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“I Feel Proud of me”: Emotions and L2 Development in ZPD Activity

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Abstract

Dynamic Assessment (DA) research in the second language (L2) field has, to date, focused almost exclusively on understanding the usefulness of forms of mediation to diagnosing learner language abilities. Largely absent from this work is examination of learner experience of engaging in DA, including the role of emotions in their orientation to the activity, sustained participation, and awareness of outcomes. We report a case study of one participant in a larger study that implemented DA in an L2 English academic writing program at a university in the U.S. The research design included an initial DA to determine areas of writing to target for individualized instruction, a five-week enrichment program informed by this diagnosis, and a follow-up DA to trace learner developmental trajectories. Following one learner through this program, we identify changes in her emotional responses to the challenges of academic writing and also the ways in which changes to these responses emerged in relation to development of her writing abilities and her awareness of strengths and difficulties in her performance. Our discussion considers the importance both of mediation that is attuned to learner emotional responsiveness as well as understanding changes to learner reflections on their abilities as outcomes of development.

Keywords: *Dynamic Assessment, Perezhivanie, Zone of Proximal Development, Emotions*

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¹Introduction

One of the more mystifying discoveries of Twentieth Century physics concerns quantum entanglement, or the phenomenon of particles on the quantum level to remain connected to and

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to mirror one another even when separated by vast distances. The direction of spin, for instance, of an electron will be precisely the same as its entangled partner, leading scientists to depict the two particles as essentially one and the same object. A parallel may be drawn with the advances made by Twentieth Century Russian psychologists in the Cultural Historical tradition, also referred to as Sociocultural Theory (SCT), founded by L. S. Vygotsky (2012). Here, the object of study, human consciousness, is even more difficult to observe than quantum particles, but the possibility of two ‘things’ existing in reciprocal relation to one another was also discovered. Rather than resulting from the use of electron microscopes or other material technologies, however, this discovery occurred through a dialectical mode of thought guiding experimentation and the interpretation of findings, an orientation that seeks precisely to understand how seemingly disparate phenomena may be more meaningfully apprehended as a rational unity (Poehner & Lantolf, 2024).

Of the many insights into human psychology obtained by Vygotsky and his colleagues, one that has only gained attention within the international research community in recent years concerns the interrelation between cognition and emotion (Lantolf & Swain, 2020). In Vygotsky’s time, much like today, these were approached as distinct entities, with researchers free to study the one with little or no regard for the other. Indeed, as Lantolf and Swain (2019) observe, the persistent cognitive bias in psychology has meant that emotion remains relatively under researched. As a dialectical thinker, Vygotsky was clearly troubled by the bifurcation of the cognitive and the affective. In 1934, he wrote: “[t]he separation of the intellectual side of our consciousness from its affective, volitional side is one of the fundamental flaws of traditional psychology” (cited in Wertsch, 1988, p. 189). In Vygotsky’s view, by disentangling cognition from emotion, one is separating a person’s thinking from the fullness of their real lives, from their motives, their goals, and their interests. With regard to developing abilities through education, Sweeney (2023, p. 18) likened the often-exclusive focus on cognition over emotion as “teaching half a human being.” To be sure, this is sharply at odds with Vygotsky’s (1994b) own commitment to development of the person, a holistic view predicated upon the ‘entanglement’ of cognition and emotion, or as Vygotsky would have put it, understanding these as a dialectical unity such that the development of the one implies the other. Vygotsky’s (1994a) views on cognition and emotion are most extensively elaborated in his writings on *perezhivanie*, as we explain below.

In this paper, we engage with the interrelation of cognition and emotion in the context of second language (L2) development. Our aim is to examine how *mediation*, in the SCT sense, that is intended to promote learner L2 abilities simultaneously interacts with a person’s psychology understood to include not only particular intellectual abilities but also reflection and emotion. Our argument is thus somewhat different from that proposed by Kozulin (2024), who maintains that SCT-based pedagogy faces a choice between focusing on the development of cognitive abilities or other aspects of personality. Our interpretation of Vygotsky (1994b) is that the focus of education should be the development of the person as an integrative whole and that various aspects of our psychology must be understood in dialectical relation with one another. Pushing our analogy with quantum mechanics, the present paper considers how mediation directed toward one pole of the dialectic may simultaneously impact both as well as how development may be experienced as both a cognitive/intellectual and emotional process.

We report a case study of one adult learner of L2 English participating in a larger project that examined the use of Dynamic Assessment (DA) in an intensive English academic writing program at a large North American university (for details, see Yu, 2023). DA is a framework for diagnosing abilities that endeavors to broaden the scope of conventional assessments to include not only abilities that have already developed but also those that are emerging (Haywood & Lidz, 2007). DA is rooted in Vygotsky's (2012) discussion of the zone of proximal development (ZPD) to capture the range of abilities that is typically overlooked when only independent performance of experimental or assessment tasks is considered. His investigations led to the discovery that when individuals are offered mediation (e.g., leading questions, hints, feedback, models, etc.) when they encounter problems completing such tasks, they respond in various ways and require differing forms of mediation. This variable responsiveness, Vygotsky (2012) reasoned, is indicative of abilities that, to use a gardening metaphor, have not yet borne fruit but remain buds or flowers. Our project employed DA to look beyond identification of problems in learner academic writing and to determine the buds or flowers, that is, the areas of their writing that learner responsiveness indicated were ripe for intervention. These areas became the focus of a five-week instructional enrichment program, which was in turn followed by post-assessments of learner writing. The aim of the present paper is to explore the question of how a learner's awareness of their emerging L2 abilities may co-occur with their development in writing and how this awareness might manifest through learner emotional responses to both the struggles and successes they experience. We pursue this question by following the trajectory of one participant in the study, whom we refer to as Cacia (a pseudonym), as she develops her academic writing ability.

