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Foreign Language Immersion
Classrooms**

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Interactional Negative Feedback in Foreign Language Immersion Classrooms

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Abstract

A series of theoretical and practical educational studies have suggested that learners need corrective feedback to progress in their learning (Chaudron, 1988; Lyster, 1998; Lyster & Ranta, 1997). In an attempt to contribute to this research area, the present study seeks to contribute further empirical data on the differential effects of interactional teacher feedback into subsequent immersion FL learner productions in international school environments (Lyster & Ranta, op.cit.). Through a corpus-based approach, an attempt is made to discover conditions for felicitous Teacher Reaction Episodes (TREs) in acquisitional terms at two Senegalese international bilingual schools (Vicente-Rasoamalala, 2010).

'Teacher reactions' refer to any verbal and non-verbal instructional strategies that handle FL learner oral productions. In traditional SLA research, this teacher practice has been conceptually examined under the rubric of 'corrective feedback'. Specifically, a Teacher Reaction Episode consist of a prototypical three-part basic sequence¹: 1. FL Student Initial Turn→ 2. Teacher Reaction→3. FL Student Response.

We collected videotaped data at two Senegalese international bilingual schools (70 lessons). Three teachers were observed with their students in three main differentiated immersion learning settings: i. Advanced English at the primary school; ii Intermediate English at the primary school; and Spanish as L3 at the secondary school.

We examine learners' involvement in repairing errors according to the Long's Interaction Hypothesis (Long, 1996) and the Neo-Vygotskian notion of 'self-regulation' (Aljaafreh & Lantolf, 1994). In particular, learners receiving elicitation and metalinguistic feedback appear to generate more uptake than those receiving recasts.

Key words:

Corresponding Author:

¹The instances in which the learner immediately self-corrected an error without the help of the teacher were not taken into account.

Introduction

Various approaches have analysed teacher and student SLA classroom interactions such as the initial systems of classroom discourse studies, the ethnography of the speech, Discourse Analysis and Conversation Analysis. Distinctively, the most common tendency has been categorising TREs as patterned sequences embodied in systematised models or taxonomies regarding teacher corrective strategies (Chaudron, 1988). Nevertheless, during the 1990s a growing interest emerged, reconsidering the role of the external environment in FL acquisition (Doughty & Varela, 1998; Gardner & Wagner, 2004; Long et al., 1998). This SLA model views language acquisition as a social activity developed in interaction (Long, 2007).

A number of studies which adopt a variety of theoretical and methodological perspectives have postulated that oral and written teacher feedback under the forms of error correction might be key factors for FL learner acquisition (Chaudron, *op.cit.*; De Guerrero & Villamil, 1994; Koshik, 2002; Lightbown & Spada, 1991; Lyster & Ranta, 1997). In particular, teacher feedback provided during classroom interactions might facilitate the noticing, acquisition and retention of L2 forms (Ellis et al., 2006; Iwashita, 2004; Li, 2010; Lyster & Saito, 2010; Mackey, 2006; Mackey & Philp, 1998; McDonough, 2005; Oliver & Mackey, 2003; Yang & Lyster, 2010).

Conversational ‘implicit teacher feedback forms’ (Lyster & Ranta, *op.cit.*) are being specifically examined vis-à-vis their overall potential support in FL learner acquisition in SLA research. In this line of thinking, these teacher strategies might potentially trigger learner cognitive development or attract learner attention to their own mistakes and their interlanguage gaps. Therefore, these types of feedback might create meaningful possibilities for modifying output and developing learner competence.

Mackey et al., (2003) claimed that it is still necessary to estimate the variables that might affect the amount and nature of verbal and non-verbal negative feedback and the scope of learner repair or generated modified output. Hence, a growing number of studies attempt to portray the observable features of teacher reactions concerning negative feedback. However, the SLA optimal environment has not been determined and the facilitative factors surrounding teacher feedback provision are still controversial (Lantolf, 2006; Long, 2006; Mackey, 2006).

Current Study

This study collects data from two private Senegalese international bilingual schools, with teachers interacting with their students in FL classrooms. It consists of microanalysis case studies carried out for observing and identifying the turns of TREs within natural classroom interaction. A hybrid method, or Multimethodology (Brannen, 2005) is adopted. The episodes

are examined according to Conversation Analysis, social interactionism and sociocultural or Neo-Vygotskian perspectives.

