach was used, as this research question focused on applicants who had completed two-year interpreting degrees and the question as to whether they achieved junior (third year) level expressive skills on the DOC or not. At UNC, this level of scoring allows for direct entry into interpreting coursework, with ASL I-IX competence reflected in the DOC ratings.

4. Results

4.1. Descriptive Statistics and Chi-square Test

Table 1: Descriptive Statistics and Chi-square Test

Screening Results			
Applicant Groups	Screened into ASL I-IV	Screened into ASL V	Screened into ASL VI+	*Screened into Interpreting***
Two-year degree (n=53)	13 (25%)	23 (43%)	17 (32%)	*0 (0%)***
ASL I-IV only (n=197)	84 (43%)	79 (40%)	34 (17%)	*0 (0%)***

Note: **The fourth column (Screened into Interpreting) was not used in the chi-square analysis because the frequency in the cells were zero.
$\chi2 = 8.13*$, df = 2. Numbers in parentheses indicate row percentages adding up to a total of 100%.
*p < .05, Cramer's V= 0.18.

4.2. How do applicants with a two-year degree in ASL-English interpretation compare to those with only ASL coursework in regard to expressive ASL competence?

Chi-square results demonstrated statistical significance (Table 1). The ratings of applicants who had completed a two-year degree in interpreting were different to the ratings of those who had completed only ASL I-V coursework. For applicants screening into ASL V (which is year one at UNC) there was a 3% difference. For applicants screening into ASL VI and higher (which is year two at UNC) there was a 15% difference. The effect size was calculated using a Cramer's V, equalling 0.18. This effect size demonstrates there was a minimal difference between the two applicant groups.

Based on this data (Table 1), and considering only applicants who had been assessed as being ready for program entry (ASL V, ASL VI+, or interpreting rating on the DOC) we found that:

- Applicants with a two-year degree in interpreting were admitted into ASL V at a rate of only 3% more than applicants with only ASL I-IV coursework, demonstrating the minimum language competence to enter the program in the first year of study, with four years until graduation.

- Applicants with a two-year degree in interpreting did perform better, since 32% screened into ASL VI or higher, demonstrating greater than minimum language competence, with expected graduation in three years. Finally, 15% more of applicants with a two-year degree scored ready to enter ASL VI+ compared to applicants who had only completed ASL I-IV coursework (17%).

Overall, completing a two-year degree in interpreting resulted in an 18% greater success rate in terms of program entry into year one or two at UNC's four-year interpreting degree than did completion of ASL I-IV courses only.

4.3. Do applicants with a two-year degree in interpreting transfer with expressive skills suitable for entry to year three of a four-year interpreter education program?

None of the applicants who had completed a two-year interpreting program demonstrated expressive readiness to enter year three of ASLEI. Students who are in year three in the ASLEI degree program have completed the necessary ASL I-IX coursework and are beginning interpreting courses. It is expected and projected by many two-year interpreting program course catalogs that graduates of these 24 two-year interpreting programs will enter year three of interpreting coursework in a four-year interpreting degree program. The results of this study demonstrate that in reality less than half of applicants with a two-year degree screened ready for ASL V (43% in Table 1). In other words, out of the 53 applicants with a two-year degree, 23 were eligible for progression into year one of a four-year degree (ASL V). At UNC, this means that these applicants have demonstrated the minimal language expressive competence to enter year one courses (ASL V), and that no applicants were assessed as ready for year three coursework.

5. Discussion

It is a logical assumption of applicants who have completed a two-year degree program that they will be assessed as ready for the necessary year three coursework in a four-year interpreting program, in order to graduate within two years. Also, it could be reasonably expected that applicants who have completed ASL I-IV should screen ready for ASL V, considering appropriate learning progression. However, the findings of this study demonstrate that there was only a minimal difference between the expressive ASL competence of applicants who took a two-year degree in interpreting compared to applicants who had completed only ASL I-IV coursework. Further, none of the applicants who had completed a two-year degree screened ready for junior-level interpreting coursework at UNC.

ASL competency: Comparing student readiness

The majority (75%) of applicants in the study who had completed a two-year degree in interpreting demonstrated expressive competence to enter UNC's ASLEI program at either year one (ASL V) or year two (ASL VI+) of the four-year degree program. It is important to note that a significant number of applicants (43%) with a two-year degree in interpreting, demonstrated only the minimum language competence for program entry into the first semester of year one (ASL V), and would need to complete four more years to earn their bachelor's degree from UNC. This is only 3% more than those who had completed only ASL I-IV coursework.

It is significant that 32% of applicants with a two-year degree in interpreting demonstrated ASL competence for program entry at the level of ASL VI or higher, entering year two of ASLEI. Remarkably, 17% of applicants with only ASL I-IV coursework achieved entry into ASL VI or higher. Further research could examine specific curricula to determine any patterns in screening results among graduates from specific institutions.

It is important to recognize the trend that most two-year interpreter education programs have academic schedules and curricula that typically require students to work on ASL language development at the same time as being required to develop new interpreting skills. *The results of this study show that the difference between these groups is so statistically minimal that interpreter educators everywhere should question the validity and effectiveness of two-year programs for students who are not already fluent in the two languages in which they plan to work* (italics ours, for added emphasis).

Further, reviewing a range of institutional course catalogs specific to the applicants who had earned a two-year degree, showed a trend where two-year programs inform their students that they can expect to be ready for year three interpreting coursework at an institution offering a four-year degree. Catalogs from two-year interpreting degree programs claim that these two-year interpreting program graduates are effectively prepared for entry-level interpreting work, and that they can confidently approach the national certification tests. The data from this study align with findings of earlier research (Boegner Godfrey, 2010; Witter-Merithew & Johnson, 2005) indicating that graduates from two-year interpreting degrees are in fact most unlikely to achieve such outcomes and that such claims should therefore arguably be removed from the relevant course catalogs.

Careful assessment regarding academic programming should be taken as more two-year programs in the US create agreements whereby students graduating with a two-year degree in interpreting transfer to a partnered university to earn a four-year (bachelor's) degree in another two years - especially since these partnered programs often do not include further training in interpreting, but simply provide the general education credits needed for a four-year degree. According to Volk (2014), partnership without further training in interpreting perpetuates the false idea that less education in the area of interpreting is acceptable. Where such partnerships do offer additional interpreter education, they frequently lack scope and sequence for scaffolded learning and/or require the transfer student to step back and retake some portions of their completed two-year degree program of study (L. Johnson, personal communication, February, 2018). Boegner Godfrey (2010) suggests the restructuring of two-year programs to offer degrees in foundational ASL, without interpreting. Students would then be provided with the necessary language competence and could potentially transfer into a four-year interpreting program at the third-year level because of their established language competence.

The data from this study, which shows that students completing a two-year program are only minimally more skilled in producing ASL than those who have only taken four semesters of ASL (ASL I-IV), reinforces the notion that a two-year degree in interpreting is not enough to adequately prepare its graduates for professional practice or certification.

Certifying bodies should give serious consideration to these findings, which suggest that the minimum requirement to apply for a certification exam should be a discipline-specific four-year degree. This standard would align with other human services professions in fields such as healthcare, education, and others. In addition, accrediting bodies should re-examine accreditation for four-year interpreting programs and two-year interpreting programs, as the outcomes of such programs appear to vary.

The book *Toward Competent Practice: Conversations with Stakeholders* (Witter-Merithew & Johnson, 2005) identified the collective agreement about the minimum skills a graduate must possess upon completion based on 34 entry-to-practice competencies. However, the discipline needs to integrate these competencies into the curricula of four-year interpreter education programs and then establish exit-level assessments based on these standards through, for example, a portfolio process (Witter-Merithew & Johnson, 2004). As Witter-Merithew & Johnson pointed out: "By creating a comprehensive curriculum designed to guide learners into mastery of all the competencies, the field can determine what can be [effectively] achieved" by way of standardized interpreter education (2005, p. 119).

6.   Limitations and further research

This study was limited to the applicants to UNC's ASLEI program and only looked at expressive ASL skills. Further research is needed to compare other outcomes of two-year interpreter education programs across the US and internationally. A further limitation of this study is that curricula from the various institutions that the students came from were not available for review. Therefore, it is not possible to identify similarities or differences in curricula that may have impacted these results. This study also does not include longitudinal data regarding any potential link between ASL expressive skills upon program entry and post-graduation certification. Further research is needed to compare the outcomes of graduates of two-year and four-year programs. Such studies are still needed in order to determine the most appropriate duration of education for future interpreters. In addition, leaders in ASL instruction might consider further research in what Boegner Godfrey (2010) refers to as explicit information related to facilitation of student mastery of requisite ASL knowledge and skills. It could be helpful to examine ASL programs in high school, where young people may take up to four years of ASL. Development of ASL programs in high schools may lead to greater applicant readiness for a four-year degree in interpreting, whilst also employing more D/deaf language experts as teachers of ASL in primary and secondary settings. This partnership between interpreter education and qualified community members relates directly to our history in interpreter education. Cokely (2005) challenges programs to look back at the history of interpreter education in the US when the Deaf community served as 'gatekeepers' of interpreters entering the field. This would encourage programs in the US to substantially include members of the D/deaf community in the education of interpreters throughout their course of study. As Cokely (2005) pointed out, this requires that programs demand a great level of research informed education and that educators question practices that are not supported by research.

7.   Conclusion

While the ideas that led to this research have been expressed by a number of interpreter educators in a variety of forums and publications over the last forty years, this is the first quantitative study that provides educators with insight into the outcomes of two-year interpreting programs. It is the only study that demonstrates a statistically significant result showing that there is little difference in ASL expressive competence between those who graduate from a two-year degree in ASL-English interpreting or those who have completed four semesters of ASL. This information is provided with the goal of contributing quantifiable data needed for the field of interpreter education in the US to progress. The results of this study demonstrate the need for a coordinated effort where ASL and interpreter education, accreditation, and certifying bodies move toward establishing the minimum requirement of a four-year degree in interpretation for ASL-English interpreters.

Acknowledgments

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Online Project Based Learning: The efficacy for signed language interpreters

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Abstract

Four online lessons were created to study the efficacy of teaching translation within a constructivist approach (Wilcox & Shaffer, 2005). The lessons were self-directed and project-based. Twenty participants supplied a baseline sight translation of an English story into American Sign Language (ASL). A model of "meaning" was used to assess the texts consisting of three levels: literal, enrichment and implicature (McDermid, 2012). A mixed method evaluation was conducted and results showed that participants enriched their baseline target texts, ranging from 2 to 17 instances. Eight completed a number of online lessons and submitted a second translation of the text, which evidenced more enrichment ($p* < .05$). The participants described the lessons as beneficial and appreciated the design. However, the completion rate was low as was student-to-student interaction, perhaps due to the interface. Tentative conclusions of this small-scale pilot study were that for this cohort, self-directed, project-based learning led to enhanced use of enrichment and implicatures.

Keywords: on-line, pedagogy, project-based, interpreter, literal, signed language

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Online Project Based Learning: The efficacy for signed language interpreters

Online learning is becoming a popular medium for spoken language as well as signed language interpreters (Johnson & Witter-Merithew, 2004; Massey, 2005; Moreno, Otero-Sabogal, & Soto, 2011). Massey (2005), for example, reported on initiatives to promote online learning for translators that included the eContent Localization Resources for Translator Training, described as a "large-scale EU-sponsored international project" for online translator training (p. 630). For signed language interpreters in the United States, webinar courses have been routinely hosted by the National Consortium of Interpreter Education Centers, and online programs are offered by the National Technical Institute for the Deaf, Western Oregon University, and the University of North Florida. However, there has been little research into the efficacy of these programs.

This study addressed that gap by investigating the effectiveness of four online lessons for signed language interpreters using a mixed-method procedure. Specifically it looked at the characteristics of their target texts in American Sign Language (ASL) prior to participation in the lessons and then after having completed a minimum of one of the four online lessons. The goal was to look for evidence of changes to the target texts in terms of the frequency of enrichments or the addition of potentially implied meanings. Further this study also asked the participants to talk about their experience learning online, within a qualitative methodology, to gather their insight into what they deemed beneficial or problematic.

1. Review of the Literature

In order to investigate online learning, the literature was reviewed to determine an approach to constructing online lessons and to understand the nature of online learning environments. In addition, a model of the translation process was needed as a means of structuring the assessment of the translated texts and to organize the lessons. A Project-Based approach was identified in the literature and adopted for this study. McDermid's (2012) model of the interpreting/translating process was chosen as the framework for teaching and assessment. These and the nature of online learning environments will be discussed next.

1.1. Project-Based or Problem-Based Learning

One approach to interpreter or translator training is the traditional teacher-centered didactic approach, but Senior (2010) suggests that there are "limitations of transmission approaches to teaching and learning" in second language classrooms (p. 137). A different approach to education is that of project-based or problem-based learning (Senior, 2010). In a project-based classroom, students are asked to work towards a goal, apply a variety of theories and practice discrete skill sets.

The approach chosen in this study was project-based learning (PBL). Dole, Bloom, and Kowalske (2016) define it as presenting a problem to solve, and so it "begins with an end product or 'artifact' in mind" (p. 2). Such pedagogy is constructivist and has been used previously to teach students of translation (Ahluwalia, 2008; Kiraly, 2005; Li, Zhang, & He, 2015; Massey, 2005), and foreign languages (Levine, 2004). Such projects should be authentic in nature (Ahluwalia, 2008; Kiraly, 2005). The benefits of this approach include student control of the pace of learning as well as the area of focus (Ahluwalia, 2008). PBL supports different learning processes, such as acquisition, socio-cognitive reflection, and the co-emergence of different understandings and roles in the pedagogical process (Kiraly, 2005). It can also enhance critical thinking, research abilities, communication, time management (Tamim & Grant, 2013) and procedural knowledge concerning the translation process (Massey, 2005).