With the focus of this special issue to honor the contributions of Jim Lantolf to the fields of applied linguistics and second language (L2) studies, we believe it is fitting to examine *perezhivanie* in the context of learner L2 development as this is a topic that his more recent research has engaged (e.g., Lantolf & Swain, 2020). Moreover, our study brings together two other areas of Jim's scholarship: his concern over the focus of L2 assessment, a topic that featured among the earliest of his SCT-informed writings (e.g., Lantolf & Frawley, 1985), and his innovative use of the ZPD to interpret learner development and the processes through which it is revealed during interaction (e.g., Aljaafreh & Lantolf, 1994). Drawing inspiration from Jim's gift for raising questions that open new areas for research, we conclude our paper with a discussion of what we perceive as important considerations for future L2 SCT scholarship.

Literature Review

Dynamic Assessment, the ZPD, and L2 Development

Among the most frequently cited L2 SCT studies is Aljaafreh and Lantolf's (1994) investigation of a tutor's interactions with English learners as they jointly review learner written work and address grammatical problems. While not overtly framed as DA, the study has exerted an important influence on that area of research. Noting that a given feature of grammar, such as definite and indefinite article use, proved difficult for several participants in their study, Aljaafreh and Lantolf endeavored to provide feedback to draw learner attention to the problem and to determine if they could correct it. Their analysis of one-to-one tutor-learner interactions revealed a range of mediating behaviors that they arranged hierarchically from implicit (e.g., encouraging the learner to review the writing to check for errors) to explicit (e.g.,

offering a correction and metalinguistic explanation), with intermediate moves including such behaviors as reminding learners of past problems, drawing their attention to particular sentences or phrases where errors occurred, offering a choice between alternate forms, and so on. Particularly relevant for subsequent DA research is that Aljaafreh and Lantolf (1994) proposed that effective mediation during ZPD activity needs to be contingent upon learner needs (i.e., not offered if learners do not need it and removed when no longer required), graduated (i.e., beginning at the implicit end of the scale and becoming more explicit only as necessary), and negotiated, or reflecting the back-and-forth with learners that takes account of their responsiveness. Indeed, the authors observed that two learners whose independent performances were similar with regard to their language difficulties could respond in different ways when mediation was available, a finding that echoes that reported by Vygotsky (2012) in his writings on the ZPD. Aljaafreh and Lantolf further noted that just as two learners experiencing the same problem might require different levels of mediation according to their graduated scale, the same learner could display different responsiveness over time. In other words, a learner might require more extensive mediation at one point in time than another. An overall reduction across time in the mediation individuals require, although not a smooth, linear process, is an important indication that development is occurring, even if they have yet to achieve fully successful independent performance (see also Lantolf et al., 2016).

Following Lantolf and Swain's (2019) observation that it has only been in more recent years that psychologists and L2 researchers have begun to give greater attention to emotions, it is perhaps unsurprising that the focus of Aljaafreh and Lantolf's (1994) investigation thirty years ago was the accuracy or appropriateness of learner language use. This orientation to the intellectual side of our abilities was carried over in the 2000s as L2 DA research got underway (e.g., Lantolf & Poehner, 2004; Poehner & Lantolf, 2005). Of course, it is worth pointing out that L2 DA was not alone in focusing on cognitive or intellectual abilities as this was also the case outside of the language field. For instance, among the earliest applications of DA is Budoff's (e.g., Budoff & Friedman, 1964) *Learning Potential Assessment*, which as the name indicates posits a new construct, learning potential, as an alternative to more conventional measures of ability such as IQ. Concerned by the overrepresentation of racial and ethnic minority children in special education programs in the U.S., Budoff's interest was in whether a different view of their intellectual abilities could be obtained through procedures that went beyond documentation of independent performance to include whether they improved following a brief intervention (see Haywood & Lidz, 2007). Similarly, the *Graduated Prompt Approach* to DA organized by Brown and colleagues (e.g., Brown & Ferrara, 1985) years later was concerned with whether children with poor school performance might 'close the gap' with their peers on measures of pattern identification and completion and other general cognitive abilities held to be relevant to literacy development. Both *Learning Potential Assessment* and the *Graduated Prompt Approach* provided compelling evidence that conventional assessments often fail to capture the full range of individuals' abilities and that administering the same measure through a dynamic procedure (i.e., with the availability of mediation when needed) revealed varying degrees of responsiveness, indicative of potential future development. Nonetheless, both approaches maintained an assessment focus – that is, a construct or set of abilities – that aligned with the relevant research literatures of the time devoted to general

cognitive abilities; emotions were not considered. An important exception to this is the *Mediated Learning Experience* (Feuerstein et al., 2010).