The Setting

The data collection sites are located in two private international bilingual immersion schools in Senegal. This West African country is a former colony of France. French has been the only official language since independence in 1960. This European language is used for official affairs and by the middle and upper classes. It is also the sole medium of instruction in education (Moreau, 1992). Nevertheless, thirty-six indigenous languages are commonly spoken in local contexts. ‘Wolof’ is the mother tongue of the Wolof people, who represent 45% of the population of Senegal.

Another significant feature of Senegal is the low literacy rate of the population (38.3 % in 2003) despite the fact that education is compulsory for children from 7 to 13 years of age. The Senegalese education programme was mainly inherited from the French curriculum (Ndiaye, 2006). But we find that implementation varies according to the financial status of schools.

After two months of contacting and visiting some schools and presenting the study at meetings with the bilingual schools’ staff and the students’ parents, two were chosen as the education centres for the study. They are formally ‘Senegalese schools’ which possess international-school features: one catering for kindergarten and primary education (School A) and another for secondary education (School B). The children of the Senegalese elite classes and children of expatriates on temporary assignment in Senegal attend them. Both schools run combined Franco-Senegalese and Anglophone programmes which involve foreign language teaching in both French and English languages (Genesee, 1994) and FL CLIL (Content and Language Integrated Learning) or content-based activities (Marsh & Langé, 1999) to different degrees. These schools employ two-way immersion programmes (Bae, 2007) in which two languages are used as the main vehicles for instruction and communication in the school. The term “immersion” refers to the teaching approach in which students receive academic instruction of core content subjects in a language that is not usually their mother tongue (Wesche, 2001). Students attending such schools are “immersed” in an environment that might be foreign to them.

Method

Video data collected from two Senegalese international bilingual schools illustrate the differential effects of teacher feedback on FL learner uptake in classroom interaction episodes. In this way, we endeavour to address the formal features and phenomena involved in Teacher Reaction Episodes (TREs).

Specifically, 3 language teachers were observed with their students in their FL immersion classrooms in three main differentiated learning settings:

- i. Advanced English immersion (Years 1, 2, 3, 4, 5 and 6) at the primary school (Setting 1)
- ii. Intermediate English immersion (Years 1, 2, 3, 4, 5 and 6) at the primary school (Setting 2)
- iii. Spanish as L3 immersion (Years 9 and 10) at the secondary school (Setting 3)

Two of them (T1-T2) teach English in the A School and the third one Spanish (T3) in the B School.

In order to control affective variables such as the ‘observer’s paradox’, the researcher decided to conceal the real purpose of the study from the participating teachers. Therefore, there was no control over the way they conducted their classes. They only knew that the researcher was interested in recording classroom interaction.

The students participating in the study include:

- i. 118 learners of English with different levels of proficiency studying at the A School
- ii. 38 learners of Spanish as a L3 studying at the B School

A total of 14 lessons were observed to this end in each classroom year level. Three research questions emerge from this work when: i) a learner initiates a conversation in an FL with an ungrammatical or a problematic element in it, ii) subsequently, the teacher reacts to this utterance and next iii) the learner responds to the teachers’ interventions. This general statement is specified in the following research questions:

►RQ1. *What are the types of teacher reactions to learners’ FL faulty utterances in the three different kinds of classroom immersion situations identified in Senegalese international bilingual schools?*

►RQ2. *What types of teacher reactions may generate learner responses in the forms of repair or uptake according to the typology and the FL immersion contexts?*

►RQ3. *What status and role may learners’ responses have in their interlanguage development?*

Starting from the assumption that corrective feedback moves are more complex than the simple tripartite IRF structure identified traditionally in classrooms consisting of: i) *Initiation*, ii) *Teacher Reaction* and iii) *Learner Response*, we postulate the following three hypotheses.

In relation to RQ1, we hypothesise that may produce different patterns according to the nature of the interactional FL classroom context. We assume that teachers may display different and recurrent reactive verbal and non-verbal behaviours in relation to learner output according to variables such as learners’

and teachers' characteristics and beliefs, course level, the number of students in classrooms, motivation, the features of the programme, teaching methodologies and approaches.