There are some caveats with PBL approaches. Authors have cautioned teachers to be prepared to keep students on task (Blumenfeld et al., 1991; Dole et al., 2016). There should be clearly defined parameters for the project and buy-in from the students (Savery, 2006). Savery (2006) also suggests the need for strategies such as instructor tutoring, participant collaboration and opportunities for self- and peer-assessment.

1.2. Online Learning

In addition to a project-based pedagogy, the current study also examined the nature of an online learning environment. Several benefits of this approach have been noted in the literature; for example, Ahluwalia (2008) and Levine (2004) found that internet-based projects could foster cooperation as well as the "authentic integration of skills" (Ahluwalia, 2008, section 3, paragraph 3). Web-based delivery can stimulate "confidence, self-esteem, and autonomy" in students (Ahluwalia, 2008, section 3, paragraph 3). Moreno et al. (2011) found online delivery to be effective for participants with varying work schedules. It allows for non-linear, student-directed research and constructivist learning (Massey, 2005). This mirrors the cognitive demands of fields such as translation (Massey, 2005), where translators must instantly grapple with different problems in a variety of contexts.

While these benefits have been highlighted, so too have challenges of online learning approaches. In a traditional classroom, the discourse can follow a pattern of initiation by the teacher, followed by an immediate student response and then an evaluative comment (Tercedor-Sáchez, López-Rodríguez, & Robinson, 2005). In an asynchronous, online environment, this immediate response and feedback is absent (Alexander, Vale, & McKee, 2017). To overcome this, instructors must learn how to frame their lessons and scaffold the learning (Tercedor-Sáchez et al., 2005). For example, an educator must try to predict student questions or responses and create activities to address them.

Several studies have noted lower retention and completion rates in online classes as compared to face-to-face traditional classrooms (Carr, 2000; Salcedo, 2010). It has been estimated that "course-completion rates are often 10 to 20 percentage points higher in traditional courses" (Carr, 2000, A39). In Sachtleben and Crezee's (2015) study of interpreting students in blended and fully online learning environments, students reported several challenges including "interacting socially with others" and "finding one or more partners to pair up with" as well as "ensuring constant engagement" between the students and teacher (Sachtleben & Crezee, 2015, p. 32).

The literature highlights a number of ways to improve student retention and participation, including establishing a sense of community, trust-building exercises, consistent interaction, group activities, and reasonable class sizes (Rovai, 2002). Sachtleben and Crezee (2015) and Massey (2005) advocate for access to language peers, perhaps because peer feedback is thought to be a supplement to the lack of immediate interaction with an educator (Massey, 2005). Protocols have also been suggested to include different types of prompts in online discussions leading to different constructivist and process-based activities (Ehrlich, Ergulec, Zydney, & Angelone, 2013). Wang (2015) advocates a blended model in interpreter education with both online and face-to-face aspects. An initial in-person orientation to the program or specific training on the technology has also been recommended (Blumenfeld, et al., 1991; Dole et al., 2016; Sachtleben & Crezee, 2015).

1.3. *Signed Language Interpreters and ASL*

There is a small body of literature on online learning and signed language interpreters. In one US-based qualitative study, the authors surveyed two cohorts of alumni from an online graduate level program with a focus on ASL-English interpreting. The participants shared that to succeed in that online environment required "strong interpersonal relationships," opportunities for face-to-face interactions, and a "social constructive approach" (Darden, Ott, Trine, & Hewlett, 2015, p. 276), meaning the ability to discuss ideas with peers to build a better understanding of the course content. The students also wanted instructors who were flexible and "modeled collegiality" (Darden et al., 2015, p. 276). While students appreciated multiple forms of technology, the authors also cautioned, "The price of technology fatigue appeared to overwhelm the benefits perceived from the use of technology to collaborate." (Darden et al., 2015, p. 278).

In another US-based study, the investigators looked at 50 students in a blended program designed for educational signed language interpreters and spanning nine semesters (three years) (Johnson & Witter-Merithew, 2004). The participants were working interpreters, many of whom had no formal education in ASL or interpreting. They began with a range of scores from 1.5 to 3.4 (average 2.6) on a modified version of the Educational Interpreter Performance Assessment (EIPA), a widely-used test for educational interpreters. This was below the 3.5 recommended standard. Upon completion of the program, all of the participants improved their ability to interpret and their scores on the full EIPA ranged from 2.4 to 4.6 with a median of 3.5 (Johnson & Witter-Merithew, 2004).

There has also been some research into teaching signed languages via distance learning. Buisson (2007) looked at the efficacy of seven online lessons designed to teach ASL glossing, a literal transposition of ASL signs into written English. It was found that the participants improved their knowledge of ASL grammar as compared to the control group. In a study of an online course in New Zealand Sign Language (NZSL), students described the benefits of flexible design and a schedule of convenience over a face-to-face classroom (Alexander et al., 2017). However, the authors note that while the students demonstrated content knowledge, it was "to a lesser degree of proficiency than we have observed in classroom learners in a beginner's course covering equivalent content" (p. 75). In a study of a blended ASL classroom, where some students were present while others were offsite, Ehrlich-Martin (2006) highlighted several disadvantages. These included a lack of visual presence by the students who conferenced in, problems with turn-taking, a lack of peer interaction, the perception that off-site students were interrupting the class, and concern when the videoconferencing software broke down. Many of these challenges were due to the limitations of the technology, and by the end of the course, seven of the eleven respondents to a post-class survey preferred traditional face-to-face classes for ASL instruction (Ehrlich-Martin, 2006).

1.4. *Theoretical Translation Model*

Having chosen an online, project-based environment for the study described in this paper, a multidimensional theoretical model for translation was adopted as the framework for the lessons and assessment. The model recognizes the multidimensionality of language, and that a sentence carries what Abbott (2006) refers to as a "bundle of propositions" (p. 7), both the stated meaning and implied meanings. The model was originally proposed by McDermid (2012) and takes into consideration at least three levels of meaning, the literal or verbatim level, an enriched level, and that of implicature.

The model used in this study also drew upon Halliday and Hasan's (1976) model of cohesion, the second level of meaning in McDermid's (2012) model. Halliday and Hasan argue that "ties" enhance cohesion across sentences. These ties include the clarification of reference, the addition of conjunctive devices, the inclusion of words that are synonyms or related (lexical cohesion), the replacement of substitute words such as "so" and "did" with a portion of the earlier discourse and the filling in of elided expressions (ellipsis). Sections 1.4.1 through 1.4.3 next detail the characteristics of a target text at the literal, enriched or implicature levels.

1.4.1 Literal meaning

Following in Grice's (1975) footsteps, literal meaning was defined in this study as "closely related to the conventional meaning of the words" (p. 44). At a literal level, an interpreter should not add to or subtract from a target text and should follow the grammar of the target language audience (McDermid, 2012). Some aspects of the target text can be clarified without going beyond the literal meaning, such as words or signs with multiple meanings (polysemy), references indicated by anaphoric pronouns, and deictic or indexical expressions that refer to the time of the utterance.

At a literal level, an interpreter would also deal with anisomorphic or dissimilar structures between the source and target texts. So, for example, ASL and English differ in the use of pronouns (Kegl, 1987; Wulf, Dudis, Bayley, & Lucas, 2002), where ASL sentences may have fewer than those in an English sentence. Therefore working from ASL into English, an interpreter may have to include more. ASL and English can also exhibit different grammatical structures at the surface level (Liddell, 1980; Matsuoka, 1997; Wilbur, 1979), such as Topic-Comment (Janzen, 2007). An interpreter has to be prepared, therefore, to restructure the surface order of the target sentences.

1.4.2 Pragmatic enrichment

Linguists (Ariel, 2008) as well as signed language interpreter educators (Wilcox & Shaffer, 2005) have argued that a literal interpretation of an utterance leaves meaning under-determined. Instead Relevance Theorists describe enriching literal meaning in context by creating explicatures to arrive at a clearer understanding of what was said (Carston, 1996; Sperber & Wilson, 1995). Blum-Kulka (2000) refers to the "Explicitation Hypothesis," that target texts must include enrichments to enhance their comprehensibility to the target audience. Nida (1964), a renowned translator of the Bible used the term "expansion" to describe how target texts could be clarified. Later signed language interpreter educators also supported their use (Humphrey & Alcorn, 2001; Lawrence, 1994).

In the literature, there are many examples of enrichment strategies (Klaudy, 1998; Sequeiros, 2002). As described by Halliday and Hasan (1976), language users may elide or leave out information and still produce a coherent utterance. One aspect of speech that can be elided in English without altering the grammaticality of a sentence is an adjunct (Carter, McCarthy, Mark, & O'Keeffe, 2018). Adjuncts may serve as an adverb or a prepositional phrase and can provide additional information about where events took place, the location or when, the time frame. This location or setting can also be considered the "ground" in a sentence. Emmorey (2005) notes the importance of "grounds" in ASL as she found Deaf signers establish these first before placing "figures" in the signing space.

Other triggers for enrichment and a way to enhance text cohesion is through the clarification of reference or the replacement of substitute words such as "one," "so" and "did" with some aspect of the earlier discourse (Halliday & Hasan, 1976). Verbs can also be enriched and Karttunen (1971) suggested that to "forgot to" do something implies it wasn't "remembered" for a while (p. 341). Peccei (1999) explained how "realize, discover and find" entail initially "not knowing" (p. 22).

Agentless passive voice is another candidate for enrichment. In English or ASL, the speaker or signer can choose to omit the agent responsible for an action. However in ASL, unlike in English, the inflection of the sentence verb outside of the signing space implies someone other than the signer was performing the action (Janzen, O'Dea, & Shaffer, 2001). Power and Quigley (1973) found that Deaf students even into their late teens had a difficult time understanding the meaning of such agent-deleted passive constructions in isolated sentences in written English.

Several studies of sign language interpreters found they did indeed enrich their ASL target texts when working from English, for example by including a concept and its antonym (Livingston, Singer, & Abramson, 1995; McDermid, 2012; Russell, 2002). In Russell's (2002) study an interpreter translated the English phrase, "…it really didn't hurt that much…" as LIGHT, NOT HARD, HURT NOTHING (p. 101), and included both the concepts of a "light hit" and its antonym "not a hard hit."

Halliday and Hasan (1976) also describe overall lexical cohesion, the addition of synonyms or near synonyms. The strategy of enriching broad classes of objects (superordinate terms) by including examples (hyponyms) or enriching holonyms (whole objects or processes) through the addition of their parts (meronyms) is an example of

this and was identified in the literature on translation and signed language interpretation (Livingston et al., 1995; McDermid, 2012; Nida, 1964).

1.4.3   Implicature

The final level of meaning in the framework of this study was that of implicature. Implicatures are potential meanings implied by a speaker that the audience has to then infer (McDermid, 2012) or work out in context (Bach, 1999; Grice, 1975). The study by Livingston et al. (1995) found interpreters used the strategy of "explicitness" by "overtly stating the sub-text of the story which included the implicit meanings" (p. 165). Russell (2002) notes how an interpreter took the interrogative "And is your teacher in court today?" and rephrased it as an imperative in ASL, POINT WHERE? (p. 100). In McDermid's (2012) study, some of the interpreters interpreted the interrogative "She then asked me where I was at the Deaf rally for ASL rights…" as an accusation WHY YOU NOT SHOW-UP, and the three Deaf native ASL raters supported that interpretation (p. 186). Implicatures can be denied or negated by the speaker, which is one of the tests used to determine their characteristics (Peccei, 1999). This means that if an interpreter adds explicitness to the target text, there is a risk the original interlocutor may deny having said that.

2.   Research questions

Having chosen project-based learning delivered through an online environment, and having structured the lessons and assessments around a model of the interpreting process, the research questions posed for this study were:
1) Can a model of multidimensionality be used for teaching and assessment of signed language interpreters within an online environment?
2) How effective is self-directed project-based learning pedagogy for adult learners or signed language interpreting in an online learning context?
3) What are some of the criteria to create a successful online, project-based learning environment for signed language interpreters and what are some of the impediments?

3.   Methodology

This study followed a mixed methods approach by collecting both qualitative and quantitative data. This section describes the project the participants worked on, an English text entitled "Art Class," a discussion of the online lessons and a explanation of how the qualitative and quantitative data were collected.

3.1.   Text Construction

Based on the review of the literature and the model of translation chosen, the text "Art Class" (Appendix A) was constructed. The text was created so that it could be translated at a literal level but triggers for enrichment were included such as agentless passive voice and the inclusion of substitute words "so" and "do." Some information was elided, for example adjuncts, which were then potential triggers for addition. This text was then read aloud and recorded with a pause of 3 to 4 seconds at the end of each sentence. Pauses were inserted at the end of each sentence to accommodate the needs of newer interpreters and to allow the participants to focus on the translation process. The mode of translation chosen for the study was sight translation, again to accommodate the needs of novice interpreters. Unlike the consecutive or simultaneous mode, the sight translation process provides the interpreters with the full text and time to practice translating different aspects of it. This parallels the experience of professional interpreters, who may be given a written speech or handout to interpret, as it is later read aloud. A transliterated version was also provided for the Deaf interpreter who took part in the study. In the transliterated

version, the interpreter signed or spelled each word and followed the exact order of the English source. The recording was approximately a minute and a half in length and included a total of 12 sentences. As seen in Appendix A, there were a number of enrichments and implicatures added to the text by the participants.