Briefly, *Mediated Learning Experience* emerged from Feuerstein's decades of work with children frequently regarded as unable to progress through regular education (Feuerstein et al., 1979). Beginning with efforts to rehabilitate children who had survived the Holocaust, Feuerstein reasoned that some simply had not 'learned how to learn' through important experiences in which parents or other caregivers intentionally seek to mediate the world to them. Among other things, such mediated experiences entail directing attention to particular aspects of phenomena, helping make connections with previous experiences, engaging in formulating explanations and prediction, and so on. In the absence of such experiences, the basic cognitive functions required to apprehend reality do not develop. Feuerstein's *Mediated Learning Experience* endeavors to provide an intensive session of mediation as learners encounter a range of tasks targeting such abilities as perception, memory, spatial awareness, and syllogistic and analogical reasoning, among others. While cognition is therefore central in Feuerstein's approach, his conceptualization of the focus of mediation – that is, what must be attended to in order to understand and promote development – includes emotions.

Among the 'attributes' or defining characteristics of *Mediated Learning Experience*, Feuerstein counts *mediation of sharing behavior*, *mediation of frustration*, and *mediation of feelings of competence* (Feuerstein et al., 2010). The explicit inclusion of emotions in Feuerstein's approach signals recognition of the struggles individuals may face when pushed to perform beyond their current abilities, the need to be able to request and accept support from others, and the value of recognizing one's accomplishments. Thus, while a mediator and learner might in one instance be focused on analogical reasoning, mediators may also address emotions that arise during the activity. *Mediation of sharing behavior* signals the importance of cooperation in DA. Just as the mediator must remain open to a range of responsive behaviors on the part of learners, learners, too, need to be willing to accept joint responsibility for the activity, which includes putting forth their best effort to act independently when possible and cooperatively as necessary. *Mediation of frustration* reminds mediators that learner frustration in the face of challenge is understandable and that they may need to intervene to guide the learner away from a sense of failure or feeling of inadequacy and toward recognition of the source of their frustration in the immediate task and modeling how the difficulty may be addressed, impulsivity managed, and the task returned to. *Mediation of feelings of competence*, in contrast, refers to the possibility that learners may not immediately recognize successful behaviors or progress over time and that explicitly pointing this out may increase their awareness of their own abilities.

While Poehner's (2008) in-depth presentation of DA models for L2 scholars included discussion of Feuerstein's approach, emotions remain relatively unexplored by L2 DA researchers. Studies have examined uses of DA in large-scale formats (e.g., Levi, 2017), computerized administrations (e.g., Randall & Urbanski, 2023), teacher professional development (e.g., Davin et al., 2017), pair and group settings (e.g., Poehner et al., 2018), and in formal, high-stakes procedures (e.g., Wang & Zhang, 2023) as well as with learners of varying ages, backgrounds, and proficiency levels (for review, see Poehner & Wang, 2021). This body of research has certainly contributed a great deal to understanding how diagnoses of L2 development may be enriched by engaging with the ZPD. Nonetheless, we are reminded of

Kozulin's (2024) claim, mentioned earlier, that SCT-based pedagogical interventions must orient either to intellectual abilities or to other aspects of our psychology. Taking elementary school education as an example, he explains, "the Vygotskian educational approach that emphasizes the development of reflective and meta-cognitive skills...made this choice deliberately with a full awareness that some other functions related to a child's personality and artistic creativity cannot be equally developed in the same context" (Kozulin, 2024, p. 191). We do not disagree that for purposes of curriculum development and instructional planning, intellectual abilities may be foregrounded; SCT researchers have reported numerous studies profiling learner L2 development through engagement with linguistic concepts, for example (see Lantolf et al., 2021). Our concern is that focusing attention exclusively on intellectual development may prevent researchers and practitioners from recognizing learner emotional responses and needs and that this, in turn, may lessen the effectiveness of pedagogical interventions, reduce learner motivation to continue language study, and lessen the potential for joy and discovery in L2 teaching and learning.

Emotion: The 'other' Pole of the Dialectic of Consciousness

To illustrate the preceding point concerning the centrality of emotion to pedagogical activity, we briefly consider Poehner and Swain's (2016) examination of tutor-learner interactions in a Vygotskian concept-based pedagogical intervention. That paper reports a tutor's efforts to engage a learner, an L1 Farsi-speaking student at a U. S. university whom the authors refer to as Nadia, in ZPD activity that invoked linguistic conceptual knowledge to raise her awareness of communicative options available to her as she completed academic writing tasks in English. Explicitly referencing *Mediated Learning Experience* and notions of sharing behavior and competence, Poehner and Swain (2016) analyzed the dyadic interactions and argued that while mediation ostensibly focused on cognitive or intellectual work, such as phrasing ideas and selecting between alternate linguistic forms, the manner in which the tutor, or mediator, engaged with the learner displayed attunement to her emotional responses during the activity. Specific examples the authors point to include the mediator's efforts to discursively position (e.g., through selective use of 'we' and 'you') Nadia as leading a joint activity in which the mediator functioned as a resource; offering encouragement when the learner appeared uncertain if her ideas were clear or if she was proceeding along an appropriate path; and modeling how to accept feelings of frustration without giving up on challenging tasks. Poehner and Swain (2016, p. 235) conclude that the interactions revealed "the Mediator pushing Nadia cognitively but doing so in a manner that not only allows her to keep trying but encourages her to do so." They continue that the mediator's contributions may be characterized "by respect and empowerment of the learner, and perhaps not surprisingly, Nadia does not appear afraid to move forward" (ibid.).