In relation to RQ2 we hypothesise that the episodes of teachers' reactions involving negotiation may trigger learner uptake. Regarding this condition, we examine environment variables that might potentially boost negotiation:

- i. The teacher's competence in the TL and their years of teaching experience
- ii. Small classroom groups
- iii. Learner competence in the TL

In relation to RQ3, we hypothesise that some TREs may be potentially more beneficial for learners' interlanguage than others, as some theories and studies claim. We examine learners' involvement in repairing errors in teacher reaction episodes according to the Interaction Hypothesis (Long, 1996) and the sociocultural or Neo-Vygotskian Theory (Aljaafreh & Lantolf, 1994; Kozulin, 2003; Vygotsky, 1978). To this end, we study both the sequences that facilitate learner self-regulation according to Neo-Vygotskian terminology and the negotiation of form and meaning.

Table 1. *FL Immersion Classroom Settings*

FL IMMERSION CLASSROOM SETTINGS				
Teachers	Schools	Settings	Immersion language programmes	Classroom Group Years (UK levels' equivalent)
T1	A	1	Intermediate English	Years 1, 2, 3, 4, 5 & 6
T2	A	2	Advanced English	Years 1, 2, 3, 4, 5 & 6
T3	B	3	Spanish FL	Years 9 & 10

Abbreviations: T: Teacher FL: Foreign Language

Table 2. *Teachers' Profiles*

TEACHERS' PROFILES							
Identification	School	Nationality	L1	Language of instruction	Qualifications	Years of teaching	International practice
T1	A	Gabonese	French and Fang	English	University degree	8 yrs.	2 yrs. in Japan
T2	A	American	English	English	University degree	20 yrs.	10 yrs. in USA 5 yrs. in Mexico
T3	B	Senegalese	Wolof and French	Spanish	University degree	30 yrs.	0 yrs.

Abbreviations T: Teacher L1: Mother tongue yrs.: years

Table 3. Profiles of Participating Students in the Study

PROFILES OF PARTICIPATING STUDENTS								
SCHOOL	Ss Ages	L1	%	L2	%	L3	%	N of Ss
A	5-10 yrs.	Wolof	60 %	French	56 %	Spanish	1%	118
		French	20 %	English	4%			
		English	10 %					
		German	2,5 %					
		Portuguese	2 %					
		Italian	2 %					
		Arabic	1 %					
		Other (Diola, Japanese, Thai, Indonesian)	1,5 %					
B	13-14 yrs.	Wolof	50 %	English	13%	Italian	1%	38
		French	31%					
		English	15%	French	65%	Arabic	2%	
		German	2.5%					
		Arabic	1%	Diola	1%			
		Korean	0.5%					

Abbreviations: yrs.: years Ss: Students L : language; N: number

Specifically, implicit negative feedback obtained through negotiated interaction and recasts might facilitate SLA (Long, 1996; Lyster, 2007; Pica, 1996). From the Neo-Vygotskian psychological perspective, it is suggested that adjusted teacher help and feedback rightly tuned to the individual situation of the learner might potentially widen the learner’s linguistic repertoire and therefore enhance foreign language acquisition (Lantolf, 2006). This perspective assumes that the different levels of help that teachers offer to learners range from ‘other-regulation’ (other-repair) to ‘self-regulation’ (self-repair).

Overall, teacher reactions are said to:

- i. promote noticing and acquisition of foreign language forms (Lyster, 2007; Mackey et al., 2003)
- ii. provide opportunities for learners to modify their output, pushing them to notice gaps in their interlanguage knowledge (McDonough, 2005)

Data

The data supplied for analysis consists of: i. video snapshots of TREs, ii. field notes of observations, iii. questionnaires, and iv. interviews.

The analysis primarily draws on a corpus containing transcripts of video recordings from natural FL classroom interaction (in total 26 hrs 30 min of recording). The full data set consists of 70 observed and videotaped lessons containing the classroom interactions of 3 teachers with their students within 5 months. Five lessons for each type of classroom group level were examined.

Examples of non-verbal elements (Vicente-Rasoamalala, 2006) occurred alongside verbal elements in these immersion classrooms. For instance, words written on the blackboard and teacher gestures acting as feedback for foreign language learners:

Example 1

S1: El piloto es apl/o/dido.

T3: ¿Quién es apl/o/dido?

S1: Es aplaudido.

T3: Bien. El piloto es aplaudido. [writing ‘aplaudido’ on the blackboard]

Videoed material appears to capture more accurately the face-to-face nature of classroom interaction (comprising teachers’ reactions), which in descriptive terms is more complex than audio-recorded classroom exchanges.