3.2. Lesson Construction

Based on a review of the literature and the theoretical framework chosen to assess the translation products of the participants, four lessons were created. These included "Antonyms," "Figure and Ground," "Verbs," and "Reference." These focused on various ways to enrich a text when working from English into ASL. Each webpage had a number of activities in written English, either sentences or stories, which the participants could practice enriching. Some pages had learning activities such as "fill in the blank" games. Each page had a discussion form at the bottom where the participants could post questions or add their comments. Students were also encouraged to post links to videos of their translated works. Examples of how to enrich the original text "Art Class" were also included in written English. The focus of each website was to prepare the students to create a second draft translation of the story "Art Class." The activities typically started with working from written English into written English, the first language of most of the participants. The participants were then asked to work from English into ASL. This added some elements of scaffolding to each lesson.

3.3. Participants

An electronic invitation was sent to the education programs listed in the database maintained by the Registry of Interpreters for the Deaf and to the Conference of Interpreter Trainers. An invitation was also sent to the interpreter education programs in Canada. All participants confirmed they were a minimum of 18 years of age and had conversational fluency in American Sign Language and English. Each participant was given an identifier, the letter "P" with a number, designating the order in which they joined the study.

   A total of 61 individuals registered for the lessons. However approximately two-thirds of these individuals did not participate in any aspect of the study. Twenty individuals completed the demographic questionnaire and submitted a first draft of "Art Class." Of these individuals, 19 identified as "hearing" and one as Deaf. Seventeen were female and three were males. The mean age was 35.66 years (Median 30, Mode=23, Standard Deviation 13.01). The range was 21 to 63 years old. When asked how many years they have used ASL, the mean was 14.66 years (Mode = 6 and median = 7, Standard Deviation=12.49) with a range of from 3 to 43 years. Nineteen considered English their first language while Indian Sign Language was the first language of one participant. Five were certified interpreters.

3.4. Procedure

Initially, the participants were given the option of submitting a baseline translation of "Art Class" and only 20 did so. These 20 were then instructed to attempt as many of the four lessons as they wanted and at their own pace. When they were ready, they were asked to submit a second translation of "Art Class" and to complete an evaluation of the course.

3.5. Data Collection and Analysis

The data for this study was collected during a three-month period and from a number of different sources. These included:
- A demographic questionnaire,
- The comments shared by the participants on the discussion boards for the lessons or via email,
- An analysis of the baseline sample translations of "Art Class" (Appendix A),
- An analysis of the second, final translation of "Art Class," and

- An anonymous overall evaluation at the end of the process.

For the qualitative data, the investigators conducted a thematic analysis as other authors have done in problem-based learning studies (Imafuku, Kataoka, Mayahara, Suzuki, & Saiki, 2014). The quantitative data was analyzed using descriptive and non-parametric statistics, where the samples of translation were converted to a frequency count and then compared at the level of omissions, literal, enriched and implicature levels for a total of four possible rankings per sentence. Given 12 sentences in the English text, there were a potential 48 different rankings possible per individual, where they either omitted the sentence, produced a literal translation, enriched the sentence or included an implicature. The Mann-Whitney test was then used as the sample sizes were quite small and the resulting data was not uniformly distributed. Due to the small sample sizes, the power of the study is low, and the findings should be considered tentative.

3.6. ASL Proficiency Rating

The participants were asked to assess their ASL fluency using the Sign Language Proficiency Interview descriptors utilized by Caccamise and Samar (2009). The process of self-assessment has been used in other studies of signed language interpreters (Stauffer, 2011; Laird, 2005; McDermid, 2014) and authors have written that the descriptors are clearly written for untrained raters (Stauffer, 2011; Laird, 2005). In at least three studies, a high inter-rater concordance was found between the self-assessments of untrained and professional raters within one category on the SLPI or a similar protocol (Laird, 2005; McDermid, 2014; Stauffer, 2011).

3.7. Inter-rate Concordance

Inter-rate concordance was part of the analysis process, by having at least two of the researchers review the written submissions and translation samples. For the qualitative data, the researchers compared their self-identified categories and properties and jointly agreed upon common themes and sub-themes. To assess the samples of translation, two researchers created a frequency count of the number of times a participant omitted a sentence or interpreted it at the literal, enriched or implicature level. This data was compared and there was high inter-rater concordance with only a few variances of two to three items per participant, out of 48 potential rankings. These were discussed and agreed upon by the researchers.

4. Findings: Evaluation of online learning

Due to the nature of this study as a self-directed project-based online experience, the participants engaged with the lessons and process to varying degrees. For example, 20 individuals submitted an original base-line draft of the video "Art Class" but then only 11 were active in the lessons to varying degrees and of those, only eight completed a second draft of "Art Class" and an evaluation of the experience. To assess the data, therefore, the decision was made to separate these groups into two, the "original twenty" and the "final eight" to discuss the findings. In the next section, the qualitative data collected from the online discussion boards and the overall evaluation by the "final eight" will be reviewed first. This will be followed by a quantitative examination of the characteristics of the first draft of "Art Class" by the "original twenty" and then a comparison with final draft of the same text by the "final eight" participants.

4.1. Qualitative Findings of Final Eight

4.1.1 Participation

For the purpose of this study, active participation was defined as having submitted at least one translation and completion of the evaluation or participation in a least one discussion board. All of the "final eight" submitted at least on translation of "Art Class" and participated in a minimum of one lesson. Participant P32 was the most active having contributed 13 responses in the discussion boards, one video submission (baseline) and the evaluation followed by P34 who performed eight tasks and P3 and P16 both of whom performed seven tasks.

4.1.2 Amount of Work

In the evaluation, when the eight were asked about the amount of time it took and given three options (1 "The course didn't take up too much time," 2 "Neutral," 3 "More time than I was willing to give"), no one checked off "more time than I was willing to give." Six selected, "The course didn't take up too much time" while two were "Neutral." When asked how much they interacted with their peers (1 A lot of interaction, 2 Neutral, 3 No interaction) no one checked off "A lot of interaction." Instead four (P3, P16, P37, P32) checked off "No interaction" while three were "Neutral" (P17, P34, P61). When asked to discuss their interaction, descriptors included "limited" (P32) or "minimal" (P37, P61). One person talked with a peer offline (P16). Another participant wrote, "I put out a thought in one module and read some of the replies." (P17). Reasons given were a lack of time (P3, P61) or problems with the technology (P34, P61), which will be reviewed in section 4.1.6.

4.1.3 Benefit of the Lessons

As part of the evaluation, the participants were asked if the lessons improved their ability to interpret from English into ASL. Six of the eight checked off "Yes" (P3, P16, P32, P37, P61) while two were unsure (P17, P34). One person explained by writing, "So, I tried to incorporate what I learned in the lesson to my second video and it felt like a 'stretch' for my brain." (P3). Some learned new terminology to describe their work (P34) or found it a review of what they knew (P3, P34, P37, P61). For example, one wrote, "It confirmed that I have a handle on these foundations." (P61).

   In terms of the lessons, one called them "relevant" (P3) and two used the term "fun" (P16, P34). A fourth noticed how the skills "were compounding as you progress" (P32). Several liked seeing samples of interpretation (P16, P17, P37). One wrote, "I really enjoyed having a higher level of self-monitoring and actively making language choices with intent, I felt more engaged in the work." (P3). When asked which lessons they had applied, three chose all four lessons (P3, P16, P32). One selected three lessons (P17). Three checked off "not yet" (P34, P37, P61).

   Regarding learning styles, three liked having discrete skill sets to work on (P16, P32, P37). One individual, who chose to remain anonymous shared, "It provided more deliberate practice" while another wrote, "…and the way the lessons were broken down were clear and helpful" (P32). A third replied, "I've found that the best way to improve my overall interpreting is to pick one thing to focus on for a while before picking a new topic or else it can be overwhelming. The [lessons] were a nice way to break down different aspects of interpreting and allowed my mind to think about it while working without being overwhelming." (P16). A fourth shared, "I like the detailed explanation in each module of what passive voice is, what an entailment is, what figure and ground is, and how they apply to our interpretations." (P37).

4.1.4 Concerns about the Lessons

In the evaluation, one participant questioned the underlying but unstated goal of one lesson in particular, Figure and Ground, which was to encourage the addition of a referent as needed. This person wrote, "…I wonder when it is too much? What if we pick the wrong ground? It can mess the interpretation up. e.g.: "I took an art class" if I

choose at a college and later it turns out to be a private studio; then maybe the subsequent 'grounds' may be wrong; like where I got the list of supplies, etc." (P17).

> Another (P61) responded to this,

>> Hi (name of P17) that's a good question you have there and I think this is where our on-going monitoring as interpreters comes in and if we are fortunate enough to be working with a co-interpreter this is where their support is invaluable. I think we mitigate the errors by doing our prep, advocating for consistency in interpreters (i.e., we work in places where we have context), etc. What do you think? Then there are the times when we have provided too much or incorrect 'ground' and we have to repair it. I guess what I am thinking is that there is no magic bullet. Thoughts? (P61).

> A third (P32) wrote back,

>> (name of P17) I am so glad you brought that up! My instructors have DRILLED the risk of "additions" into my brain. I'm so careful not to take too many liberties as we will have enough repairs when we THINK we had the message correct. However, there are clearly some places where background is pretty clear. I'll work on including those in my interpretation. Regardless, we will have to make repairs with any interpretation, I guess! (P32).

Another issue raised by 3 participants was around critique. When asked to submit a video translation for review one wrote, "GULP! So nervous to make a public video.., but here is my try without too many attempts." (P32). She also wrote, "Please don't think I'm being critical-I'm NOT. I'm so green and am trying to learn from you guys. Honest. I would welcome ANY suggestions on my interpretations or homework submissions." (P32). In another assignment, a second person (P37) made a point of saying he/she was open to comments and wrote, "Here's a video of my interpretation to the verb story. Open to feedback." As part of the overall evaluation, a third shared, "I really liked the fact that nobody was bashing other student's work." (P34).

4.1.5 Benefits of Online Learning

There were positive comments concerning the online learning environment from four individuals. They liked that it was "truly self-paced" (anonymous) "on my own time" (P34) and one appreciated "the convenience of online learning" (P3). One participant said, "not the weekly time lines in other online classes that become stressful when life interferes with my plans" (anonymous). A second shared, "I like being able to think about what I want to say and then comment. If most people in the class approach it right, it's like having a curated conversation with someone and its enjoyable to read and re-read comments and reflect on them." (P3). A fourth wrote, "It got me to think about my work and it was nice to see other's perspectives because I don't always have a way of interacting with my peers like that." (P17).

4.1.6 Concerns about the Technology

Four people were concerned about the technology (P32, P34, P45, P61), and it impeded the participation of at least three (P34, P45, P61). One wrote,

> I was not able to figure out how to use the website interface in order to respond until the end of the course. I also struggled finding a video program I know how to use, is compatible with my computer, and had quality and clarity of picture that I was satisfied with. (I'm still not satisfied with the quality and clarity.) Technology tends to be a big barrier for me." (P34)

This same participant wanted a video tutorial on the interface (P34). Participant 32 was frustrated translating the videos on the website and shared,

> …the format was tough to access/reply/edit and the YouTube links would normally stall on me causing lots of headaches and delays. I ended up just doing them off paper [with the script] rather than SI [simultaneous interpreting] attempts because I was getting so frustrated and frazzled." (P32).

A third shared at one point, **"**I have a video to upload but YouTube is being really slow. I will try again later" (P45). Participant 61 didn't like the quizzes embedded in the lessons that were computer corrected, especially the

fill-in-the-blank exercises, and wrote, "I think the quiz technology could be less clunky i.e., the one that required the exact word for the answer." (P61).

4.2. Quantitative Findings

4.2.1 Baseline Translations of the Original Twenty

Next the researchers analyzed the ASL translations of the English text "Art Class" beginning with the baseline submitted by the original 20 participants. Examples of the participants' enrichments and implicatures can be seen in Appendix A. The non-parametric Mann-Whitney test was used to compare the findings (Stangroom, 2017).

Everyone enriched his or her text in ASL to some degree in the first draft. The enrichments ranged from as low as two to a maximum of 17 aspects of the text (see Appendix A for examples). The average number of enrichments was 10.5. Fifteen of the 20 participants also added at least one implied meaning, an implicature.

A between groups comparison was done of the first, base-line sight translations of the certified interpreters (5 individuals) to the non-certified interpreters (15 individuals). The assumption was that the certified interpreters would produce more enrichments or implicatures and so a one-tailed test was used. However, no significant difference was found for enrichment ($U = 35.5$, $Z = 0.13$, $p = .45$) or implicatures ($U = 27$, $Z = -0.87$, $p = .19$).

Next, six comparisons were done using Spearman's Rho within the group to see if there were any correlations between years using ASL, self-reported level of fluency in ASL, and the participant's age. These were compared to the number of enrichments and implicatures included in his or her target text. No significant correlations were found as noted in Table 1 Correlations.