Poehner and Swain's (2016) argument that mediation oriented to the cognitive may be offered or negotiated in a way that is mindful of the whole person (including their emotions) – that is, that mediation and its reception can be understood as an 'entanglement' of cognition and emotion – is reminiscent of the work of Mahn and John-Steiner (2002). In one of the earliest discussions of *perezhivanie* in the L2 research literature, Mahn and John-Steiner noted that in the final pages of Vygotsky's well-known *Thought and Language* (2012) we see the development of his thinking concerning word meaning as a unit of analysis for studying

consciousness, specifically an expansion that posits a dialectical relation between cognition and emotion. As Mahn and John-Steiner (2002) explained, shortly before his death Vygotsky was working toward an understanding of thought as motivated by emotion. In Vygotsky's (2012, p. 267) words,

Thought is not begotten by thought; it is engendered by motivation, i.e., by our desires and needs, our interests and emotions. Behind every thought there is an affective-volitional tendency, which holds the answer to the last "why" in the analysis of thinking. A true and full understanding of another's thought is possible only when we understand its affective-volitional basis.

Rejecting the position that emotion could be separated from other aspects of consciousness and that researchers could choose which they wanted to study, Vygotsky came to regard emotions as "the supreme authority" for understanding verbal thought (ibid.). As Lantolf and Swain (2020, p. 102) explain, Vygotsky "recognized that verbal thinking represented only *one pole* of the dialectic that formed human consciousness; the other pole comprised emotion." Of course, as a dialectic, influence does not flow in only one direction. According to Lantolf and Swain, situations may evoke emotional responses, but it is through our language and culture that we gain the semiotic tools necessary to mediate the cognitive work of naming, differentiating, and interpreting these emotions (see also Clarà, 2015; Mesquita, 2012). In this way, our language and culture enable us to distinguish sadness from anger or anxiety, and these concepts ultimately complete our experience of a situation. It is in this regard that the contribution of *perezhivanie* to SCT goes beyond helping us to conceptualize cognition/intellect and emotion/affect as a dialectical unity and in fact offers a way of understanding the relationship between individuals and their social environments.

Perezhivanie: Experiencing and Interpreting Emotions

One of the most in-depth explications of *perezhivanie* is provided by Veresov (2017), who connects it to the distinction between a *social environment or situation* and a *social situation of development*. While the former concerns the environment in which individuals engage, such as a home, classroom, or workspace, the latter brings to light the developmental possibilities that are opened for individuals in that environment. Importantly, these possibilities are not the same for each person but are shaped by that individual's history of lived experiences. Here Veresov (2017) refers to Vygotsky's (1994a) use of a prism metaphor to explain how environments may be experienced differently by individuals and create differing possibilities for development. A prism does not reflect light in the way that a surface such as a mirror does; for a mirror, light waves bounce off the surface and return directly, leading to a reproduction of images without 'distortion'. Prisms, in contrast, refract images; that is, light waves change direction depending upon the medium through which they pass, and different substances have different refractive indices. By analogy, the same environment may result in quite different social situations of development as it is refracted through each individual's *perezhivanie*, or history of lived experiences. This history, of course, includes both the cognitive and intellectual but also emotions. This is why, for example, two language learners completing the same activities in the same classroom under guidance from the same teacher may follow very

different developmental trajectories. Indeed, if environments were reflected rather than refracted, one would predict uniformity in development, a fully deterministic influence of environments. Vygotsky (1994a) illustrated this process of refraction to explain differing social situations of development in his discussion of an abusive alcoholic mother and the developmental consequences of the home for her three sons. In Vygotsky's analysis, it was because each child had a different *perezhivanie* and they in fact had different experiences of that environment. Those experiences, of course, involved constructing meaning around their situation, their mother's behaviors, and so on, and using those meanings to make sense of their feelings. In other words, the experience was both cognitive and emotional, with different emotional responses resulting from different experiences of the environment. Especially relevant to our discussion is that these differing cognitive-emotional experiences each had distinct consequences for the children's development.

Returning to Mahn and John-Steiner's (2002) early discussion of *perezhivanie* in an L2 educational setting, those authors lamented the lack of attention in ZPD-inspired research to the importance of emotions in understanding individuals' experiences of learning environments and what this meant for their development. Looking specifically at writing among learners of L2 English, Mahn and John-Steiner proposed a way of conceiving the ZPD that had yet to be explored by researchers and that involves "teachers building on their students' prior experiences, thereby helping them develop the confidence that engenders competence" (p. 46). The authors shared results from Mahn's (1997) study of dialogic journals he maintained with secondary school and university L2 English learners. In that project, Mahn employed the journals as an opportunity for students to write about any topic of their choosing without concern for errors. Mahn responded to the students' writing, and relationships formed through the journaling activity. Among the insights revealed through the journals was the anxiety and frustration many of the learners experienced over their use of English and their fear of communication problems, which further inhibited their language use. Referring to Mahn's efforts to support the learners, Mahn and John-Steiner (2002, p. 57) described "the power of caring support in instilling the confidence with which to meet difficult challenges, to sustain creative endeavors, and to attempt something new." In other words, the students gained greater confidence, which in turn helped sustain their efforts to use the language, resulting in developing competence, a seeming inversion of the assumption that confidence is gained only after competence develops.

The years since Mahn and John-Steiner's study have witnessed a rapid growth in SCT scholarship focused on *perezhivanie* both within and outside the L2 field. Lantolf and Swain (2019, 2020), for instance, review several cases from the L2 research literature of the sort of contradictions that, following Veresov (2017), have emotional resonance for individuals and thus create or inhibit opportunities for development. The examples they consider include, among others, a novice teacher's struggles to reconcile a language lesson as planned and the actual implementation of the lesson, the difficulties an experienced language learner underwent when she enrolled in a university language course that followed a highly traditional form-focused curriculum that discouraged communication, and a young L2 English learner's experience of embarrassment at not knowing the word for a common food item. Emphasizing again the dialectic relation between cognition and emotion, Lantolf and Swain (2020, p. 102) caution, "it is important to not lose sight of the fact that in *perezhivanie* the individual not only

experiences positive/negative emotions but is also able to make sense of them through the concepts available in language (L1, L2, etc.).”

