

## Assessing Second Language Learners' Written Texts: An Interventionist and Interactionist Approach to Dynamic Assessment

Sylvie Thouésny  
Dublin City University, Dublin, Ireland  
sylvie.thouesny2@mail.dcu.ie

**Abstract:** Dynamic assessment is commonly viewed as an approach which integrates both teaching and assessment activities at the same time, and is generally classified into two categories: interventionist and interactionist. While interventionist approach is used in computer-based assessment and is well adapted to large-scale assessment, the interactionist approach is said to be more in line with Vygotsky's concept of the zone of proximal development, mostly with regards to its qualitative orientation, where the aim of the individualised tutoring is to address learners' issues in a highly flexible way. Following a brief presentation of the main approaches to dynamic assessment, this paper proposes a web-based application based on interventionist as well as interactionist approaches in order to assess unrestricted written language of learners of French. Based on a preliminary use of this web-based application, strengths and limitations of this work-in-progress are discussed.

### Introduction

Assessment may be divided into three main categories: assessment for accountability, assessment for learning, and dynamic assessment. While assessment for accountability is required to generate grades and used for future placement decisions, assessment for learning intends to support teaching and learning, and dynamic assessment is considered as an interactive approach which combines both teaching and assessment activities simultaneously.

Dynamic assessment challenges traditional teaching and testing approaches, mostly due to "widespread dissatisfaction with traditional [...] means of psychological testing" (Lidz & Gindis, 2003, p. 99). Rooted in the Vygotskian concept of the zone of proximal development (Vygotsky, 1978), dynamic assessment is characterised as an emerging approach into language learning investigation (Thorne, 2005). Vygotsky in Russia and Feuerstein in Israel both developed an alternative to traditional forms of testing. What Vygotsky refers to as the zone between one's independent and mediated performances to provide insight into the zone of proximal development of one person, Feuerstein considered dynamic assessment as a means to measure one's ability to profit from mediation (Sternberg & Grigorenko, 2002).

The term dynamic assessment was first introduced by Luria (1961), one of Vygotsky's colleagues, when contrasting "statistical" with "dynamic" approaches to assessment. Poehner and Lantolf (2005) report that a statistical approach to assessment "inappropriately assumes that a person's solo performance on a test represents a complete picture of the individual's capabilities", whereas a dynamic approach implies that "a full picture requires two additional bits of information: the person's performance with assistance from someone else and the extent to which the person can benefit from this assistance" (p. 234).

The concept of measuring the process, as opposed to the product, is nothing but new. For example, Dearborn's (1921) opinion was that the "measurement of the actual progress of representative learning would furnish the best test of intelligence". He stated further that "[f]or practical reasons most tests now in common use are not tests of the capacity to learn, but are tests of what has been learned" (p. 211). More recently, Daniel (1997) claims that "test performance following intervention is thought to be a more valid indicator of true ability than is initial performance" (p. 1042). While the term dynamic assessment originated in the domain of children with learning disabilities and abnormal behaviour, Luria's area of research (Jantzen & Braemer, 1994), the notion of dynamic assessment was predominantly applied in the domain of children with cultural deprivation (Feuerstein et al., 1979), children with hearing impairment (Keane, 1987), or children with learning disabilities (Samuels, 2000; Moore-Brown et al., 2006). Clinicians and speech-language pathologists, who explore the usefulness of dynamic assessment, have also extended such a practice to adults' language impairments (Navarro & Calero, 2009). Other practitioners have widened the use of dynamic assessment practices from general education to second language assessment and pedagogy (Lantolf & Poehner, 2004; Poehner & Lantolf, 2005).

The field of dynamic assessment covers a wide range of measurement techniques, which all have different denominations, such as Budoff's (1967) learning potential assessment, Campione and Brown's (1987) graduated prompts approach, or Carlson and Wiedl's (1979) testing-the-limit method, to name but a few. They all share a common feature, that is, the addition of instructional material within assessment to better frame the measurement of learners' abilities, and more accurately predict their learning difficulties (Allal & Pelgrims Ducrey, 2000).

In general terms, dynamic assessment is classified into categories, which correspond to the type of mediation offered. For example, Daniel (1997) distinguishes two groups with different intervention processes, where one approach provides, what he calls, standard interventions, and the other nonstandardised interventions. Lantolf and Poehner (2004), in elaborating a theoretical framework for dynamic assessment procedures, designate both types of mediation as interventionist and interactionist, respectively.