Table 1: Correlations

Years using ASL and Enrichments	$R = 0.23$, $p = .32$
Years using ASL and Implicature	$R = 0.39$, $p = .09$
ASL Fluency Scale and Enrichments	$R = 0.08$, $p = .74$
ASL Fluency and Implicature	$R = -0.03$, $p = .88$
Age and Enrichment	$R = -0.12$, $p = .60$
Age and Implicature	$R = 0.10$ $p = .68$

4.2.2 Baseline and Second Draft of Final Eight

Next, and within a test-retest paradigm, the first and second drafts submitted by the final eight participants were compared. Assuming a practice effect, a one-tailed Mann-Whitney assessment was used. While the use of enrichments was statistically greater in the second draft ($U = 10$, $Z = -2.26$, $p^* = .01$), the inclusion of implicatures was not ($U = 20.5$, $Z = -1.15$, $p = .12$) though it had increased for four of the eight participants.

Table 2 provides some examples in written English of the enrichments or implicatures that were included by three of the eight interpreters (P03, P16, P17) in their second translation of "Art Class" that differed from their baseline translation. The nature of the enrichments was categorized based on one of the four lessons posted in the online learning environment (as the addition of an antonym, figure-ground, verb entailment or reference).

Table 2: Examples of new enrichments or implicatures post-lessons

Source	P03	P16	P17
I took an art class years ago.	Ground – I took a class, in a college	Ground - A place offered the class. Verb – They offered and I took it.	Verb elaboration – Decided to take and enrolled
My goal was to become a painter.	Ground – to paint on a canvas	Ground – to paint on a canvas	

But before I did I checked into the requirements.	Reference - The college class requires things. Ground – The requirements were on a list.	Substitute word – did – Before I went to class Verb elaboration – typed on the computer, scrolled, looked	Substitute word – did – Before I joined the class Reference – required for the course
I found out that I would have to pay $500 for the course.		Verb – it cost $500, I paid it.	
I also got a list of supplies I would need.	Reference – The college gave me the list.	Reference – The teacher gave me the list Verb – I would need and I bought them	Reference - The school gave me the list Verb elaboration – I got and they gave it to me
Now you have to understand that painting was a new skill for me.	Antonym – Was I skilled, no, that was not true		Verb elaboration – painting was a new skill, I had to learn.
So I was a bit concerned about how well I would do.	Verb elaboration – I looked at the canvas. Ground – I would paint on a canvas.	Verb elaboration – looked the canvas	Ground I would do, paining on a canvas.
In fact, I wasn't even sure I would go when the time came.	Verb of Judgment – It was hard to decide	Antonym – go or stay	
When I got there, I thought I was going to be judged!	Implicature – I decided to go to class.	Verb elaboration – students would make negative comments	Reference – students and teacher would judge me
But thankfully it wasn't so.	Antonym – They were nice, not judge Substitute word – They didn't look down on me	Antonym – nice, not judge	Verb of judgment – I was wrong
The instructor, much to my happiness was very supportive.	Ground – I showed him the canvas (my work)	Implicature – I was proud Verb elaboration – supportive, applauded me	Verb elaboration – teacher looked at my work, gave feedback, commented positively Ground - canvas
I ended up realizing I was a lousy painter but I really enjoyed the class!		Ground – canvas Verb elaboration – looked at the canvas	

Of the eight who submitted both a first (baseline) and second draft of "Art Class," only six actively participated in the lessons (P03, P16, P17, P34, P37, P61). The translations of those six were then specifically examined to see if there was a difference in their performance pre- and post lessons. Again, a one-tailed test was used. The six significantly increased their use of enrichments ($U = 4$, $Z = -2.16$, $p = .02$) but not their addition of implicatures ($U = 10.5$, $Z = -1.12$, $p = .13$).

4.2.3 Original Twenty compared to Final Eight

Finally the baseline translations of the original 20 and the final eight were compared to see if the groups were somehow different. The group of eight produced significantly more enrichments ($U=18$, $Z=-2.28$, $p*= .02$) and implicature ($U=18$, $Z=-2.28$, $p*= .02$) in their first draft/baseline than their 12 peers.

Overall and as a summary of the findings, the "final eight" participants found the lessons beneficial but also noted how the implementation of the technology could impede their participation. Even prior to engaging in the lessons, the "original twenty" included some enrichments in their target texts in ASL. However no difference was found in the target texts of the certified or non-certified interpreters and no correlations were noted between various characteristics of the participants, for example in terms of years using ASL and the frequency of enrichments. The "final eight" increased the number of enrichments upon having completed at least one of the online lessons, and they also evidenced more enrichments than their peers who did not submit a later second draft.

5.   Discussion and Conclusion

Returning to the research questions, the first asked if a model of multidimensionality could be used with signed language interpreters within an online environment. While not conclusive due to the small sample size, there was evidence that such a model could be used to characterize the baseline abilities of interpreters and to note their growth after having participated. For example, even prior to enrolling, it would appear that all of the participants viewed the process of translation from English to ASL as multidimensional based on the fact they enriched their baseline ASL target texts. Fifteen of the original 20 also included at least one implicature, such as CLASS EXPENSIVE to translate "I found out that I would have to pay $500 for the course," (Appendix A, Line 4). Lawler (2008) may have called this an example of adding in the implied meaning to the verb of judgment "pay."

The presence of enrichments and implicatures in the baseline texts supports Klaudy's (1998) theory that a process of explicitation should be expected in the translation process. In the field of signed language interpreting, Wilcox and Shaffer (2005) argued against a literal model of processing and here is evidence that it is occurring.

Examples of enrichments in the ASL target texts included the addition of antonyms such as COURSE NOT FREE or SCHOOL CHARGE-me to the English source, "I would have to pay $500 for the course," (Appendix A, Line 4). These antonyms demonstrate a converse relationship as discussed by Murphy (2010). The superordinate word, "art supplies" (Appendix A, Line 5) was translated using hyponyms such as PAINT, BRUSHES, PAPER, CLOTHING. The substitute words "so" and "did" (Halliday & Hasan, 1976) were embedded in the English source text as in "But thankfully it wasn't so," (Line 10) and "Before I did, …" (Line 3). "So" was often replaced in ASL with a repetition of the earlier utterance "I was not judged by others," though some participants created a verbatim translation like, "Luckily or thankfully, it did not happen." In the sentence "Before I did, I checked into the requirements," "did" was often replaced with the previous phrase "Before I took the class…"

Turning to the second research question concerning the efficacy of online learning, eight participants increased the inclusion of enrichments in their second ASL target texts ($p*<0.05$). While the number of implicatures did not significantly change ($p >0.05$), four of the eight participants included more in their second target text. The implications are that participation did lead to an increase in enrichments.

Regarding these findings, a number of study limitations should be recognized. Due to the small sample size, for example, the power for this study was too small to statistically and conclusively support these findings. Also, it should be recognized that only one text was used to assess the participants' baseline and subsequent performance. That text was very short and designed for entry level interpreters. Given a different type of text with greater complexity, the participants may have performed differently. In addition, the online learning environment only consisted of four lessons. Again, a greater number of lessons on a larger variety of interpreting strategies may have a more significant impact on the participants' work.

Despite these limitations, the study has yielded some interesting findings. For example, the use of enrichments is particularly interesting to researchers and educators, as it demonstrates higher order thinking. The inclusion of a plausible or required enrichment requires the ability to work at the level of context and not just the word or sentence level. It may go beyond deductive thinking, such as "What is the correct sign for the word to be translated," to inductive thinking, where the interpreter looks at the overall discourse to determine appropriate patterns of expected meaning. It may also represent the ability to take into consideration the needs of a potential audience and apply that to a target text in ASL.

The third research question looked at the overall design of self-directed project-based learning pedagogy for adult learners in an online learning context. The literature referred to low rates of completion for online studies (Carr, 2000; Rovai, 2002), which was also found in this study. Of the 61 initial registrants, only 20 submitted a baseline translation, 11 partook in some of the lessons and eight submitted a second draft translation. Researchers interested in conducting similar research may want to address this high attrition rate, perhaps by incentivizing participation through gift certificates or by offering continuing education units (CEUs) for completion.

An interesting difference was noted between the eight participants who submitted two translations and who participated in the lessons compared to the 12 participants who submitted only the baseline. These eight produced significantly more enrichments ($p*<0.05$) and implicatures ($p*<0.05$) than their peers in their first draft. Perhaps the ability to go beyond a verbatim/literal level of meaning suggests a willingness to study the phenomenon and include enrichments and implicatures. Future studies may wish to assess the students' abilities vis-à-vis enrichment prior to enrolment to see if there is a correlation with initial performance and course completion.

In terms of impediments to the learning, one may have been a lack of interaction, which was noted by other authors (Alexander et al., 2017; Sachtleben & Crezee, 2015). For example, when the eight who completed some lessons were asked to characterize their level of participation, four checked off "3 no interaction" while three were "2 neutral" (P17, P34, P61) and no one chose "1 a lot of interaction." As Senior (2010) explained there is a need for language students to develop a connection with each other and rapport with their instructor. According to Massey (2005), to be successful online learning must be "highly interactive" with "a maximum degree of tutor-learner and learner-learner collaboration" (p. 630). Strategies suggested in the literature were language or peer buddy networks for students who live or work in isolation (Sachtleben & Crezee, 2015).

Another impediment to participation may have been concern about public critique, mentioned by two individuals. A third felt the need to clarify that he or she was open to feedback. Again, this is something that must be considered as according to Senior (2010), adult language learners do better in a "supportive social climate" (p. 140). Mulayim and Lai (2015) argued for a Community of Inquiry (COI) framework, a social-constructivist approach, as opposed to a content-focused pedagogy, again which would require open dialogue and a supportive climate.

There were also several concerns about the technology, ranging from not knowing how to use the interface, problems finding software for acceptable video creation and editing, and challenges uploading videos to the Web. One participant wrote that "Technology tends to be a big barrier for me," (P34) while another eventually used paper and pen as he or she "...was getting so frustrated and frazzled" (P32). Lessons on the interface and video editing could have helped, as promoted in the literature (Carr, 2000).

In future studies, strategies to deal with these concerns could include activities that require group or pair work. This could include embedding specific prompts or protocols in discussion boards that students must respond to (Ehrlich et al., 2013). Specific lessons on how to provide constructive feedback may alleviate the participants' concerns about critique. More variety in review activities, such as student designed assessments, self-assessment rubrics and multiple-choice questionnaires may help (Tercedor-Sáchez et al., 2005). Other strategies could involve more variety in activities, such as the inclusion of clickable images, card matching games, and the use of downloadable files (Alexander et al., 2017).

Despite student concerns, there were many positive comments about the online learning environment. Three liked the self-paced nature of the lessons and "the convenience of online learning" (P3), similar to the students in another study of New Zealand Sign Language (Alexander et al., 2017). Three commented positively on lessons that broke the translation process down into discrete steps that they could then focus on and master. This emphasized procedural knowledge and supported scaffolding as suggested by the literature (Massey, 2005).

Overall, the lessons were described by some participants as a useful review of what they knew or a way to learn new terminology. One characterized it as "…it felt like a 'stretch' for my brain" "…a higher level of self-monitoring…" and feeling "…more engaged in the work" (P3). Another lacked opportunity to interact physically with peers and appreciated the chance to do so online (P17).

Finally, six of the eight checked off "Yes" when asked if the lessons had improved their ability to interpret while two were "unsure." Given their increase in the use of enrichments, as noted in the quantitative analysis, this observation seemed to be verified, and it also supports similar findings in the spoken language translation and interpreting literature (Moreno et al., 2011; Wang, 2015).

In conclusion, this study found tentative support for the use of online learning in sign language interpreter education. It encouraged the use of a model of the interpreting process to structure the lessons and assessment process, in this case McDermid's (2012) multi-dimensional model of meaning at the literal, enriched or implicature levels. It also identified impediments to online learning, including the need for activities that promote peer interaction and web-based resources that are easy to use. Further research is warranted that include larger sample sizes and additional types of texts to translate.

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Appendix A Source and Examples of Enrichments and Implicature

	English Source	Enrichment	Implicature
1	I took an art class years ago.	Prepositional Phrase – in a college/school/place.	
2	My goal was to become a painter.	Conjunctive device – I wanted to become a painter, so I took an art class. Prepositional Phrase – I painted…on a canvas.	
3	But before I did I checked into the requirements.	Substitute word "did" – Before I took the class – or Before the class started…. Prepositional Phrase – I checked …on the computer	**What did I have to do first?**
4	I found out that I would have to pay $500 for the course.	Antonym – The course was not free, I paid. Converse – The course cost $500 and I paid. Prepositional Phrase – paid to the school	**It was expensive.**
5	I also got a list of supplies I would need.	Superordinate "supplies" – brush, pen, paper, paint, clothing, canvas, etc. Prepositional Phrase – supplies…for class.	**I had to go to the store and buy the supplies.**
6	Now you have to understand that painting was a new skill for me.	Conjunction – It was a new skill, so I wanted to learn it. Ellipsis – Painting was a new skill for me…to learn.	**I never took an art class before.**
7	So I was a bit concerned about how well I would do.	Reference – substitute "do" – painting Prepositional Phrase – I painted… on a canvas. Verb entailment – I painted, then I looked at my work…it was awful	
8	In fact, I wasn't even sure I would go when the time came.	Prepositional Phrase – I would go …to class. Antonym – go or stay (home) or quit Verb of judgment — I was nervous.	**I paid for the course.**
9	When I got there, I thought I was going to be judged!	Agent – judged by teacher/students Verb entailment– I arrived and went in the class….	
10	But thankfully it wasn't so.	Substitute "so" – They did not judge me. Verb of judgment – The experience was positive	
11	The instructor, much to my happiness was very supportive.	Prepositional Phrase – The teacher looked …at canvas. Adverbial – As I continued to paint…	**Other students were supportive.**
12	I ended up realizing I was a lousy painter but I really enjoyed the class!	Antonym –good painter, no. I was awful/so-so/lousy. Adverbial — after the class finished…. Prepositional Phrase – I painted….on a canvas Verb entailment – I looked at the canvas	**I learned two things. I painted poorly compared to others**

Interview with Nicole Wei Lan, medical interpreter educator in Hong Kong and CATTI certified conference interpreter

Nicole Lan[1]

Hong Kong Baptist University, Hong Kong

Ester S.M. Leung

Hong Kong Baptist University, Hong Kong

Nicole Lan is a nationally certified (CATTI[2]) conference interpreter, interpreter trainer. Her PhD dissertation was on empathic communication in medical interpreting. Before embarking on her PhD study, she was a research assistant assisting with a field study on the roles of medical interpreters in Hong Kong.