Units of Analysis and Coding

The main unit of analysis in the study is the Teacher Reaction Episode (TRE) consisting of a prototypical three-part basic sequence¹:

1. FL Student Initial Turn → 2. FL Teacher Reaction → 3. FL Student Response

Example 2

S1: Oh, I have a nose ache. (FL Student Initial Turn)

T2: No. No. [negation with head moving] My nose hurts. [other noises and voices] My nose hurts. (FL Teacher Reaction)

Ss: My nose hurts. (FL Response)

This triadic TRE (Teacher Reaction Episode) sequence coincides with the traditional IRF classroom exchange structure (Mehan, 1979; Sinclair & Coulthard, 1975). Nevertheless, “reactions” include the teachers’ actions that are contingent to what a student has previously done regarding a FL production (Lyster & Ranta, 1997).

We attempted to categorise the types of teacher reactions to FL learner deviant structures, adapting Lyster and Ranta’s (1997) and Chaudron’s (1988)

¹The instances in which the learner immediately self-corrected an error without the help of the teacher were not taken into account.

categories of teacher feedback. Subsequently, we operationalised the codes under the following subcategories:

- The ‘**disregard**’ is a teacher strategy that has not been fully examined, but only mentioned in some studies about teacher feedback. This notion covers the ‘Disregard Teacher Reactive Episodes (DTREs), in which the teacher ignores a learner utterance or abandons correction after several attempts.
- ‘**Explicit negative feedback**’ (i.e., overt error correction) is the kind of teacher reaction that has pervaded FL research on teaching. It overtly draws learner attention to incorrect TL forms. Some authors have observed that most foreign language teachers rely heavily on error correction as the major source of feedback (Aljaafreh & Lantolf, 1994; Chaudron, 1988). Nevertheless, this practice is said to be less beneficial for FL acquisition despite there being no conclusive empirical results derived from studies (Ammar & Spada, 2006).
- ‘**Implicit negative feedback**’ is the teacher feedback that encourages students to correct themselves. That is, not giving the correct version for learner output at once. This reaction has attracted linguists (Long et al., 1998; Lyster, 1998; Mackey & Philp, 1998) since the publication of Long’s Interaction Hypothesis (1996). Several learning approaches suggest that clarification requests and recasts might induce learners to detect the disparity between their IL and the TL, although different studies give varied outcomes.
- ‘**Non-verbal components**’ consist of embodied and material actions that might act as a teacher reaction, accompany one verbal teacher reaction or complement the intended sense of the reaction.

We also observed the frequency distribution of Teacher Reaction Episodes (TREs) in videorecorded data, and identified, segmented, transcribed and analysed the moves in TREs according to ethnography of the Speech and Conversation Analysis frameworks.

Analysis of the videorecorded classroom interactions suggests that, in general, Teacher Reaction Episodes usually begin with a learner production that might consist of:

- i. oral utterance that may be correct or deviant in form or/and content
- ii. non-verbal response communicating an intended message in the target language
- iii. silent response to teacher’s previous questioning

The end point of a sequence takes place after one of the following three conditions:

- i. the teacher ignores the utterance
- ii. the teacher offers a written and/or oral feedback response with the possibility of student repair or some type of learner uptake
- iii. another student provides feedback encouraged by the teacher

The last segment of TREs might cover the resultant moves on the part of the following participants: i. the learner, ii. other(-s) learner(-s), and iii. the teacher.

The flowchart in Figure 1 summarises the potential series of options that constitute complex teachers' reactions to FL learner output. We put in red the learner initial turn involving a correct utterance in the FL and which we omit from the data analysis of the present study.

We also examined two specific types of non-verbal elements that will be taken into account in the analysis of TREs: i. 'teachers' non-verbal cues' and ii. 'non-verbal elements reinforcing teachers' reactions'.

There are two general types of teachers' non-verbal cues relating to TREs (Vicente-Rasoamalala, 1998):

- i. **'Non-verbal transfer'**: soliciting a reaction in which the teacher directs eyes or makes a gesture towards another student for other error-correction.
- ii. **'Implicit non-verbal feedback'**: non-linguistic feedback that invites students to self-correct.

In particular, we will focus on the types of non-verbal feedback shown in the Table 4.