The mediation provided during an assessment of the type interventionist is standardised in the sense that it is arranged in order to provide the learner with mediation, typically from implicit to more and more explicit. Poehner (2008) outlines that the "[m]ediators are not free to respond to learners' needs as these become apparent during the procedure but must instead follow a highly scripted approach to mediation in which all prompts, hints, and leading questions have been arranged in a hierarchical manner" (p. 44-45).

In contrast to interventionist approaches to dynamic assessment, the interactionist orientation is more inclined to adopt Vygotsky's interest in "qualitative assessment of psychological processes and dynamics of their development" (Minick, 1987, p. 119). One major feature is that the mediation between the learner and the teacher is negotiated, rather than established in advance. Lantolf (2009) further points out that the role of mediation is "continually adjusted according to the learner's responsivity" (p. 360). The main differences between both interventionist and interactionist approaches to dynamic assessment found in the literature are summarised below (Tab. 1).

<b>Interventionist</b>	<b>Interactionist</b>
-quantitative analysis	-qualitative analysis
-large-scale assessment	-small numbers of students, time consuming
-mediation established in advance	-mediation tailored to learners' responsivity
-hints ranging from implicit to explicit	
-individual or group settings	-individual
-psychometric reliability and validity	-psychometric measures not viable
-written and spoken language	-spoken language
-computer-based assessment	-human-based assessment

**Table 1.** Interventionist versus Interactionist

The design of the web-based application proposed in this paper intends to benefit from both interventionist and interactionist approaches in order to assess large numbers of learners' texts written as a response to an open task. Strengths and limitations of this work-in-progress project encountered are discussed after briefly introducing the web-based application prototype.

## **The Web-Based Application Prototype**

The application is a web-based solution, accessible through any computer connected to the Internet, offering flexibility to the user as well as a great ease in terms of data accessibility and storage. The aim of this web-based application is to engage learners of French in self-editing tasks and to encourage interactions and negotiations between learner and teacher through the use of the computer.

Learners' texts are first error-corrected by the teacher, then the learners are asked to self-edit their own texts with different levels of assistance. Finally, each alternative proposed by the learners is validated or invalidated by the teacher. A preliminary use of this web-based tool was carried out by 18 learners of French at university level.

### **Correcting Incorrect Grammatical and Lexical Forms**

The students' written texts are first error-corrected (Fig. 1). For example, the ill-formed word *secrète*, displayed in the figure below, does not agree in number with the noun it qualifies. The corrector (a) highlights the word,

(b) enters any relevant information which will help the learner correct himself or herself in the corresponding field under the *Choose or type a meta-linguistic feedback* drop down list, (c) enters an appropriate alternative to the learner's incorrect formulation in the *correction* field, and (d) clicks on the error type *noun adjective agreement* (AgrNA) button. The meta-linguistic feedback may also be selected from the *Choose or type a meta-linguistic feedback* drop down list. This list contains predefined explanations describing recurrent incorrect forms, which necessitate the exact same feedback over and over again.

The screenshot shows a web-based application titled "Correcting text #1". On the left, there is a text editor with the sentence "Le film que j'avais choisi est le film qu'il y a des informations secrètes." The word "secrètes" is highlighted. To the right of the text editor is a grid of buttons representing different error types. The "AgrNA" button is highlighted in yellow. Below the grid, there are two dropdown menus: "Choose an error type" and "Choose or type a meta-linguistic feedback". To the right of these is a "correction:" field containing the text "secrètes". At the bottom, there is a feedback message: "Adjectives agree in number and gender with the nouns they qualify. The noun here is 'informations', and it is feminine plural." and a "submit" button.

**Figure 1.** Web-based application to correct learners' texts

Each incorrect form is stored in a database along with its error type, meta-linguistic feedback, and correct alternative. The levels of mediation, from implicit to explicit, provided to learners to help correct themselves, are as follows: Firstly, the incorrect word or group of words is merely highlighted, giving no further information; secondly, the error type is provided for each highlighted incorrect word or group of words; thirdly, detailed explanations about the nature of the incorrect form are given to help the learner find a correct alternative; fourthly, a correct form is provided.