Dr Ester S.M. Leung obtained her PhD from the University of Lancaster and her MA degree from the University of Durham, both in the United Kingdom (UK). She is now an Associate Professor with the Translation Program at Hong Kong Baptist University. She gained extensive experience in both legal and medical interpreting before returning to Hong Kong from the UK, and has published in both areas of research. She was awarded the "Outstanding mentor of Social Enterprise" (2013) by the Home Affairs Bureau, and the "Best Knowledge Transfer Award" (2014) for her work on the training of ethnic-communities' medical interpreters at Hong Kong Baptist University. She was subsequently nominated for the "International Visiting Leadership Program" (2016) of the US embassy in Hong Kong.

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[2] CATTI - China Aptitude Test for Translators and Interpreters

Interview with Nicole Wei Lan

Ester: Can you tell us something about your background? How did you become involved in interpreter education?

Nicole: Sure. I have been a freelance interpreter since 2008 and have a master's degree in translating and interpreting. I taught conference interpreting in Beijing for two years before I came to Hong Kong where I also taught interpreting at college level.

Ester: How did you become involved in medical interpreter education and how has that evolved over the years?

Nicole: I got involved in training medical interpreters when I worked as a research assistant at Hong Kong Baptist University on a project exploring the identities and roles of medical interpreters with ethnic minority linguistic background. It was from then that I noticed that there were people in the training courses who seemed to be much more 'natural' than the others when interpreting, and there were people who never got the mastery of interpreting somehow. So I decided to probe further about it and start my doctoral thesis on it.

Ester: What underpins your approach to interpreter education and how do you prepare your students for future practice?

Nicole: The number one principle is always authenticity. Use authentic materials in class, such as real-life recordings or their transcriptions; have the students interact with real professionals invited from the field, and also expose the students to not only cognitive challenges, but also ethical and emotional issues of the medical and interpreting professions, so that they are more prepared for the future.

Ester: In your study, how and why did you involve medical professionals in the training?

Nicole: We believe that it is a concerted effort by all participants in the medical interview to make it work. That is why involving medical professionals in the loop is important. To make sure we are on the same page about what works best for the patient. During my field observations of nearly 50 cases, I saw plenty of doctors and nurses mistaking the role of medical interpreters for paramedics or someone who could give advice to the patient. So co-training sessions could benefit both sides, especially when I wanted to raise the awareness on empathic communication with different cultures.

In class, we invited medical professionals to come over for role-play exercises with our interpreter trainees, along with practicing medical interpreters, followed by feedback giving and debriefing amongst all participants. Focus was placed not only on the accuracy of verbal rendition, but also on nonverbal communication and perceptions of empathy.

Ester: If there was anything you could change, what would it be and why?

Nicole: I would love to have longer sessions for the training if time allowed, so that all participants could have longer discussions on the complicated subject of empathy and nonverbal communication, as well as other relevant issues such as code of ethics/practices. Because the training courses that I have conducted so far were all non-language-specific training courses, given more time the trainees could have shared more on the expression and perception of empathy in their own cultures.

Ester: Can you tell me about the medical interpreters you trained, who do not speak Cantonese, but who interpret between the ethnic minority languages and English here in Hong Kong.

Nicole: The medical interpreters I trained covered twelve different languages, including Urdu, Punjabi, Hindi, Nepali, Korean and many more, which were considered ethnic minority languages and Languages of Limited Diffusion (LLD) in Hong Kong. Most of the trainees were female and their ages ranged from 22 to 70, the average age being 48. About 40% of trainees were college degree holders, although the degrees were rarely related to language or medicine or interpreting.

I appreciate the hard work and dedication of these trainees, because many of them were doing the training part-time, and medical interpreters only earn one half or one third of what a judiciary interpreter normally makes in Hong Kong. So I understand why some of them shifted to working in the legal field after completing their medical interpreter training. This is why my PhD supervisor and I have been strongly advocating for government policy to stipulate the use of professionally trained medical interpreters and also for better payment and professional standing and recognition for them. It will help improve the medical care for the ethnic minorities in Hong Kong at the same time empower them to become contributing members of society in the long run.

Ester: If you had one piece of advice for new medical interpreters, what would it be?

Nicole: Reflective empathy is beneficial to your work and a little empathic body language can go a long way.

Ester: What areas of interpreter education do you think are priority to research and why?

Nicole: More research should be done on curriculum changes and discussing the need and practicalities of including unconventional modules such as empathy in the syllabus. Since research has shown that physician empathy helps enhance communication effectiveness and produce better long-term healthcare outcomes, and interpreters, as active participants in the communication, should take empathy seriously. Researchers can also look into non-language-specific training courses for speakers of Languages of Limited Diffusion (LLD) because the number of the courses is ever-increasing internationally, thanks to globalization. Key themes such as adult learners, reflective learning, authenticity should also be studied as they are closely related to medical interpreting training courses these days.

Ester: How would you describe the ups and downs of these training courses that you have conducted so far?

Nicole: The best part of the training were the role-plays, the debriefing and feedback sharing sessions amongst the trainees, medical professionals and practicing interpreters. It was a fulfilling learning experience not just for the participants but for me as a trainer, as well. However, with constraints on resources, we were not able to conduct an ideal training course with pre-training screening and multiple post-training practicum sessions. There were also occasions where I found it hard when I had to explain to attendees why they had failed the examinations. Thanks to modern technology, however, all of the students' performance was video-recorded either on cameras or on tablets or smart phones, etc. We, the trainers and trainees could have analyzed everything together almost segment by segment. All these recordings were significant for the records of students' performance and reflections, and also formed the major part of the data for my thesis and possibly material for future research.

Ester: How did you involve the assessors and how did you select them. What was their role?

Nicole: We invited two groups of assessors who were experienced and practicing medical interpreters in their language. One group acted as role-play participants in the oral assessment and gave their scores on the spot. The other group assigned scores after watching the video recordings. We selected assessors based on their experience, and also based on recommendations from the interpreter referral agency (the Lady McLehose Centre) and their peers.

Ester: Can you give us more details of how the interpreter should show more empathy through body language and intonation/voice quality?

Nicole: In the analysis, several aspects of nonverbal cue were examined, including proxemics, kinetics, haptics, vocalics and chronemics. Taking proxemics as an example, close distance, direct body and facial orientation, and forward-leaning were observed amongst the higher scorers (i.e., interpreters who received a higher rating of empathic performance from the doctor, patient, and observers). Interpreters who scored higher in terms of empathic performance did not appear restricted by the pre-arranged seating arrangements.

These interpreters were also willing to make more significant proximal advances compared to the lower scorers. They did this, for example, by holding their notepads in the palm of their hands at all times, to gain the freedom of moving their torso without the constraint of having to take notes on a notepad that was lying on the table, so they could face their interlocutors front on. This was not only observed in their interactions with the doctor but also with the patient, whereas certain lower scorers were observed to proximally approach only the doctor, but not the patient. Lower scorers appeared stiffer in their torso and body movements in general. Only head turns and gazes were observed when they switched listening and speaking to the interlocutors, but no movements of the upper torso or the whole body. This is just one aspect amongst many discussed in the study. Due to the intricacies of the communication process, the results of this study are mainly descriptive and not meant to be used prescriptively. The goal is to raise awareness among medical interpreting practitioners and educators. With an understanding of the benefits of being an empathic communicator, medical interpreters can be empowered, and so can their patients.

Ester: Thank you for sharing your research findings with us Nicole. We wish you all the best for the future.

The Indigenous Interpreter®: An interview

Cynthia Roat[1]

Practical Solutions for Language Access in Healthcare, Shoreline, WA

Katharine Allen

Co-President at InterpretAmerica, Bishop, CA

Marjory Bancroft

Cross-Cultural Communications, Columbia, Maryland

Angélica Isidro

Navidad Medical Center, Salinas, CA

Cynthia (Cindy) E. Roat, MPH, is a national consultant on language access in health care. Cindy has authored a wide array of key resources in the field, and has consulted for medical centers and healthcare systems and has mentored interpreters, trainers and Language Access Coordinators around the U.S.

Katharine Allen is an interpreter and trainer of community interpreters based in Bishop, California. A graduate of the Middlebury Institute of International Studies at Monterey, she is the co-founder of InterpretAmerica, an advocacay organization for the interpreting profession, as well as the lead training consultant for The Indigenous Interpreter® program.

Marjory Bancroft, MA, is the founder and Director of Cross-Cultural Communications (CCC), the only national training agency for community and medical interpreting. She is the co-author of numerous textbooks, has sat on international interpreting committees and was the world project leader for an ISO international interpreting standard.

Angélica Isidro, Co-Founder of Indigenous Interpreting+®, is a Mixteco staff interpreter at Natividad Medical Center in Salinas, California. She was featured in the Los Angeles Times for her community leadership in Greenfield, California, and was just recently featured in Middlebury Institute of International Studies' "Communique."

Victor Sosa is the Co-founder of Indigenous Interpreting+®, a national indigenous language interpreting services, serving as director from 2014-2015. He also developed a progressive language access program at Natividad Hospital in Salinas, California and was the driving force behind developing The Indigenous Interpreter training program. In 2013,

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The Indigenous Interpreter® interview

Victor received the National Council on Interpreting in Health Care's prestigious Language Access Champion award. Victor is a seasoned Licensed Trainer, Certified Court Interpreter and Certified Medical Interpreter. Due to unforeseen circumstances, Victor was unavailable for interview for this article.

The Central Valley of California is home to farms and orchards that feed the world. The people who work those farms, who sow and harvest that rich bounty, are mostly from somewhere else. They come from Mexico and Central America, and they bring with them their families, their culture, and their languages.

What happens when these people need health care? For those who speak Spanish, local hospitals and clinics can easily provide interpreters. But what of those whose language is not Spanish but Mixteco, or Zapoteco, Mam or K'iche', Q'eqchi' or Kaqchikel? Where do hospitals find interpreters in these languages?

They don't find them. They make them.

Training interpreters in indigenous languages is a challenge. These languages often have little linguistic equivalence with English – even more the case with English medical terminology – and when world views differ markedly, there is often a lack of conceptual equivalence as well. The task of interpreting accurately between these languages and English is more difficult than we can imagine. To complicate a trainer's work even more, the techniques we often use to train interpreters in the U.S., which are based on classroom teaching and rooted in the written word, are often ineffectual with people raised in indigenous cultures. For these very reasons, we healthcare interpreter trainers stumbled in our efforts in the 1990s to train interpreters working in Hmong and in Navajo.

The arrival in the early 2000s to the coastal area around Salinas, California of thousands of indigenous peoples from southern Mexico and Central America revived this challenge again. Struggling to find interpreters to serve indigenous Mexican and Guatemalan patients, Natividad Medical Center set out to train interpreters, only to find that standard interpreter training courses did not work very well. In 2008, a dedicated group of interpreters, trainers, and administrators committed themselves to finding a better way; and this year, over a decade later, they are ready to share that better way with the world. In January, interpreter trainers Katharine Allen, Victor Sosa and Angélica Isidro, with support from Marjory Bancroft of Cross Cultural Communications, published a manual and workbook aimed at preparing interpreters of indigenous languages. This interview tells the story of their remarkable journey together to build bridges between languages and worlds.

Cindy: What are The Indigenous Interpreter® Training Manual and the Indigenous Interpreter® Workbook of Role Plays and Activities?

Katharine: The Indigenous Interpreter® Training Manual and Workbook of Role Plays and Activities are the written content of a 63-hour, 21-module training program for interpreters of indigenous languages working in community settings. Each module represents approximately three hours of training time and has three learning objectives on a single subject. The workbook includes the activities that go along with each module. If a participant completes all 63 hours, passes the exit test and a proficiency test in English, they are conferred "The Indigenous Interpreter National Credential: Level 1 Qualification."[2]

Marjory: These ground-breaking publications provide interpreters of indigenous languages a thorough yet accessible grounding to prepare them to perform professional interpreting. The books especially target interpreters of indigenous languages in Mexico, and Latin America more broadly. However, the curriculum can provide invaluable guidance not only to interpreters of indigenous languages around the world but also to refugee interpreters who share many of the same concerns.

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[2] This credential represents that a participant has completed all the requirements. It is not a certification of any kind.

Cindy: Why is there a need for these resources?