'Non-verbal elements reinforcing teachers' reactions to output' might mediate in teaching. Two types of elements are salient in the classroom (Vicente-Rasoamalala, 2010): i. writing on blackboard and ii. gestures (see Table 5).

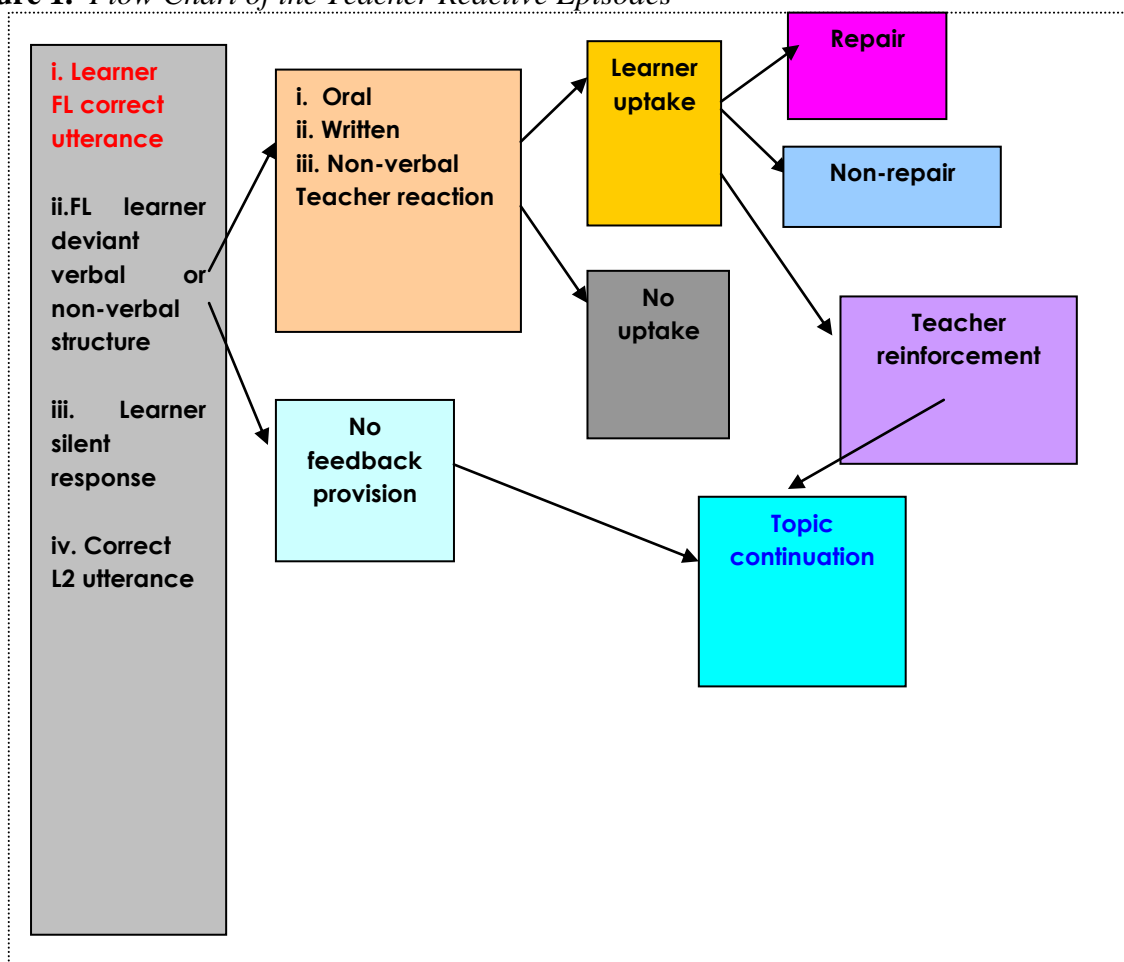
Table 4. *Types of Non-Verbal Feedback*

TYPES OF NON-VERBAL FEEDBACK	DESCRIPTIONS
Positive nod	The teacher moves his or her head up and down to show approval of the student's utterance.
Explicit negation	The teacher moves his or her head, wags a finger or utters sounds to reject part or all of the student's utterance.
Implicit repeat	The teacher implicitly requests the student to repeat the utterance/s by means of gestures and sounds, in order to induce the student to self-repair.