### Self-Editing Exercises

The mediation provided in interventionist approaches are generally on a progressive scale varying from implicit to highly explicit feedback. As stated by Lantolf (2009), it is commonly assumed that if the learner is able to produce a correct alternative with implicit assistance, therefore, the learner has already achieved "a degree of control over the educational object" (p. 360). However, producing a valid alternative after the first level of mediation does not exclude in any way the fact that the learner could have guessed the answer. For this reason, learners are asked to self-edit their written texts three times (Fig. 2). For the first correction, the learner is asked to correct all highlighted

incorrect forms –enclosed in square brackets– without the indication of the error type. The square brackets are used to make the incorrect forms more salient to the learner. The screen capture shows the provisional interface of the web-based application, which includes features such as input text boxes beside each highlighted incorrect form and selectable buttons to ease the input of accented French characters. If students know or believe they know a correct replacement for the incorrect form highlighted, they enter it in the field provided for that purpose otherwise the field is left blank. After completing the first level of correction, the learner accesses the second level by clicking on the check mark.

For the second and third levels of correction, the learner is provided with the error type and meta-linguistic feedback, respectively. The comments are visible with a mouse roll-over action on the incorrect forms. As for the first exercise, they were asked to correct all highlighted incorrect forms, even if the alternative proposed during the precedent step was correct. The reason for this is to factor out lucky guesses, which could eventually occur during the first phase of self-editing.

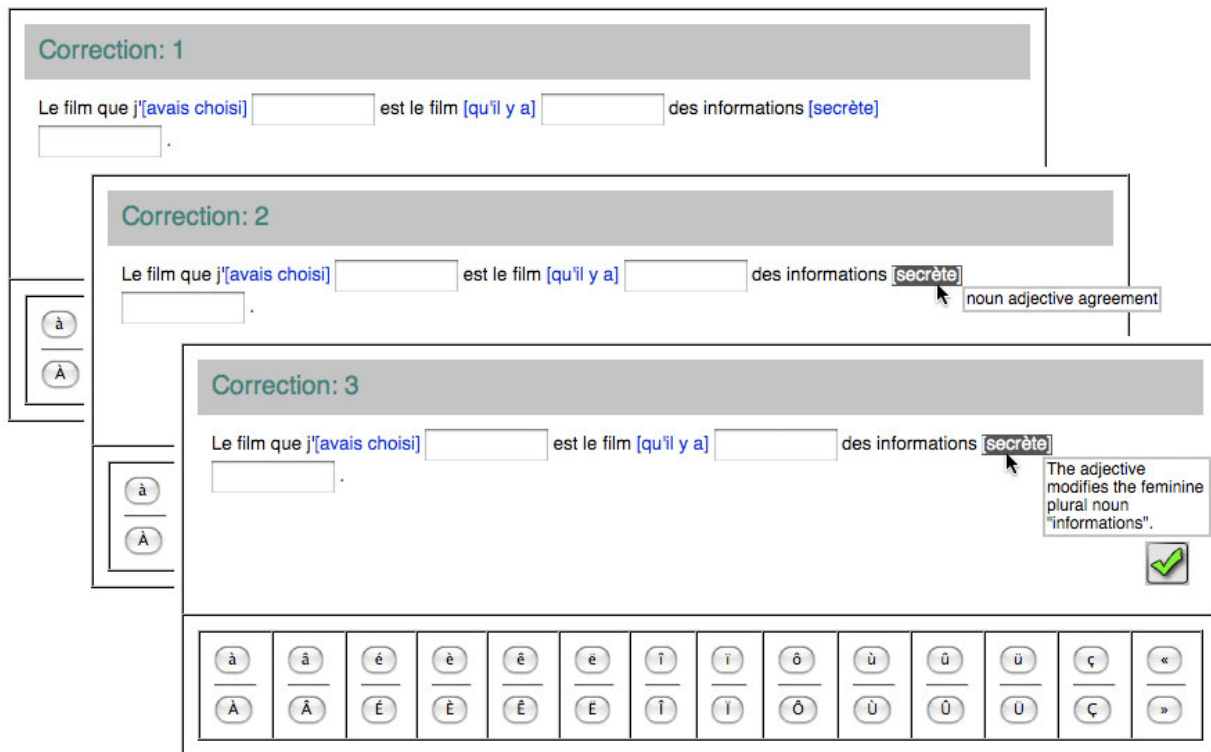


Figure 2. Self-editing exercises

### Validation of the learner's alternatives

There are two validation criteria. The first criterion determines whether the alternative is well-formed and the second one specifies whether the original error type has been resolved. This allows a monitoring system, which determines whether the learner understood the feedback and therefore proposed an alternative accordingly. The validation process is semi-automatised in the sense that learners' answers are automatically checked against the teacher's proposition, but the final decision, which indicates that the alternative is appropriate is decided by the teacher.