Katharine: The need can be seen from several angles. First and foremost, the United States, and the world in general, is seeing an increasing diaspora of indigenous peoples, who are leaving their traditional homes and migrating both inside their native countries and beyond to wealthier Western nations. Typically, these communities do not speak the dominant language of the country to which they emigrate, yet they need to access public services like any other immigrant community. Because they come from small, often isolated language groups, professional interpreters who speak their languages and the language of service are few and far between.

Second, indigenous immigrants often face more complicated barriers to entering the interpreting profession than interpreters who speak more widespread languages such as Spanish, French, Mandarin or Vietnamese. If they come from Mexico, for example, English may be their second language and Spanish, if they learn it at all, their third. They are often stigmatized inside their own communities, are poorer and have less experience with Western medical, social and educational practices.

Third, their indigenous languages have fewer direct equivalents for common medical and community concepts and practices. A doctor may say, "We have found a cancerous mass in your liver." In some languages, there may not be a word for mass, cancer or liver. Indigenous interpreters need concrete strategies and techniques for how to find accurate equivalents between concepts that don't exist between cultures. This is just as true when finding ways to accurately translate cultural concepts from their native cultures in such a way that a Western provider can understand them.

Finally, in some corners of our profession, we have seen an unfortunate trend towards exclusion of indigenous language interpreters who cannot easily meet the educational and training standards our field has created for entry into the profession.

Marjory: I think these materials are necessary, because the challenges in training indigenous interpreters are multiple: many of them here in the U.S. are limited English proficient and so may have to interpret into Spanish, requiring a relay team. A single classroom of indigenous interpreters may include people with a range of educational levels and an uneven command of English. This creates a huge challenge for trainers. Yet the languages these interpreters speak are urgently needed in order to serve groups in this country. The same problem exists for many of the indigenous communities of the Pacific Islands, including Hawaii, Guam and American Samoa.

Also, many of the interpreters are not acculturated to U.S. professional work culture, nor are they familiar with the cultures of the health care and legal institutions where they must interpret. They need guidance on professional conduct and general protocols in these arenas: guidance not present in most interpreting curricula. The cultural barriers between service providers and indigenous patients, defendants and clients of community services is so huge that interpreters need very solid skills in intercultural mediation (including when/where/how to perform it), exceeding what entry-level programs typically provide. The bottom line is that other textbooks, training manuals and curricula have not met most of these needs.

Cindy: Does this program focus on a particular venue for interpreting? For example, medical, social service, legal, educational, business, conference, etc?

Katharine: The program targets primarily healthcare interpreting with additional modules included for broader community and medico-legal settings. For example, the manual includes chapters on community services, legal interpreting in community settings and mental health interpreting. Many, if not all, of the strategies and techniques are just as valid for other community interpreting settings, since, after all, healthcare interpreting is a specialization of community interpreting.

Cindy: How do this training and its accompanying manuals differ from other interpreter training programs and curricula?

Katharine: There are several ways in which they differ: Firstly, the manual and workbook are written in plain English. Both were reviewed several times by a team of indigenous interpreters who provided invaluable feedback about what concepts needed to be expressed more directly. To be clear, the concepts taught are not simplified so much as written in a register that an immigrant whose second or even third language is English can understand.

Secondly, the pedagogy is practiced-based to a degree unusual even for 40-hour short-course trainings. Every module starts by doing something concrete before any lecture takes place. It is the authors' firm belief, based on piloting this program and their combined expertise, that engaging participants in the learning task being taught before introducing a more abstract explanation creates a personal, direct connection to the skill. Interpreting skills can be very abstract when described (memory and listening skills, cultural awareness, etc.). Each 3-hour teaching block incorporates an activity at the beginning, then a brief lecture with a discussion, then trying the skill again. The goal is to provide the participant with a bit of success or growth for a particular skill, with a clear, step by step process to continue practicing those skills.

The curriculum also explicitly incorporates the process of "reflective practice." There are exercises that teach participants how to practice most effectively in small groups, how to record and evaluate their own interpreting, and how to provide targeted feedback to group members. There are also multiple processes taught on how to evaluate their own skill sets, how to make decisions about whether or not to accept an assignment, and how to negotiate around their skill sets as interpreters. For example, if the interpreter is asked to interpret for a court hearing regarding a drug case, the interpreter can say, "I can accept if the judge allows me to interpret consecutively and not simultaneously. In addition, instead of sight translating documents, they will need to be explained to the defendant and I can interpret the explanation as many of the legal concepts in court documents have no equivalent in my indigenous language."

All of these strategies work to create awareness in interpreters of what their skill set is at any given moment and how they can safely accept assignments that might otherwise be beyond their range. This is essential because there is tremendous pressure on indigenous interpreters to accept assignments for which they are not fully qualified, as no other alternatives exist. They need ways to share their linguistic abilities and stay both accurate and ethical even with a limited skill set.

The curriculum also addresses topics that have not been addressed in other curricula. For example, there are modules on consecutive relay interpreting, simultaneous interpreting for indigenous languages, glossary-building techniques for developing translations for terminology that has no direct equivalent. (This module teaches interpreters to first become "mini-experts" on a topic before looking up words. It also teaches a bridging technique for finding accurate equivalents.)

Other topics include community services (healthcare, social services and education), legal interpreting for indigenous interpreters, which includes the technique described above for evaluating whether to accept an assignment and how to negotiate terms to adapt the requirements to safely fit their existing skill set. We also cover mental health interpreting. The simultaneous interpreting module addresses the unique barriers to mastering that mode between an indigenous language and English. This module and the one on consecutive relay interpreting are, to my knowledge, have not been written about elsewhere in a formal publication.

Marjory: To me, these materials differ from others in the field in the following areas: their length, depth and level of detail. Their specialization for a specific target audience. The degree to which these materials meet the true and deep-seated needs of so many indigenous interpreters who urgently need training just like this. Don't forget that they're free and of benefit to huge audiences around the world! Unique features include the fact that they were prepared under the auspices of an indigenous interpreting run through a hospital foundation, and they were piloted in depth before publication.

The degree to which they can help refugee as well as indigenous interpreters learn how to interpret professionally is enhanced by the lower register of English, the clear structure and accessibility of each chapter and its corresponding training module, and the way even the Mexican graphic design reflects and honors indigenous culture. Feedback from working indigenous interpreters was incorporated with laborious care at every

level of curriculum development despite many obstacles. The sheer amount of money, care, time (years!), attention and loving devotion invested in this project can be seen in the results. The degree to which the curriculum appears to truly help professionalize indigenous interpreters and how it helps them grasp and internalize key concepts that are by no means easy ones to digest.

The way the program and its materials are structured goes from most concrete to most abstract and is presented through activities, teaching, role plays and exercises at every stage which were created to address the specific needs of the audience as opposed to a rehash or condescending "simplification" of other entry-level curricula. And while this may not be important, pedagogically I would argue that it is: the color, beauty and vivacity of the graphic design that makes these gorgeous books more accessible to lower-literacy audiences than plain black text.

Angélica: Es diferente porque, en la clase de inglés-español, no se ensenan culturas, costumbres, creencias, no se habla de muchas cosas, y en este programa si se habla, se escucha, se menciona. Y más que nada también, nosotros, incluyéndome a mí, no estamos preparados decirnos profesionales porque venimos de campo, venimos de ama de casa, venimos de diferentes lugares, y no estamos preparados. Y en este programa se le enseña a la gente como vestirse, como pararse, en qué momento interrumpir, aclarar una palabra que uno no entiende. Hay muchos protocolos que hay que seguir, hay mucha ética que hay que aprender. Entonces, yo creo que hay una gran diferencia porque no solamente se aprende del profesionalismo, sino de diferentes costumbres, como acabo de decir.

(translation): It's different because, in the English-Spanish class, they don't talk about cultures or customs or beliefs. There are a lot of things that weren't discussed. And in this program, these things are talked about. In addition, we, including myself, we weren't educated like professionals, because we come from the fields or from being a housewife or from different places, and we weren't educated that way. So in this program, they teach people how to dress, where to stand, when to interrupt, say, to clarify a word we don't understand. There are lots of protocols to follow, lots of ethics to learn. So I think there's a big difference because one doesn't just learn about professionalism, but about different customs.

Cindy: How were this program and curriculum developed, and what was your role in the process?

Katharine: The program was spearheaded and funded by Natividad Foundation (NF), through its Indigenous Interpreting+® service.[3] NF is a non-profit organization that supports the Natividad Medical Center (NMC), the public hospital located in Salinas, California. NMC serves a patient population that has a high percentage of indigenous immigrants from southern Mexico and Guatemala who do not speak Spanish and for whom no interpreters were available. Over time, NF took steps to recruit and train interpreters from the local community who spoke these indigenous languages. It became clear that traditional healthcare interpreting curricula did not fully meet the needs of these new interpreters. Thus, the Foundation decided to raise funds to create a program that did meet their needs.

This really started when Linda Ford, then Chief Executive Officer of Natividad Foundation, sought to have NMC's language access services evaluated in 2008. I was hired to do that initial evaluation. At the time, NMC had not a single dedicated staff interpreter, despite the fact that more than 50% of its patient population spoke Spanish as their first language. As a result of that initial evaluation, NMC hired its first interpreter services coordinator. The evaluation also more formally identified the interpreting needs of indigenous patients.

A few years later, Victor Sosa, co-creator and co-author of The Indigenous Interpreter®, replaced the first interpreter services coordinator. One of his first successes was to overhaul the protocol for identifying patients' language preferences at first points of contact in the hospital. As a result, it became clear that an indigenous language – I believe it was Zapoteco – was the second most common language spoken by limited English proficient (LEP) patients after Spanish.

Victor immediately began to reach out to communities of indigenous farmworkers in the region in an effort to build real connections between them and the hospital. In the process, he met Angélica Isidro, who started helping

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[3] A service providing in-person and remote interpreting services for court, healthcare and community services in Mixteco, Triqui, Zapoteco, Chatino, Kanjobal, Amuzgo, Náhuatl, Tarasco, Purépecha, Tlapaneco, Yucateco Maya, Mam, K'iché (Quiché), Mixe and more.

out by interpreting over the phone for indigenous patients, often while she was working in the fields. She would wrap her phone in her head scarf and keep on working while she interpreted. Angélica became the first indigenous interpreter to work for NMC. Together, she and Victor built a strong relationship with the indigenous communities in the region. Angélica helped to recruit people for training courses, was a key participant in many of them, and later became a founding and foundational member of Indigenous Interpreting+® and The Indigenous Interpreter®.

Victor didn't just want a pool of interpreters; he wanted a pool of trained interpreters. He started by trying to adapt existing healthcare interpreter training to better serve speakers of indigenous languages. In a significant and groundbreaking effort, he collaborated with Barry Fatland at the Cross Cultural Health Care Program in Seattle, translating the 40-hour interpreter training program Bridging the Gap into Spanish and offering it several times at Natividad.

One other key step that NF took was to establish and fund a 6-month paid internship at NMC, awarded to the most promising participants graduating from the 40-hour training. A growing cohort of trainees benefited from this internship, learning in real time how to apply the skills learned in the training courses. Later, as we were creating The Indigenous Interpreter® course and then writing the books, the continuous feedback, stories and experiences of these interns greatly enriched our development process. Their daily experiences brought authenticity to the program and helped identify areas that needed more development.

So, the 40-hour training was the beginning, but it quickly became clear that Bridging the Gap was not effective for the indigenous cohort. A more specialized and targeted training was needed. At this point, Linda Ford brought me back into the process to help create such a training, based on my background as a healthcare interpreter trainer and curriculum developer. Eventually, we also recruited Marjory Bancroft of Cross-Cultural Communications to provide intellectual content and editing and, ultimately, to publish the books. This is the history of how we developed the Indigenous Interpreter®. The actual development process consisted of a back-and-forth process between all the team members.

The first training that Victor and I developed and piloted was a 5-hour workshop on the professional workplace to help the indigenous interpreters who were working freelance for the hospital to acclimatize to the expectations and protocols of a hospital setting. Next, I conducted a series of hospital-wide interviews to identify what interpreters, patients and providers needed, expected, and felt when it came to healthcare needs and interactions. We began to identify gaps in training and barriers to learning. Eventually, Natividad Foundation secured funding from the S.H. Cowell Foundation to produce the first three modules of the training, which were created and piloted in the spring of 2015.

Natividad Foundation also raised support for two separate trips to Mexico, undertaken by NMC doctors and administrators, Victor and myself. The first trip took the team to Oaxaca to visit the region that was home to many of the local immigrants. We made connections with local healthcare providers and visited indigenous communities to better understand the health issues and health beliefs indigenous patients had.

Our second trip took us first to Oaxaca and then to Mexico City to make contact with INALI (The National Institute for Indigenous Languages). INALI had created a certification process for Mexican indigenous court interpreters and was working on a similar process for healthcare interpreting. Many of the indigenous people who were migrating from southern Mexico to Mexico City did not speak Spanish, creating similar needs to those we were seeing in the U.S.

In addition to meeting with representatives of INALI, who shared many of their processes, we also met with various interpreter associations and groups, representing interpreters working mostly in legal settings. Georganne Weller, a noted conference interpreter active in U.S. settings, is based in Mexico City and was one of the founding staff members of INALI. She acted as our guide and contact person. She introduced us to the groups and people we most needed to see. Georganne also shared the curriculum she had helped to develop and used to train interpreters for the legal certification process in Mexico.