Table 5. *Non-verbal Elements reinforcing Teachers' Reactions*

NON-VERBAL ELEMENTS REINFORCING REACTIONS	DESCRIPTIONS
Writing on blackboard	This tool might reinforce the 'provide', the 'repetition' and the 'adjustment' reactions of teachers.
Gestures	Teachers' gestures might help students to illustrate explanations.

Figure 1. *Flow Chart of the Teacher Reactive Episodes*



Results

The database of Teacher Reaction Episodes (TREs) is composed of 1186 moves involving negative feedback extracted from 70 hours of videorecorded lessons. Data analysis reveals that the three teachers react to foreign language learner deviant structures with negative feedback by not delaying its provision in 95 percent of cases.

In particular, T2, who is the native English speaker, appears to react to her students on fewer occasions ($n= 43$) in contrast to T1 ($n= 754$) and T3 ($n= 389$). One possible reason for this could be that the T2 setting relates to the Advanced English programme that gathers together near-native and native English-speaking students. Therefore, in this setting students seem to generate fewer TL errors. In contrast, T1 and T3 provide negative feedback in higher amounts to FL deviant structures as they teach less proficient groups in the target languages (TLs) that are more prone to produce errors. Table 6 indicates the number of teacher reaction moves per episode, triggered by learner deviant structures in the different types of immersion settings.

Table 6. *Teacher Reaction Moves Per Classroom*

TEACHER REACTION MOVES			Total of TRs' MOVES	
Settings	Types of Immersion School classrooms (UK Grades)	n of Ss	n	%
T1	Year 1 Intermediate English	10	28	3.7
	Year 2 Intermediate English	16	39	5.2
	Year 3 Intermediate English	12	78	10.3
	Year 4 Intermediate English	11	51	6.8
	Year 5 Intermediate English	12	66	8.8
	Year 6 Intermediate English	4	492	65.3
Total			754	100.0
T2	Year 1 Advanced English	10	6	14.0
	Year 2 Advanced English	10	5	11.6
	Year 3 Advanced English	10	12	27.9
	Year 4 Advanced English	8	9	20.9
	Year 5 Advanced English	9	7	16.3
	Year 6 Advanced English	4	4	9.3
Total			43	100.0
T3	Year 9 Spanish FL	18	208	53.5
	Year 10 Spanish FL	20	181	46.5
Total			389	100.0
OVERALL TOTAL			1186	100.0

Abbreviations: T: Teacher FL: Foreign Language Ss: Students n: Number
TRs: Teacher Reactions

Here we bring together the summary of the results regarding the empirical study.

Regarding teachers' data we can summarise the following:

- Global analysis of data indicated that in most cases teachers 'incorporate' (95%) under the forms of negative feedback FL learner inaccurate utterances in the three immersion settings. That is, they provide feedback for learners. Only 5% of Disregard Teacher Reactive Episodes (DTREs) that did not incorporate target language learner deviant utterances were found in data.
- Taking into account the overall results in the three settings, the most usual type of immediate teacher reaction is elicitation (n=409; 34.5%) followed by metalinguistic feedback (n=220; 18.5%), clarification request (n=170; 14.3%), recast (n=140; 11.8%), explanation (n=112; 9.4%), repetition (n=110; 9.3%), provide (n=14; 1.2%) and adjustment (n=11; 0.9%).
- Teacher reactions appear to be more complex than the traditional IRF classroom pattern (Schegloff, 2007). A teacher reaction episode might be 'mono-episodic' or 'multi-episodic'. A significant number of teacher reaction episodes (almost 9%) involve multiple feedback. Furthermore, we find that prototypical patterns might be broken by learners' interruptions.
- The collection of videoed data proved that the non-verbal components (n=991) should be considered in TRE studies. We find: i. different types of non-verbal cues and ii. non-verbal elements such as gestures and writing on the blackboard. Writing on the blackboard (60.5%) seems to reinforce some TRE reactions of the types 'provide', 'adjust' or 'repetition' and becomes a significant mediator of learning.
- Teachers provided different types of negative feedback to learners. T1 and T3 favoured more negotiation of form through elicitation, metalinguistic feedback and clarification requests and delivered lower numbers of recasts. However, T2 provided only recasts but disregarded most learner errors. Their practices in the videorecorded data matched their beliefs about TREs expressed in interviews and questionnaires.
- The fact that there was a low number of recasts (33.6%) in this study contradicts other studies that claimed that recasts are universally the most frequent type of feedback in immersion contexts. Curiously enough T2, who is the native teacher of the TL taught and the only non-African, used them more extensively. These results show that recasts might be ineffective in producing immediate self-repair as is the case in the T2 setting.