Le film que j'[avais choisi] est le film [qu'il y a] des informations [secrète] .								
incorrect sequence	error type	correction 1		correction 2		correction 3		suggestion
		student/errorType	student/errorType	student/errorType	student/errorType	student/errorType	student/errorType	
[avais choisi]	Tense	ai choisi	s: <input checked="" type="checkbox"/> t: <input checked="" type="checkbox"/>	ai choisi	s: <input checked="" type="checkbox"/> t: <input checked="" type="checkbox"/>	ai choisi	s: <input checked="" type="checkbox"/> t: <input checked="" type="checkbox"/>	que j'ai choisi
[qu'il y a]	ConnectionWord	qu'il y avait	s: <input type="checkbox"/> t: <input type="checkbox"/>	_blank	s: <input type="checkbox"/> t: <input type="checkbox"/>	qu'il y	s: <input type="checkbox"/> t: <input type="checkbox"/>	qui a/contient des informations
[secrète]	AgrNA	secrettes	s: <input type="checkbox"/> t: <input checked="" type="checkbox"/>	secrètes	s: <input checked="" type="checkbox"/> t: <input checked="" type="checkbox"/>	_blank	s: <input type="checkbox"/> t: <input type="checkbox"/>	secrètes
								submit

**Figure 3.** A two level validation process

For instance, the incorrect form *secrète*, in Figure 3 (first column, second last row), has been error-encoded as a noun adjective agreement error type (AgrNA) by the teacher. In this context, the word is missing the plural *-s* mark. With the alternative *secrettes* produced at *correction 1*, (third column, second last row) the student solved the concord issue by successfully updating the word with the plural mark. However, by changing the root of the word, the learner created another error type, which could be classified as a misspelling. With only one level-validation method, the dilemma would be to decide between (a) a learner's proposition correct in every respect or (b) a learner's proposition solving exclusively the original error type. Accepting the word *secrettes* as a correct alternative, which is half true since the word has been rectified in accord to the error type, is not an acceptable option for the student. From an ethical point of view, it would be unsuitable to corroborate that the misspelt word *secrettes* is in fact a perfect replacement to the original incorrect form. However, not validating the alternative denotes that the specific error type was not resolved and maybe not understood, which is false since the missing plural mark was added. The letter *s* (for student) on the left hand side of each check box identifies the learner's entry as a perfectly correct alternative for the learner. The letter *t* (for type) identifies the learner's alternative as the error type fixed.

## Conclusion and Discussion

This paper presented a preliminary version of a web-based application designed to not only assess language learners' free written productions, but also facilitate interactions between learners and teachers during the assessment process. Interventionist approaches to dynamic assessment are usually suitable for large-scale assessment, psychometric measures and interventions, but not for interactions and negotiations. Interactionist approaches, on the other hand, allow teachers as well as learners to not only interact, but also negotiate the mediation offered. The design of this application is an attempt to include interactions as well as negotiations in large-scale assessment of texts written as a response to essay type questions.

A preliminary use of the web-based application showed certain drawbacks and limitations. For example, the three-level self-editing exercise is not a pertinent solution to avoid learners' lucky guesses when correcting themselves for two main reasons: Firstly, the teacher spent time providing meta-linguistic feedback for incorrect forms, which did not require any further explanations than the error type to be correctly self-edited; secondly, the learners were bored with the third level of assistance, especially for incorrect forms they were able to correct without assistance, that is, when the incorrect form is merely highlighted. A two-level self-editing exercise should enable teachers to spend less time on text correction, and learners to be less frustrated, when already knowing a correct alternative without assistance. The third level of mediation could take place after the validation process, thus allowing teachers as well as learners to concentrate on grammatical or lexical features that are still in the process of internalisation.

The use of the web-based application also showed that learners' acceptance of mediation is not always systematic

and that sometimes learners argue and refuse the mediation offered (Thouësny, 2010). Whilst most learners used the input text boxes to enter alternatives to their incorrect forms, few learners, on the other hand, attempted to justify their primary choice (negotiation) or asked for further explanations (interaction). Further analyses will be required to generalise the dynamic process of interactionist approaches in large-scale assessment.