We concur with Lantolf and Swain’s (2020) argument that emotional responses may drive verbal thought, but it is verbal thought that is required to interpret and understand our emotions. While this allows for the differentiation of emotions that are experienced according to one’s language and culture – and in L2 contexts, potentially more than one language and culture – in what follows, we consider another possible expression of this dialectic. Through analyzing the case of an L2 learner engaging in ZPD activity who intended to promote her L2 English academic writing abilities, we examine the manifestation or experiencing of emotion following the intellectual activity of using the language and reflecting on that performance.

The Study

Design and Procedures

As stated earlier, the data we report here are taken from a larger study of L2 DA and academic writing development among English language learners (n=13) at a large U.S. university (see Yu, 2023). The overall research design included a three-step DA procedure at the outset that comprised learners independently preparing a composition in response to a writing prompt, then jointly reviewing the draft with a mediator (one of the researchers), and finally revising the paper independently. The three steps together constituted the DA as learner pre-mediation and post-mediation drafts were blindly reviewed by two raters using a rubric created by Weigle (2004). Comparisons of the drafts allowed for insights into learner responsiveness to mediation during the second step. The mediator, an experienced language teacher and expert on SCT and DA, offered guidance, feedback, suggestions, and other forms of support during the second step in order to observe how learners engaged, whether they understood the mediation and could use it to attempt to identify and address problems in their writing. The mediator’s notes from that session, along with an analysis of the pre- and post-mediation scores a learner’s writing received were used to formulate a diagnosis of that individual’s academic writing. Of particular interest were areas in which learners had showed responsivity to mediation, as these were interpreted as emerging or ‘ripening’ abilities that could be targeted for instructional enrichment. Indeed, the next step of the project was a five-week enrichment program in which the mediator met individually with students and completed writing activities focused on the emerging abilities that had been identified. The precise focus of the enrichment program therefore varied from one learner to another, but all dealt with aspects of source-based, argumentative writing. This type of academic writing was selected due to its importance for writing for academic purposes and for success in higher education (e.g., Hirvela, 2017; Lee & Deakin, 2016; Stapleton, 2017). At the conclusion of the enrichment program, a parallel version of the three-step DA procedure was administered in order to be able to trace learner development across the study and also to allow for comparisons with a control group, who underwent the initial and concluding DA sessions but who received only standard writing instruction rather than enrichment informed by a profile of their DA performance. Following the enrichment program, a transfer assessment was administered non-dynamically to determine learners’ ability to transfer received mediation to a new, more challenging writing task. Finally, participants were interviewed for additional insights into their experiences with DA and perceptions of their writing development.

Focal Participant

The focal participant we discuss here, Cacia, is an L1 Spanish-speaker from Peru who had been living in the U.S. for eight months at the time of the study. She had received an undergraduate university degree in her home country and planned to apply to graduate programs in agricultural engineering in the U.S. While Cacia had studied English for six years in secondary school, her studies had not included a specific focus on English academic writing. Indeed, she expressed that she was largely dissatisfied with the quality of English teaching she had experienced in Peru. She added that she had been pleasantly surprised by her advisor's recommendation at the end of her first term in the academic English program to skip to an intermediate level for the writing course the following term (when the present data were collected). When asked about her experiences so far with writing and her attitude toward it, Cacia stated that of the communicative modalities she especially liked reading and writing. She believed that these were areas of strength for her because she has a good memory for vocabulary.

We wish to note that Cacia is representative of the participants in the larger study insofar as she was a learner of L2 academic writing who had been placed at the same level of study in the university's academic English language program as the other participants. Like the other participants, she struggled with various aspects of writing and evidenced development over the course of the study. However, her precise struggles, the forms of mediation to which she was responsive, the focus of her enrichment sessions, and the development she manifested was distinctly her own. Indeed, as the reader may appreciate, *perezhivanie* and *the social situation of development* are valuable precisely because they help us to understand such dynamics. What struck us in particular as we reviewed study participants we might highlight in this paper was the emotive language that Cacia herself employed, which was not the case with every learner.

Results

The initial DA session began with a source-based independent writing in which students were provided two texts offering differing opinions on the value of homework and were then directed to prepare an essay in which they take a position on the debate, supporting their views with information and arguments from the readings as well as their own experiences. In the DA session, Cacia was first invited to read through the essay and make changes she considered necessary without assistance from the mediator. She was also prompted to evaluate her text with reference to the rubric, commenting on her essay's strengths as well as mistakes and areas in need of improvement. In line with her view that successful writing largely depends upon vocabulary, Cacia's effort to revise her essay focused exclusively on her word choice as well as correcting spelling errors. Her self-assessment similarly noted her use of transitional words and phrases (e.g., first of all, moreover, finally) and reporting verbs (e.g., states that, indicates that). With regard to areas to improve, she observed that she did not include a conclusion and could have provided additional examples. What Cacia's self-assessment did not identify was the major shortcoming of her essay, namely that she had failed to organize her writing around her own opinion. Instead of conveying her position on the value of homework, Cacia had produced largely a summary of the views presented in the readings. This issue is brought out during the second step of the DA session, when Cacia reviewed her essay with the mediator.