- There are often extra teacher comments following core prototypical teacher reaction episodes such as positive reinforcement forms after learner uptake or nagging comments.
- The three teachers' styles were possibly manifested in their TRs and corresponded to their surveyed expressed views. To a certain extent, teachers participating in this study have confirmed their beliefs on their own corrective practices in FL classrooms as captured in video data. For instance, T1 and T3, the non-native teachers, stated that feedback is necessary for learners. Therefore, they assign a specific role to negative feedback as the teacher reaction that negotiates accurate forms for learners. However, T2 influenced by her Krashian formation and practice in Bilingual Californian schools does not value negative feedback very much and preferred to use recasts when some learner deviant structures occurred in her classrooms.
- Only T1 codeswitches into the L1 of the majority of her students in some types of reactions such as metalinguistic feedback, 'repeat' requests or 'recasts'.
- The classroom size and age group might shape the provision of teacher reactions. It seemed that it could produce higher frequencies of teacher reactions in a smaller classroom group such as Year 6 in the T1 setting. Nevertheless, we have not found statistically significant results regarding these contextual factors.

Concerning the learners' data we can make the following statements:

- The majority of learners participating respond immediately to the teacher reactions (more than 85%) modifying their original inaccurate structures or making another mistake, generating uptake.
- Learners repaired over 94% errors that received feedback. Certain types of TREs may encourage learners to 'notice' better interlanguage gaps between their erroneous utterances and the target language than with others. Negotiation through implicit teacher reactions as elicitation, metalinguistic feedback and repetition seemed to promote more repairs in contrast to recasts.
- Lexical repairs took place more frequently after forms such as elicitation and metalinguistic feedback rather than recasts. Phonological repairs occurred in higher numbers after recasts and explicit correction.
- Globally, recasts do not seem to produce efficiently learner awareness of a linguistic need or input-output mismatch as some authors have suggested (Long et al., 1998). Recast and explicit correction were the least effective teacher reaction moves in eliciting students self-repair. Only 34% out of 280 recasts

produced self-repair. We find episodes where learners possibly take some types of teacher negative feedback as “*red herrings*” (Mackey & Philp, 1998; Lyster, 1998).

- Elder learners (Year 6; 11 yrs.) generated more ‘uptake’ implying that they might be more aware of the usability of teacher reactions in self-repairing their productions than younger learners (Year 1; 6 yrs.). These results could be similar to those of Mackey and Philp’s (1998) study which suggested that adult learners do not ignore recasts as much as younger learners, relating this phenomenon to psycho-developmental factors. Learner competence in the T2 setting did not appear to cause more interaction and uptake. T2’s students self-repaired minimally, possibly due to the declarative recasts delivered by T2, which were maybe not perceived as negative feedback. In contrast, students with lower competence in the TL seemed to uptake more in T1 and T3 settings.
- We have indicated that possibly such longer learner responses could be due to: i) the general TL lower competence of students in that classroom year level and ii) the sustainability of moves in TREs towards the teacher’s goal to make the learner self-correct and learn from errors. In the case of the B School, learners produced more uptake forms since T3 compulsorily obliged them to self-repair at the end of TREs.
- Younger students respond more spontaneously to teacher reactions of their schoolmates’ deviant forms, possibly being unaware of the canonical implicit rules of the classroom. Students were not discouraged to participate in TREs and some learners were risk-takers in negotiating forms in T1 and T3 settings.

As regards learners’ responses

- Examining TREs using Aljaafreh and Lantolf’s Regulatory Scale reveals that, depending on the nature of teacher’s help, the learner may self-regulate aiming at self-repairing the deviant form using more implicit forms of feedback. In contrast, more explicit forms might ‘other-regulate’ learners in sociocultural terms and might not encourage them to self-repair. Hence, certain types of implicit teacher reactions (except recasts that are not perceived as such by learners) appear to scaffold better, to repair certain types of errors.
- Certain kinds of teacher reactions such as elicitation, acted as prompts to allow learners to practise target language structures by producing output and creating potential conditions needed for language acquisition. These forms might encourage learner hypotheses testing the target language forms.