## References

- Allal, L., & Pelgrims Ducrey, G. (2000). *Assessment of –or in– the zone of proximal development*. *Learning and Instruction*, 10(2), 137-152. doi:10.1016/S0959-4752(99)00025-0.
- Budoff, M. (1967). *Learning potential among institutionalized young adult retardates*. *American Journal of Mental Deficiency*, 72(3), 404-411.
- Campione, J. C., & Brown, A. L. (1987). Linking dynamic assessment with school achievement. In C. S. Lidz (Ed.), *Dynamic assessment: An interactional approach to evaluating learning potential* (pp. 82-115). New York: Guilford.
- Carlson, J. S., & Wiedl, K. H. (1979). *Toward a differential testing approach: Testing-the-limits employing the Raven matrices*. *Intelligence*, 3(4), 323-344.
- Daniel, M. H. (1997). *Intelligence testing: Status and trends*. *American Psychologist*, 52(10), 1038-1045.
- Dearborn, W. F. (1921). *Intelligence and its measurement: A symposium--XII*. *Journal of Educational Psychology*, 12(4), 210-212.
- Feuerstein, R., Rand, Y., & Hoffman, M. B. (1979). *The Dynamic Assessment of Retarded Performers: The Learning Potential Assessment Device, Theory, Instruments, and Techniques*. Baltimore: University Park Press.
- Jantzen, W., & Braemer, G. (1994). Bibliographie der Arbeiten von A.R. Lurija. In W. Jantzen (Ed.), *Die neuronalen Verstrickungen des Bewußtseins*. Zur Aktualität von A.R. Lurijas Neuropsychologie (pp. 267-345). Münster: Lit Verlag.
- Keane, K. J. (1987). Assessing deaf children. In C. S. Lidz (Ed.), *Dynamic assessment: An interactional approach to evaluating learning potential* (pp. 360-376). New York: Guilford.
- Lantolf, J. P. (2009). *Dynamic assessment: The dialectic integration of instruction and assessment*. *Language Teaching*, 42(3), 355-368. doi:10.1017/S0261444808005569.
- Lantolf, J. P., & Poehner, M. E. (2004). *Dynamic assessment of L2 development: Bringing the past into the future*. *Journal of Applied Linguistics*, 1(1), 49. doi:10.1558/japl.1.1.49.55872.
- Lidz, C. S., & Gindis, B. (2003). Dynamic assessment of the evolving cognitive functions in children. In A. Kozulin, B. Gindis, V. S. Ageyev, & S. M. Miller (Eds.), *Vygotsky's educational theory in cultural context* (pp. 99-116). Cambridge: Cambridge University Press.
- Luria, A. R. (1961). *Study of the abnormal child*. *American Journal of Orthopsychiatry*. *A Journal of Human Behavior*, 31(1), 1-16.
- Minick, N. (1987). Implications of Vygotsky's theories for dynamic assessment. In C. S. Lidz (Ed.), *Dynamic assessment: An interactional approach to evaluating learning potential*. New York: Guilford.
- Moore-Brown, B., Huerta, M., Uranga-Hernandez, Y., & Pena, E. D. (2006). *Using Dynamic Assessment to Evaluate Children With Suspected Learning Disabilities*. *Intervention in School and Clinic*, 41(4), 209-217. doi:10.1177/10534512060410040301.
- Navarro, E., & Calero, M. D. (2009). *Estimation of Cognitive Plasticity in Old Adults Using Dynamic Assessment Techniques*. *Journal of Cognitive Education and Psychology*, 8(1), 38-51. doi:10.1891/1945&U8211;8959.8.1.38.
- Poehner, M. E. (2008). *Dynamic Assessment: A Vygotskian Approach to Understanding and Promoting L2 Development*. Milton Keynes: Springer.
- Poehner, M. E., & Lantolf, J. P. (2005). *Dynamic assessment in the language classroom*. *Language Teaching Research*, 9(3), 233-265. doi:10.1191/1362168805lr166oa.
- Samuels, M. T. (2000). Assessment of post-secondary students with learning difficulties: using dynamic assessment in a problem solving process. In C. S. Lidz, & J. G. Elliott (Eds.), *Dynamic Assessment: Prevailing Models and Applications, Volume 6 (Advances in Cognition and Educational Practice)* (pp. 521-542). New York: JAI, an imprint of Elsevier Science.
- Sternberg, R. J., & Grigorenko, E. L. (2002). *Dynamic Testing: The Nature and Measurement of Learning Potential*. Cambridge: Cambridge University Press.
- Thorne, S. L. (2005). *Epistemology, Politics, and Ethics in Sociocultural Theory*. *The Modern Language Journal*, 89(3), 393-409. doi:10.1111/j.1540-4781.2005.00313.x.
- Thouësny, S. (2010). *Dynamically assessing written language: To what extent do learners of French language accept mediation?* Paper presentation. CALICO Conference, Enhancing Language Learning: Research, Innovation and Evaluation in CALL, 8-12 June 2010, Amherst College, Amherst, MA, US.
- Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.