In the excerpt that follows, the mediator (M) had asked Cacia (C) if she had difficulty comprehending the two source readings. In turns 1 and 3, Cacia responds that the readings were not a problem but that she was uncertain about how to position her own views.

Excerpt 1

1. C: No (.) but the problem when I wrote my- type my essay:: which position do you support ((reading aloud the prompt))
2. M: Umm
3. C: I don't know in what part of the essay can I put my opinion
4. M: Oh okay
5. C: In the conclusion or in each paragraph (.) I don't know. This is my problem.

Given the directions, which conveyed that the purpose of the essay was to state a clear position on the issue and provide supporting evidence and examples, Cacia's statements in turns 3 and 5 suggest that the issue might be uncertainty as to where the main idea or thesis of the essay should be placed. This would not be entirely surprising as different discourse styles are preferred in various languages and cultures, and even in anglophone academic discourse, which favors announcing the main idea from the outset, there is rhetorical variability. However, as the interaction continues, Cacia's statements reveal that her hesitation concerns not only where to express her views but in fact how prominently they should feature in the writing.

6. M: And then (.) so why didn't you try to give more examples or explanations on your personal belief?
7. C: Yeah (.) why?
8. M: uh-huh
9. C: Umm (3.0) because I don't know if for each paragraph I- I should (.) put my personal opinion (.) it's okay?

In response to the mediator's efforts to determine why Cacia did not express her own opinion more clearly in the essay, she responds with considerable hesitation. Her statement in turn 9 again indicates uncertainty about where to express her views ('each paragraph'), but given that the entire essay is supposed to be argumentative, Cacia's question to the mediator ('it's okay?') may be read as requesting verification that departing from a discussion of the opposing views conveyed in the source readings to include her own position on the value of homework is acceptable.

At the conclusion of the second step of the DA procedure and before Cacia was invited to revise her essay independently, the mediator returned to the issue of Cacia's opinion, notably its absence from the initial draft of the essay.

Excerpt 2

1. M: In this essay (.) as a whole I didn't see your opinion. I saw a lot of Passage A and Passage B
2. C: Yeah ((laugh))

3. M: but I can understand you do have your opinions- you just didn't know how to bring them out
4. C: Yeah I think I confused my- my- the question because I- I- I was practice for the TOEFL exam- the TOEFL exam is about the passage
5. M: Oh
6. C: and I- I have to put the ideas about the reading and for that reason I think I confused
7. M: I know- you mean TOEFL right?
8. C: Yeah yeah yeah!

In turns 1 and 3, the mediator acknowledges that she realizes Cacia has her own opinions about the topic but that she was unsure how – or whether – to express them, relying instead on summarizing the points made in the two source texts. Interestingly, Cacia agrees and in turns 4 through 8 attempts to explain the difficulty she experienced by comparing this writing assessment to her experience with the TOEFL. As Cacia says in turn 4, “the TOEFL exam is about the passage,” that is, about comprehending the ideas expressed in a given passage and being able to discuss them. She reiterates this point in turn 6 (“I have to put the ideas about the reading”), and indeed this does contrast with the focus on argumentation in the DA writing.

This exchange concludes with the mediator accepting that while the writing activity in which they are currently engaged resembles the integrated writing task on the TOEFL as it is source-based, the parameters of the task are different. This time, Cacia in turns 12 and 14 and the mediator in turn 13 jointly construct an explanation concerning how the current writing task departs from the expectations of TOEFL writing.

9. M: This is a little similar to TOEFL because you also need to use some readings
10. C: Yeah
11. M: but it's different
12. C: Yeah it's different because it's my position- in each paragraph it's my position and then I- um I have to put my details and arguments and support my ideas related to the readings
13. M: Exactly (.) and even if- when you use ideas from Passage A and Passage B (.) you use them for the purpose of supporting your position. It's still about your position
14. C: Yeah it's about my position
15. M: Great, now you know it
16. C: ((laugh)) thank you!

Conceptually, Cacia shows signs that she is beginning to understand the expectations for argumentative writing and in particular how such writing differs from the writing she had done in the context of the TOEFL. Of course, understanding this idea does not imply that she was able to produce appropriate argumentative texts; rather, this understanding was, so to speak, ‘ripening’ and it therefore became a focus of the mediator’s work with Cacia during the instructional enrichment program. What we wish to underscore is that at the outset of the study, Cacia’s awareness of how to construct argumentative academic texts in English was limited. Consequently, her efforts at self-assessment did not detect the major impediment to successful writing but instead focused on issues of vocabulary. Shifting our attention to the other pole of the cognitive/intellectual – emotion dialectic, we see Cacia’s initial uncertainty give way to

perhaps satisfaction or even the emergence of confidence when she helps to state the expectations of the writing task and thanks the mediator for helping her arrive at this understanding.

Following the conclusion of the five-week enrichment program, Cacia repeated the three-step DA procedure but with different source readings and focused on a different topic (whether they support students taking a gap year before enrolling in university). Again, Cacia was invited to make changes to her essay before reviewing it with the mediator and to complete a self-assessment. Compared with her performance during DA at the start of the study, Cacia's pre-mediation essay at this point fulfilled the task expectations more successfully. She explicitly stated her position and appropriately incorporated ideas and information from the source readings to support her views. Certain ideas remained under-developed, and there was a degree of overlap in the content of the two main paragraphs that she produced. Cacia herself recognized this latter point, commenting that she had run out of time and had not completed the second body paragraph and conclusion to her satisfaction.