Later, Judith Pacheco (the Indigenous Interpreting+® coordinator) and I traveled to Mexico for a third time, this time to Chiapas. We were invited by INALI to observe their healthcare interpreting certification process, done in tandem with the Ministry of Health certification of community health workers. They had a distinct process for speakers of indigenous languages, which included testing their interpreting skills and ethical conduct through scenario-based role plays. The certification process lasted a full week and we were able to see innovative and effective approaches for determining proficiency in indigenous languages, as well as modal and protocol interpreting skills.

With all this information in hand, and after a second week-long round of interviews with interpreters and hospital staff back at NMC, we sat down to the business of creating the training program. We piloted the modules, which included creating learning objectives, lesson plans, PowerPoint presentations, and activities. Then we launched into writing the training manual and accompanying workbook. This process took two years.

We piloted seven modules at a time, approximately two a day over four days in three separate training courses. Victor, Angélica and the Indigenous Interpreting+® staff recruited trainees and offered them food, lodging and a stipend so that they could afford to leave their other work for a week and attend the training. We got feedback after each pilot and revised our materials.

As I was writing down the first draft of the manual, a team of four to six indigenous interpreters read each draft and provided detailed feedback. These interpreters had taken some or all of the pilots themselves, and some were part of the six-month paid hospital internship. I received their feedback during phone interviews. Victor and Angélica also reviewed each draft and provided feedback as we went along.

In January 2017, after completing the first draft of the manual and workbook based on the initial pilot, we launched the full training program with an inaugural class of 27 students. At the end of the two-week program, all those who passed the assessment exam received their II+ credential.

Over the next year, NF raised funds for publication and negotiated a publishing contract with Cross-Cultural Communications. In the fall of 2017, Marjory Bancroft and I edited and revised the manual and the books went through a professional design process.

In spring of 2018, the manual and workbook were completed. At this same time, Linda Ford left NF, triggering a review process by the Natividad Foundation board of the whole program, including the planned decision to publish the books under the creative commons license so that it could be made available to as wide a public as possible. In the fall of 2018, the plan was finally approved, and NF posted them on their website for free download. They were "officially" made available to the public in early January 2019.

Cindy: Some of the developers of this program are themselves interpreters of indigenous languages, while others are not. How do you view the participation of non-indigenous people in the development of this program?

Katharine: Everyone's participation was key. Many other programs have created training courses for indigenous interpreters and are indeed, still running them, but have not been able to find the resources to turn those programs into something formal like Bridging the Gap or The Community Interpreter.

The key difference in this program was precisely the unorthodox combination of personal and professional backgrounds of the people who made up our team. Linda Ford, a powerful high-level foundation CEO first engaged me to help her identify the language access needs of NMC. Based on that information and what they were seeing at the hospital, Linda set her sights on the hospital's most vulnerable populations and did extensive fundraising, to the tune of several hundred thousand dollars, among the valley's wealthy agricultural owners.

Victor Sosa, a talented interpreter and interpreting services coordinator, has been successful in identifying patient needs, innovating ways to change hospital culture (not easy!) and creating protocols to provide more access to indigenous patients. Victor has a singular talent for community building in his outreach to indigenous communities – as well as being an excellent interpreter trainer. Then Angélica Isidro provided the critical link to more than just her own language community. She rose to the challenge of learning how to interpret professionally and ultimately came into the program as the first paid indigenous interpreter. She continues to work closely with Victor today, as they continue to offer The Indigenous Interpreter® to new trainees.

The indigenous interpreters grew and evolved the project's lifespan and became ever more important players in the creation of the program. It is hard to fully capture their courage and curiosity, their willingness to learn new skills, to be exposed to new ideas, to stretch and to take risks to become interpreters. An additional hidden but key participant was Judith Pacheco, who, at the time was in charge of overseeing Indigenous Interpreting+®. She helped organize training, ran the phone interpretation service, and generally made sure things ran smoothly.

Myself, I am a leader in healthcare interpreting with experience in language access consulting with hospitals, as well as being a trainer and author of interpreting curricula and textbooks.. I brought in the writing experience needed to get the training down on paper, as along with many connections to the broader field. And finally, there is Marjory Bancroft – in no way a minor player. Cross-Cultural Communications is the only combined training agency/publisher in community interpreting in the United States. Marjory has more experience crafting, editing,

publishing and marketing interpreting related training books and resources than anyone else. Her involvement ensured a high level of professionalism when it came to editing and publishing a professional work.

I feel like this was a multi-cultural, multi-perspective, multi-resource collaboration that needed the precise skill set of each of its collaborators to be successful. It was and still is awkward and humbling to be the white, middle-class American woman who actually put everything we learned down on paper, but that was the skill set I had to bring to the table in our team.

Cindy: In your mind, what was the greatest challenge in developing this program and the curriculum to teach it?

Katharine: One of the biggest challenges was the scope of the project; it had arms and legs of its own that kept sprouting and reaching out in all directions. The need for so many kinds of resources was great. We had many side projects and went down many alleys that, in the end, were not the main fruit. It was a HUGE learning experience. It was a challenge to convince the Foundation and Hospital boards that ongoing support was worthwhile and important. It was a challenge to get buy-in from the local community. Personally, it was a challenge to feel the responsibility of creating a training course that was relevant, effective and empowering: one that honored the interpreters' experiences and viewpoints and also helped them cross the cultural and professional divide to becoming trained interpreters in the United States. Finding and keeping our team moving forward with positive synergy and goals was also a challenge. And all those challenges had to be overcome to make the project work.

Angélica: Yo creo el dinero. Porque la idea todos la teníamos, pero si por algo no se podía hacer el libro, vamos a suponer, iba a ser por el dinero. Pero la Fundación, gracias a Dios, nos ha apoyado en todo momento, entonces se iba a ser más difícil pero por lo visto, fue fácil por hacerlo por el fondo que ellos nos consigue y pues se le pagó a las personas que trabajaron ese libro.

(translation): The money, I think. Because, the ideas, we had that, but, well, let's just say that if we hadn't been able to do it, it would have been because of the money. But the Foundation, thank God, has always helped us. So it seemed like it was going to be really hard, but from what I saw, it was easy because of the funds they got us in order to pay the people who worked on the book.

Cindy: In what ways (if any) do you think that indigenous and immigrant languages are treated differently in the interpreting world?

Marjory: In a word: marginalization. And some degree of condescension exists too. There are hierarchies in the field. Some go by specialization, some by signed vs. spoken, some by levels of English, some by levels of interpreter education. I've witnessed this. It's real.

Katharine: It is an unfortunate sign of the very success we've had in professionalizing healthcare interpreting that we are now seeing a sometimes dismissive and contemptuous response to indigenous interpreters. Interpreters who have professionalized in the more widely needed language pairs (Spanish-English, Mandarin-English, etc.) now have the relative luxury of access to a larger, more formally educated pool of bilingual individuals who can take 40-hour training courses, pass proficiency tests and certification exams and who often come from Westernized countries. They are proud of the level of professionalization they have achieved, as well they should be.

Whereas indigenous community members often come from the most isolated and poorer regions of their countries. They already face significant discrimination in their home countries, and when they come here to the U.S., they often face more of the same. They do not have access to the same kind of education, cannot prove their proficiency in their non-English language as easily, and often have far fewer resources to invest in their professional development. Yet their skill set is in urgent demand, so they are hired and thrust into interpreting in settings for which they are not prepared. I have seen and heard reported many instances of contempt on the part of more-established interpreters complaining about their low levels of interpreting skill and professionalization and refusing to provide or even see the need for supporting these new members of our profession. This is unfortunate and very short-sighted.

On the other hand, many are working to invite indigenous interpreters into the ranks of professional interpreters. I have taken part in several training events that seek to bridge some of those differences. Most recently I was in Oregon where certified Spanish court interpreters undertook training on consecutive relay interpreting with local indigenous language interpreters. We took the time to orient the entire group as to the unique challenges indigenous interpreters face to professionalizing and to creating mentoring and support pathways between the two groups. It surprised me how new this perspective was to many of the Spanish interpreters, given that they themselves have faced many challenges to become professional interpreters respected in their workplaces. But it was also tremendously gratifying to see the shift in attitude.

Cindy: How do you see this curriculum being most appropriately used by interpreter educators in the U.S. and around the world?

Marjory: With care. That said, competent, veteran trainers could take the manual as is and run with it, especially if they happen to be licensed trainers of The Community Interpreter International, since the manual and workbook parallel the way we write textbooks/training manuals and accompanying workbooks. However, what's missing for trainers is the lesson plan overviews, the trainer's guide (which exists in a very rough draft), the PowerPoints, and the handouts.

Katharine: From when we first embarked on this project, we dreamt of being able to create something permanent that could be given out to the world for all to see and use. In the course of our work we have seen so many settings where languages of lesser diffusion and isolated communities (indigenous or not) suffer from a lack of resources to address their particular challenges. Those settings range from The Hague, where staff often have to recruit bilingual community members from indigenous communities and teach them from scratch how to interpret for international criminal cases, to places like Haiti, where the language barrier in health care is due to non-Haitian-speaking "immigrant" doctors who rotate in and out of the country, to the hospital, court and social service settings we find in the United States.

We wanted to research, create and pilot a program that used a pedagogy that everyone could take and adapt to their own particular needs, but which would sufficiently address the commonality of issues different indigenous communities face to be of universal use.

These materials necessarily reference the experiences, culture and geographies of indigenous immigrants from southern Mexico and Guatemala interfacing with a public hospital in central California. Nevertheless, the structure, strategy and model that the learning objectives and activities provide should be adaptable to other cultures and geographies.

It is important to remember that the two books that have been published are a part of a broader curriculum. The manual outlines the content taught in each module and the workbook provides most of the activities taught. The rest of the curriculum, the lessons plans, PowerPoint presentations, trainers' notes, final assessment and additional activities belong to the Indigenous Interpreting+® training program for which currently, Victor Sosa and I are the only two licensed trainers.

Our ultimate hope is to keep giving the training until we identify potential trainers in the indigenous communities whom we can prepare to teach the course. In the end, I hope to be made obsolete as a "lead" trainer and hand the baton off to indigenous trainers who will deepen and expand what we have started.

Cindy: Is there anything else you'd like to tell us about this amazing project?

Marjory: Just that it astounds me: the sheer complexity and depth and breadth of it. It was a huge privilege to be part of it at all. It was the product of an incredible number of devoted people, yet it's also a massive tour de force, whatever its flaws, and truly a major contribution to the field.

Katharine: I'm sure I've said too much already! I am still integrating everything that I learned from this project. It has been one of those serendipitous and unexpected blessings of my life to play a role in bringing it to fruition. I am ever humbled by the passion the often very young indigenous interpreters show for helping their community and by the critical role they play in providing access to health and human services. I am ever humbled by the tenacity they bring to learning new skills in unfamiliar and uncomfortable environments, with economic sacrifice but also with joy, laughter and commitment. I never knew I would end up having this strange niche skill as an interpreter trainer and curriculum developer. Getting to lend that skill to a project that will hopefully help spark many others to do something similar in their own communities around the world makes it all worthwhile.

Download *The Indigenous Interpreter® Training Manual* and *The Indigenous Interpreter® A Workbook of Role Plays and Activities* free of charge at http://interpretnmf.com/the-indigenous-interpreter-workbook-and-training-manual-now-publicly-available/.

Book Review: Here or There

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Jemina Napier, Robert Skinner & Sabine Braun (Eds.). (2018). *Here or There: Research on Interpreting Via Video Link*. Washington, DC: Gallaudet University Press, 338 pp. ISBN 978-1-944838-22-5

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In our technology driven world, there are times when the innovation and possibilities of technology outstrip the abilities of users to maximise its potentials. Such is frequently the case in the world of interpreting spoken and signed languages via video link technologies. Into that gap between possibilities and practice comes *Here or There* edited by Jemina Napier, Robert Skinner, and Sabine Braun. The book provides an overview of what remote interpreting via video technologies entails, provides various perspectives of those involved in the interpreting process using video technology, and exemplifies the process through several empirical studies using video link interpreting. This volume will be useful to interpreting practitioners in a variety of video link interpreting settings for gaining knowledge of the field and developing best practices. Interpreter educators may also use the contents to guide their students to becoming successful video-based interpreters. Companies and agencies providing video link interpreting may use the book as a basis for setting up or improving their services. Additionally, governments and other stakeholders may read the clearly evidenced information in order to understand the complicated processes involved in being an interlocutor using an interpreter via video link.

In seeking to describe the current situation in interpreting via video link, the editors have incorporated a multitude of connections between interlocutors, governmental policies, interpreters, technology, and so forth. In doing so, they present a picture of the situations involved in video link interpreting in spoken and signed languages, and provide recommendations for best practices. The editors use the term "video link" to refer to all types of interpreting that occur over the internet using video technology. Rather than providing an overview of each chapter or section, this review seeks to point out the salient and repeated themes emerging from the book as a whole.