- In social interactionist terms, TREs negotiation of form might promote pushed output for learners (Pica et al., 1989) and make students confront their errors when practising the TL. Nevertheless, the immediate and lasting, long-term repair effects of teacher reactions have not been discovered (Nabei & Swain, 2002; Mackey, 2006) but the evidence of uptake and what learners might do after teacher reactions could show whether learners could have noticed it.
- Providing the learners with time and opportunity for self-repair may benefit FL development. According to Long (1996), some implicit feedback forms such as recasts were more beneficial for SLA. Nevertheless, in this study, recasts did not promote self-repair in higher occurrences. Elicitations and metalinguistic feedback generated more learner uptake and repair.
- Possibly contextual variables such as student age, L1 background, the purpose of learning the target language and the goal of the class could shape TREs and yield different results in observational studies. In the present study, younger learners in Year 1 are more other-regulated according to the sociocultural theory. Nevertheless, the rest of learners depending on their FL competence displayed different levels of regulation in their ZPDs in the transcripts.
- Each TRE displays unique differentiated degrees of regulation and teachers seem to adjust to learner needs individually, according to their beliefs about teacher practice.
- Each TRE is distinctive but some implicit types of reactions like elicitations and metalinguistic feedback appear to encourage more scaffolding in T1 and T3 settings.
- Some types of recasts, such as the declarative ones, did not seem to promote learner self-regulation in the T2 setting and learner engagement in the TRE activities.

Limitations and Pedagogical Implications

Several points of this study might have implications for foreign language pedagogy and instructional practice. In these Senegalese immersion classrooms, learners receiving teacher elicitations and metalinguistic feedback appear to generate more uptake than those receiving recasts. The resulting outcomes might be useful to make teachers reflect about how their reactions might have effects on learner repairs. It could also help to raise awareness about ways of endowing learners with more opportunities to use the FL in face-to-face classroom interaction. Likewise, these results might encourage teachers to coach learners about the importance of teacher feedback (using the target language and codeswitching with the L1) in view of improving their foreign linguistic accuracy and self-repairing deviant forms. Special care should be

taken for creating environments that might support learner speech production in the FL and students learning to self-repair errors in order to get more involved in their learning. The outcomes among different classroom groups also suggest that teachers' reactions should be adjusted to the learner individual characteristics taking into account their FL proficiency levels and ages. In addition, the use of video in the data collection and analysis brings out the role of non-verbal feedback, which has been absent from earlier studies.

The present study highlights that future research should address why learners did not self-repair or show any sign of noticing it in any form of 'uptake'. Consequently, learner uptake should be further examined considering the value of 'attention' or 'noticing' (Schmidt, 1995) in intrapsychological terms. The developmental readiness of learners would also be a probe to investigate the potential acquisition of new target language structures (Mackey & Philp, 1998). The scheme might be adjusting teacher reactions under the forms of negative feedback to the appropriate learner individual developmental stages. In addition, in future research it would be necessary to assess the effect of teacher reactions on the long term. Likewise, the usability of 'uptake' in FL acquisition remains an empirical question that should be further assessed. However, the instruments for measuring this issue are not ready. On the other hand, it would be interesting to study variables like motivation and positive feedback and how they might have effects on learner uptake. Despite the study used triangulation of several *data* sources, there is a need for more empirical studies that cater for immediate introspective data from the research participants (i.e., teachers and learners) by using 'think-aloud' or 'stimulated recall' tools. Those procedures may allow us to know how learners might be noticing the gap of their incorrect utterances prompted by teacher reactions. In addition, there are still few studies that examine TREs from the participants' perspective and more studies of this kind should be carried out.

Conclusion

This study attempts to present research related to TREs by outlining multidisciplinary approaches and illustrating one case study taking place in differentiated educational immersion settings in one unusual context: the one of Senegalese International Schools. Outcomes of the present study seem to offer grounds for further research in that some variables might lead to optimal teacher reactions geared to learner self-repair and facilitating learning, scaffolding in TREs in particular, and learner 'uptake' in different learning environments. Nevertheless, any claims based on the present findings should be taken as tentative. By looking critically at the existing body of studies related to this study and the outcomes of the empirical case study, we become aware of the research gaps in this topic.

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