During the interview at the conclusion of the study, Cacia not only displayed more confidence in her writing, but she also offered a more accurate estimation of the strengths and difficulties in her writing. While the interview also revealed her growing awareness of problems pertaining to lexical variation and features of morpho-syntax, Cacia's reflections emphasized her understanding of argumentative writing itself. For instance, when asked about the single greatest challenge she faced, Cacia responded,

In my case the (xx) error that related to my essay was my ideas, because you know for each paragraph maybe I put different ideas, but they need to fit umm these sentences need to have relationship between each other. And also when I put thesis statement, it needs to be clear because this is the most important sentences in the whole essay.

Especially relevant to our interest here, Cacia followed this statement of the understanding of argumentative writing she has developed and how she is able to use this to appraise her own work with an expression of how she *feels* as a result:

Now I'm confident ((laugh)) because in the first time I don't know I- I didn't have idea about how to start an essay, but now I know the steps.

We note specifically that Cacia's *feeling* of confidence is explained ("because") with reference to her newly acquired knowledge ("I know the steps"). That is, she has developed her abilities in the area of academic English argumentative writing. These new intellectual abilities are accompanied by greater understanding of what constitutes appropriate argumentative texts, and so her self-assessments have also improved. Cacia's awareness of these changes have brought about a new feeling that she is expressing as confidence. Her shift from uncertainty to confidence has occurred through a process of mediated achievement (i.e., through the enrichment program and her sustained interactions with the mediator).

Cacia continued that her feeling of confidence pertained not only to the DA sessions and enrichment program but also to her academic ambitions more generally, which involved preparing her application to a Master's degree program.

In this moment, I need to work on my statement of purpose. In my Master's degree maybe I'll apply the knowledge about critique a paper, a medical paper because I need to support my- how to investigate a research about my major.

As Cacia and the mediator concluded their final interview, she took the opportunity to again express her awareness of her development in terms that stress an emotional response.

Excerpt 3

1. M: Is there anything else you want to talk about your writing?
2. C: Umm I feel proud of me! ((laugh))
3. M: You feel proud?
4. C: Yeah Because in- in- in the first moment when I took the test, I felt nervous and I don't know what it was and how can I put my ideas. But then when I- during the process I felt more confident, and now I am ready to write any paper ((laugh))
5. M: Good I indeed saw your improvement over time
6. C: Yes yes yes
7. M: I'm very happy about that
8. C: Thank you for your advice yeah, your recommendation

It is the mediator's question about Cacia's writing – not about how she was feeling – that prompted her exclamation that she was proud of herself. In our view, this suggests that for Cacia, reflection on her writing and her development is indeed intellectual but it is also simultaneously emotional. The two are 'entangled'. In addition, Cacia's statement that she is proud of herself and not her writing suggests how strongly her development is perceived as a personal achievement, that is, a change in her as an individual. In turn 4, she refers to her previous feeling of nervousness, which she contrasts with her current confidence, and she directly connects this to a future orientation ("now I am ready to write any paper"). We also note that in turns 5 and 7 there is a parallel indication of reflecting/knowing/gaining awareness and accompanying emotional response on the part of the mediator. The mediator acknowledges Cacia's development ("I indeed saw your improvement over time") and then goes on to share in Cacia's positive emotions relating to that development, expressing happiness for/with her. Perhaps, just as joint intellectual labor is characteristic of ZPD activity in educational settings, the co-experiencing of joy following success is also vital.

Discussion

We began by drawing an analogy between the concept of entanglement in quantum physics and the dialectic relation between cognition/intellect and emotion captured by Vygotsky's (1994a) proposal of *perezhivanie*. He offered a rather extreme example of neglect and abuse to illustrate how an environment is experienced in different ways by individuals, a process he described as refraction that entails both cognition and emotion and that creates distinct social situations of development. Blunden (2016), too, emphasized the dramatic quality of experience conveyed by *perezhivanie*, but much L2 research to date has aligned more closely with Veresov's (2017) discussion of dialectical contradictions that may provoke emotional

responses and that, while not necessarily extreme, are meaningful for individuals. The examples discussed by Lantolf and Swain (2020) are certainly not as traumatic as the case reported by Vygotsky (1994). Nonetheless, it is clear that individuals experience emotions ranging from joy to frustration to anger and that these emotions need to be interpreted and understood as individuals orient to the future.

The examples we have considered could easily be regarded through a purely cognitive or intellectual lens, focusing on how a learner's engagement with a mediator during DA revealed her thinking and began a process of reorienting her to an academic task. Space did not permit us to trace Cacia's development throughout her participation in all of the assessments and enrichment sessions; instead, we focused on her interactions with the mediator during the DA that occurred at the outset of the study and supplemented that analysis with insights taken from her reflections during an interview at the study's conclusion. What these data reveal is a shift in Cacia's understanding of argumentative writing and the role that her own experiences and values can have in defining the position she adopts and the claims she makes. During DA, Cacia initially regarded the task as primarily displaying a full and correct comprehension of the two readings that were provided, a view that, as her remarks during Excerpt 2 indicate, may reflect the influence of her previous experience with the integrated writing portion of the TOEFL. Indeed, in Excerpt 1, she stated she was uncertain whether she could state her own opinion and expressed reservations about including her views in each paragraph. In essence, Cacia appeared to approach the reading-writing integrated assessment as an exercise in which authority was limited to the texts with which she had been provided, with her own 'voice' as something to be controlled and minimized. Cacia's work with the mediator, then, partly involved reconceptualizing argumentative writing in a way that recognizes the importance of integrating positions and counter-positions presented in the readings but that is also organized according to the writer's aims and reflecting their views. In this sense, we note a parallel with Vygotsky's (2012) argument, discussed earlier, that it is emotion that provides the catalyst for thought, motivating reasoning and action. Cacia's own experiences and values become the driver of the position she takes and the arguments that she advances in her writing. To be sure, this process of mediation and development could be construed as purely intellectual, but this would be to ignore the dialectic that Vygotsky (1994a) maintained, which is crucial to understanding not only the development of consciousness but of the whole person. In the excerpts we have discussed from Cacia's final interview, her emerging awareness of the parameters of this genre of writing and her reflection on her perceptions of her reorientation are evident. What is more, they are experienced and interpreted by Cacia through emotional terms including "nervous," "confident," and "proud." Overlooking this would be to not fully understand her development.