An overarching theme throughout the book is the need to discover and apply best practices to the use of video link technology. Chapters from Braun, Davitti, and Dicerto; Conway and Ryan; Koller and Pochhacker; Licoppe, Verdier, and Veyrier, emphasize how technical issues with internet connections and equipment can lead to inequities in interpreted situations. Examples include when the internet signal is not strong enough to fully allow an interpreter to communicate visually with a deaf caller, when sight lines are set up so that asylum seekers cannot know who is speaking to them about their case, or when a suspect must look at an awkwardly mounted screen instead of at the officer questioning them. Fowler suggests that situations where the visuals between interlocutors are insufficient should be limited to low impact situations because the lack of visual access impacts the effectiveness of communication. Conway and Ryan describe the complications inherent in setting up the technology for video interpreting services for deaf patients. It would seem apparent that high quality equipment and a strong internet signal are a must in this situation, but the researchers were not prepared for the intense level of IT support required to set up the service and maintain its use when issues arose. Other issues that were mentioned in this study were the small size of the video screen, the length of time required to set up the device, and lack of audio quality. Braun et al. describes the difficulties inherent in linking technologies with a variety of ages, software, hardware, and features across countries in the E.U. These issues are even more extensive as the interpreters who will use the technology the most do not have a voice in procurement of the devices and services. When technologies are not chosen, and implemented well, there can be negative impacts on the interlocutors and interpreters communicating via video link.

In all aspects of the book, it is evident that interpreters are active participants in the conversations and interactions they interpret. In addition to managing technology, interpreters involved in video link interpreting must handle both turn taking and telling interlocutors who is speaking via source attribution. Balogh and Salaets offer an account of what occurs when interlocutors are not sure who is speaking or who holds a turn in an inter-country collaboration for a legal case. In this situation an interlocutor had to ask who was asking them a question, and there were also issues with turn-taking that indicated a lack of training in how to handle these issues. Koller and Pochhacker describe how interpreters' use of the first person can be more confusing over video link than in face to face interactions, and Braun et al. discuss how problems can occur when interlocutors choose to speak at the same time. In calls between deaf callers and political figures Napier, Skinner, and Turner provide data on how the interpreters were actively involved as they managed turn-taking between the callers. Interpreters must also juggle modes of interpreting while choosing consecutive or simultaneous interpreting as shown in Koller and Pochhacker. While interpreters must handle technology issues and navigate interactions between interlocutors while interpreting, they are also frequently called upon to perform tasks extraneous to an interpreting situation. In Koller and Pochhacker's study, interpreters at an interpreting company had to perform administrative duties in the

office in addition to prepping to interpret in a variety of settings, each requiring specialized knowledge of a field. The interpreters in that study frequently interacted and worked as a team, however interpreters introduced in Tyer had to manage feelings of isolation when they performed their work alone in their homes or from cubicles in an interpreting center.

Multiple chapters in this volume mention the vital role of the government in both regulating and enforcing standards of practice for video link interpreting. Governments are responsible for ensuring that those who do not speak the dominant language are adequately represented in their spheres of need, as discussed in Fowler. This is especially true in cases where these minority language speakers are part of a vulnerable population as discussed in Brunson; Fowler; Balogh and Salaets; and others. Vulnerable populations mentioned in this volume include asylum seekers (Licoppe et al.) deaf callers and patients (Brunson; Napier et al.; Tyer; Conway & Ryan; Warnicke), and legal defendants (Braun et al.; Balogh & Salaets; Licoppe et al.). Brunson and Warnicke each discuss how two different governments influence what occurs during interpreted phone calls between deaf and hearing callers. While governments frequently procure equipment for bureaucratic related video interpreting, the interpreters responsible for knowing and using this equipment are rarely included in the procurement decisions as in Braun et al. The need for equity for those interlocutors relying on video link interpreting in crucial situations is emphasized by Conway and Ryan in a discussion of the miscommunications that occur with people who are deaf when seeking health care, and in Licoppe et al. when discussing asylum seekers.

For all these issues concerning video links, technology, interactional strategies, active involvement of interpreters, and interpreting for vulnerable populations, a common recommendation is for proper training in best practices for interpreter training students and video link users as shown in Balogh and Salaets; Fowler; and Koller and Pochhaker. Fowler mentions the need for training, not only for interpreters and suspects, but also for those involved in the apprehension, questioning, and judgement of suspects in a legal system. The author then lays out a detailed best-practice protocol for courtroom use in England and Wales. While the protocol is listed as specific to those countries, the information can be generalized to many situations. Braun et al. point out that no one system or technology, training, or use is correct for all situations, however, all can learn from the others in order for video link interpretations to be successful.

By putting all of these aspects of knowledge, data, suggested best practices, and training together, we can expect the outcomes for those who must communicate through interpreters on video link to become more positive and productive. As Balogh and Salaets say "If basic "ingredients" are missing, like excellent technology, a professional interpreter and legal practitioners that are aware of working (1) with an interpreter and (2) in a VCI setting, we cannot expect a successful interaction" (p. 293). More evidence of best practices can be found in previous research on video link-based interpreting. Napier, McKee, and Goswell (2010) lay out a list of recommendations for signed language interpreters, that may be adapted to other language modalities. These recommendations include adjusting to potential time lags in the video transmissions, adapting signing styles, and dealing with limited knowledge about language use. Interpreters may also have to deal with limited details of both the upcoming interaction, and lack of knowledge of who is speaking offscreen. Many of the issues and recommendations pointed out in the 2010 volume are still issues in *Here or There*, showing that we must pay attention to the information gained in this research if we are to improve the situation for the future. An aspect of best practice mentioned above, is that training is needed for interpreters to be able to handle the intricacies of video link interpreting. Hoza (2016) discusses how interpreters can be 'in the zone' as they interpret to their best ability. Training and mentoring interpreters to have tactics and strategies for culturally appropriate conversation management, as well as ensuring they have the proper attitudes and allyship orientation for vulnerable populations is crucial to successful communication (Dickinson, 2016; Hoza, 2016). Ehrlich and Napier (2015) discuss using digital technology for educating interpreters. Using appropriate digital instructional techniques to educate interpreters on how to engage in video link interpreting is likely a beneficial practice in interpreter education. For those interested in more in-depth training on video interpreting, a curriculum guide containing teaching material pertaining to Video Relay Interpreting (VRS) and Video Remote Interpreting (VRI) is available from the Video Relay Interpreting Institute. While this is focused on VRS and VRI within the US, much of the material could be applicable to other training contexts.

In summary, *Here or There* provides an excellent and well-structured journey from experts in the field using data-based research, through the technologies, and types of interpreting currently involved in video link technologies. Though there are inherent difficulties, such as confidentiality, government regulations, and the involvement of vulnerable populations, when doing research on interpreting via video link (see Koller and

Pochacker), the field of interpreting research must try to stay abreast of new developments so that we can begin to lead the trends rather than following them (Ehrlich & Napier, 2015). Just how quickly research can become outdated is shown in *Here or There* in Brunson's chapter on VRS in the USA, as statements in this recently published work are no longer true of interpreters working in this merely 15-year-old industry. As an interpreter currently working in the VRS field in the United States, I have seen for myself that the pay scales are no longer as lucrative as Brunson mentions, and that interpreters are now allowed more freedom in interacting with callers than they were when he conducted his research. Brunson himself points out change in the field is rapid due to the changing technology and social forces, and this claim is backed up by Napier and Ehrlich (2015). One way a U.S. based VRS company is changing with the times is by instituting a training program where interpreting interns are able to observe live calls and gain mentoring time as they prepare to enter the interpreting field. This is just one example of how the interpreting profession must adapt and move forward quickly to keep pace with the impact of technology. I believe we can take the foundation of this volume, and the previous studies mentioned, and use it to spur the field on to greater improvements in the services we provide to all our consumers, no matter which language they sign or speak.

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Dissertation Abstracts

In this section, we feature abstracts of recently completed doctoral or master's theses. If you have recently completed a master's or PhD thesis in this field and would like it to be included, please send an abstract of 200–300 words to citjournaleditor@gmail.com. We urge all academic supervisors to encourage their students to submit abstracts of their completed dissertations for inclusion in the next issue of the journal, in order to help disseminate new research relating to interpreter and translator education.

Storied Realities: An Examination of the Lived Experiences of Deaf Translators

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Abstract

A growing body of research about translation between written and signed languages, specifically as performed by Deaf translators, has raised questions about the Deaf individuals who perform this work. What, if any, unique perspectives do Deaf bilinguals bring to the work of translation? How have the personal and professional experiences of Deaf individuals influenced their development as translators? How do their experiences within a dominant English-speaking society impact the linguistic decisions made by Deaf translators? To address these and other questions, I investigated four key societal elements – social, educational, political, and cultural – in relation to the work of Deaf translators. Drawing on Mertova and Webster's (2009) construct of critical event narratives, I conducted a series of in-depth, semi-structured interviews with six Deaf translators to collect seminal moments in their lives as they relate to their work as translators. Applying frameworks of social constructionism, feminism, and Deaf Studies to the critical events that emerged in the data, I found the identities of the Deaf translators were constructed and shaped by their experiences in societal systems. This qualitative study provides, for the first time, a rich description of individuals who, over time, constructed their identities as Deaf individuals who perform translation work. The results position translation by Deaf bilinguals within the field of Translation Studies, with the larger aim of better understanding the identity of Deaf translators. Critically, the study brings Deaf voices into the conversation about translation.

Keywords: translation studies, ideology, social constructionism, feminism, deaf studies

Crossing the Chasm: Embodied Empathy in Medical Interpreter Assessment

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Abstract

Research on medical interpreters (MIs) in recent years has informed us of the visible and active participating roles that MIs play in the doctor-interpreter-patient triadic encounter. The use of multi-faceted, authentic data has also allowed both verbal and nonverbal nuances to be studied. However, while empirical studies have shown that physician empathy in medical communication is beneficial to the patient's healthcare outcomes, empathy in medical interpreting, especially the one that is expressed nonverbally, is rarely examined in medical interpreting research, even though the MI is the key communication facilitator and in principle shares a communicative goal with the doctor. This study aims to acquire a deeper understanding of how an MI's empathy is constructed nonverbally and perceived by service users, and how it affects interlocutors and the communication process. This research argues that MI empathy in communication is desirable and should be incorporated in the training, assessment, and most importantly, in interpreting practice. Three sets of research questions were formed: (1) How is empathy constructed in an interpreter-mediated medical encounter? What are the differences in the interpreters' performance under different scenarios impinging on the communication process? (2) How do the other medical interview participants (doctor and patient) and observers (video observers) perceive the empathic performance of the interpreters? Is there any discrepancy? Why? (3) How do internal and external influencing factors affect empathic communication such as nonverbal sensitivity, personal traits, attitude of empathy, context of empathy communication, language and interpreting skills, and the other interlocutors' (the doctor and patient) actions and reactions?

A role-play assessment of 26 MI trainees was conducted and videotaped, with real medical professionals as the doctor and experienced practising medical interpreters as the patient, covering twelve languages including Urdu, Punjabi, Nepali, Japanese, Korean and Cantonese. The role-play script was adapted from an authentic conversation recorded in a public hospital in Hong Kong and consisted of both medicine-world and lifeworld content that could elicit empathic opportunities. Observer and participant ratings of the MIs' empathic performance were obtained to determine high and low empathy perception. Two surveys (i.e., MiniPONS and Interpersonal Reactivity Index) on nonverbal sensitivity and dispositional characteristics were administered to find out how these factors were related to empathy. Video recordings were then transcribed and coded for analysis from two dimensions: turn-taking management and relation management.

The findings verified the importance of authenticity and nonverbal attunement to empathy and could inform medical interpreting training and assessment, and enhance doctors' awareness of the roles of MIs so that a more patient-centred and empathic communication environment can be nurtured.

Keywords: empathy, medical interpreting, interpreter education, training and assessment, authenticity

Dissertation abstracts

Sharing the Chairing? A case study investigating practices and impacts of sign language interpretation in meetings with deaf and hearing chairpersons

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Abstract

Signed and spoken languages employ different language modalities which incur distinct interactional norms and behaviours. When deaf and hearing participants jointly engage in 'mixed' meetings, the presence of a sign language interpreter is generally assumed to accommodate these differences (Roy, 1989, 1993; Van Herreweghe, 2002). How interpreters bridge this gap, and whether they facilitate equitable deaf participation in meetings, remains under-researched. Findings to date suggest that mixed meeting interaction tends towards hearing interactional norms (Van Herreweghe, 2002), but whether this differs under a deaf Chairperson remains un-investigated. In interactive encounters, interpreters take an active role in coordinating interaction (Metzger, 2000) but few studies have specifically addressed what 'relational work' (Napier, 2007; Major, 2014) interpreters do in meetings to negotiate the intersect between their role and that of the Chairperson, or to collaborate with participants to facilitate meeting interaction.

This empirical study examines both the interactional management work done by interpreters in the discourse of meetings with a deaf and hearing chairperson respectively, and the perspectives of participants on this. Analysis draws on the Role-Space model (Llewellyn-Jones & Lee, 2014) which builds on interactional understandings of interpreters as participants of the encounters they mediate (Wadensjo, 1993). By applying the model to meeting-talk, the subtle and substantive things interpreters do and say (i.e. 'stepping out of role' to coordinate interaction or engage in small talk) are examined as relational work which impacts on the 'success' of the interpreter-mediated interaction.

Findings confirm that deaf and hearing participants of mixed meetings cannot directly do the transactional and relational work they would in a shared language (Holmes & Stubbe, 2003). For deaf participants, a deaf chairperson enhanced their participation. While both deaf and hearing participants accommodated bilingual bimodal interaction, the data suggests that deaf participants actively monitored and deciphered the interpreting process as the interaction unfolded. The interpreters also appeared to collaborate and align with deaf participants more overtly. The interpreters' role-space in these meetings was found to be dynamically contingent, responding to how the Chair moderated meeting talk and the extent to which participants accommodated the interpreting process.

Keywords: interpreted meeting, role-space, deaf chairperson, interaction management, cooperation