Another point that emerges from our analysis here and that we believe is an important area for future research concerns the interrelation of learner development and their awareness of their abilities. In an earlier study of DA and learner self-assessment, Poehner (2012) considered the importance of learner reflection on assessment performance for development. He argued that development of the abilities in question (e.g., understanding of verbal tense and aspect and their relevance for conveying meanings in an L2) co-occurs with learners' increasing awareness of the appropriateness of particular language choices they have made as they examine their own communicative activity. Poehner's (2012) position then is that rather than

self-assessment existing as a capacity that learners already possess and that is distinct from the linguistic conceptual understanding they are trying to develop, these abilities need to be understood in relation to one another. Kozulin (2024) has recently taken a similar view, proposing that the ability to self-assess should not be assumed a priori but rather should be intentionally developed by teacher-led activities. He explains that this process can “help to demystify the issue of evaluation...The vague feeling of ‘I am good at’ and ‘I am poor with’ is replaced by a much more articulate evaluation of specific skills and performances” (p. 151). Poehner (2012) proposed a form of cooperative, joint self-assessment in which mediators encourage learners to engage in an ‘evaluative reflection’ on their language performance. Rather than simply providing learners with a rubric or set of assessment criteria, learner efforts are mediated by drawing attention to particular features of performance, helping the learner identify changes over time, raising learner awareness of the forms of mediation they may have needed during particular activities and how they responded, discussing difficulties that arose and how they were overcome or negotiated, etc.

Of course, these discussions of learner self-assessment and its development approached them as cognitive or intellectual activities and did not take into account learner emotions. In light of the research considered here, we suggest that such joint reflection on performance may not only raise learner awareness of their development and promote their ability to self-assessment, but, as in the case of Cacia, it may also bring about emotional responses. Teachers and assessors need to be prepared that, regardless of whether emotions were observable during an activity itself, they may emerge upon subsequent reflection. In this regard, we are reminded of Feuerstein (Feuerstein et al., 2010) alerting us to the possibility that, in addition to whatever cognitive abilities that might be the focus of our activity, we may need to mediate a learner’s orientation to the activity as one marked by cooperation and joint responsibility (i.e., mediation of sharing behavior) or their feelings of frustration or competence. While emotional responses might be affirming and positive, as when Cacia expressed feeling pride in herself as a writer and the development that she could perceive, it is equally possible that evaluative reflection could prompt learners to feel disappointed or frustrated. In any event, just as Poehner (2012) argued that self-assessment was essentially a process of looking backward over past performances in order to orient to the future and make determinations concerning what to focus upon, we would add that this re-orientation is both intellectual and emotional. Indeed, mediating feelings of disappointment or frustration, helping learners to recognize achievement and feel confident and proud, and actively engaging with other emotions that arise may prove to be essential for learner continued success in the future.

Conclusion

In lieu of a conventional conclusion, we offer an observation that, in the spirit of SCT and the scholarly contributions Jim Lantolf has made to our field over the years, is decidedly future-oriented and aimed at making a positive difference in the lives of L2 educators and learners. The research we have discussed contributes to an effort to expand the scope of our analyses of learner engagement in ZPD activity to include emotions, and as such it prompts a new appreciation for the dynamicity that characterizes the cognition-emotion dialectic in L2 development. If we consider our everyday experiences, many of us have either encountered or undergone ourselves the phenomenon of ‘test anxiety’. Indeed, anxiety may be the most

common emotion that many people associate with assessment. Test anxiety would seem to be an emotional response that develops following reflection on one's test performance and the determination that one did less well than expected. In this case, the emotional state of anxiety *follows* the assessment itself and indeed may occur *after* the result is known. At the same time, that anxiety may be sustained or may re-emerge during or in anticipation of future assessments. Moreover, the emotional state can have a deleterious effect on assessment performance, reinforcing negative perceptions of one's abilities (e.g., "I knew I would do poorly because I am just not a good test-taker," etc.). This suggests, in the case of assessment, an interrelation between test performance, evaluation of that performance, and the resultant feeling learners experience, all of which together have consequences for continued development. In light of the preceding discussion, imagine creating conditions for L2 assessment that shift learner perceptions from "poor performance" and whether they are a "good test-taker" to an understanding that, "I knew I could do better than I have before," or "I wonder how far I can go." Recognition that we are mediating a *person* and not a computational or translation device, maintaining awareness of learner emotional responses to challenge, success, and struggle, and overtly reflecting with learners on our emotions might indeed transform how we see assessment and how we see ourselves.

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