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Full title of Article: Interaction in the virtual world: An analysis of students' construal of pedagogic

subject positions in a 3D learning environment

Short title of the Article (for running head): Interaction in the virtual world

Word count (all inclusive): 7.996

Character count (with spaces): 51.346

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Abstract

This article discusses the results of an investigation on construal of pedagogic positions in a series of online interactions between two students performing learning activities in a three dimensional virtual learning environment. It aims at analyzing how students offer praise while performing learning activities in the absence of a teacher or mentor. Results show that while students were highly focused in the learning activities, they construe different pedagogic positions through their language behavior, taking more proactive or reactive roles. The main area of attitudinal language used was Appreciation and most evaluative language in the corpus targets the objects created by the students themselves, falling within the Composition subtype. Positive and Negative evaluation play important roles in the performance of the learning activity: Positive evaluation is used in the corpus to provide feedback on the improvements made in the world and manage conflict or reassurance; Negative evaluation serves two key functions: manage the revision of the work done and the control of the tasks to be performed. It is argued the understanding of pedagogic subject positions construal is an essential step for the elaboration of pedagogic strategies, including those which incorporate the extended potentials of new technologies.

Key words

Appraisal theory, evaluation, Systemic Functional Linguistics, educational technology, simulation, three-dimensional virtual environment

Interaction in the virtual world

An analysis of students' construal of pedagogic subject positions in a 3D virtual learning environment

1. Introduction

In this paper we discuss how a pedagogic subject position is constructed in three dimensional virtual learning environments by examining students offer of praise while performing learning activities in the absence of a teacher or mentor. We focus our attention in the language used by pedagogic subjects to express attitude. Specifically, we analyze students' perception of the quality of their overall work and the linguistic evidences of their shared feelings, tastes and normative assessment through chat interactions.

The study reported here is part of a broader research, called SIMUL@, developed between 2009 and 2011 (EDU2008-01479). SIMUL@'s aim was to analyze the effects of a three dimensional environment in the development of transversal competencies in undergraduate and graduate students. The three dimensional environment used to develop SIMULL@'s learning activities was OpenSim, an open source multi-platform, multi-user 3D application server. It can be used to create a virtual environment (or world) which can be accessed through a variety of clients, on multiple protocols. OpenSimulator allows virtual world developers to customize their worlds.

The data we analyze comes from the conversations in the virtual environment, conducted through chats. In the virtual environment, students can see or point at an object while talking. The texts produced during their interaction in the navigator offer "a material trace of semiosis in representing students' interests, perceptions, interpretations and values through engagement with a range of images, hyper and layered multimodal texts" (Jewitt 2008: 259).

In writing this paper we hope to demonstrate how a discourse analysis provided by the appraisal theory, of functional grammar inspiration, permits some analysis and interpretation of patterns of language in three dimensional learning environments. We hope to contribute to the elaboration of a pedagogic theory which takes language behavior as structured experience into account and accepts the challenges posed by scenarios of learning open by new technologies.

2. Theoretical assumptions

2.1 Pedagogic discourses and praise

Research developed at the intersection of semiosis and education domains of knowledge has come to develop accounts of language behavior in learning settings as structured experience, and of pedagogic discourse as social construction of experience (Christie 1999, 2005; Christie and Martin 2005; Whittaker et al. 2006; McCabe 2007). Christie (2005) suggests that a pedagogic discourse involves a 'moral regulation' of pedagogic subjects. Such a moral regulation has at least two levels. A first dimension refers to establishing what constitutes acceptable patterns of interpersonal behavior and a second one, which has to do with establishing particular behavioral patterns and methods of handling information, reasoning, thinking, arguing, describing and explaining. Together, these two dimensions of 'moral regulation' position pedagogic subjects through pedagogic discourses.

Analyzing classroom discourse from a functional perspective, Christie (2005:169) argues that "one of the most powerful means by which teachers shape the process of 'moral regulation' that occurs in classroom is through the ways in which they offer praise of particular courses of action." Attitudinal expression is thus a strong component of student-teacher communication in traditional educational settings. According to the author, "all successful teachers seem to make effective use of language that builds a very positive sense of the 'good' of some course of action taken with respect to the instructional field." (Christie 2005:169).

If we look beyond the traditional physical classroom, how is 'moral regulation' shaped in learning experiences taking place in computer mediated settings? The communication and educational landscape of the XXI century is rapidly changing. The internet has made many such changes possible, producing a kind of hothouse effect that seems to accelerate both the proliferation and the use of multimodal texts, and the variety of work, social, cultural and educational contexts in which people experience such texts (Unsworth 2008). New technologies offer different potentials for learning and at the same time require researchers to develop reflections at the intersection of semiosis and education domains of knowledge in order to re-think what it means to learn (Jewitt 2006). Nevertheless, "the affordances of computer-mediated applications that are explored are often superficial, focusing in attractiveness as a motivation tool rather than the affordances of the medium as a pedagogic tool" (Jewitt 2003).

Both learning and sign-making may be seen as dynamic processes which change the resources through which the processes take place and the people who are involved in the processes (Kress 2003). The use of 3D virtual worlds in education can change the nature of the learning experience because it can provide people with three types of experience: social experiences, immersive experiences, and creative activities (Vickers 2010). De Oliveira et al. (2012) argue 3D learning environments introduce a reality not comparable the traditional educational settings of the physical classroom. It is important both language and education researchers avoid transporting pre-existing interpretation models uncritically. Information and communication technologies require the design of a new pedagogical model that reconsiders every day thinking and learning practices.

For example, "the essential role of the teacher as 'in charge' of what is taught or learned, when it is taught or learned, how it is taught or learned, and, in particular, of how students' learning is evaluated" as described in Christie (2005:107) is something deeply questionable in experiences like that of SIMUL@. Praise has been described as a form of symbolic control that teachers exercise in

traditional settings. That may be true in learning experiences in which "teachers define the pace of activities in schools, establish the spatial dimensions that apply in adopting work practices and define periods of time in which activities are to be undertaken" (Chritie 2005:107). In experiences like that of SIMUL@, however, students can choose when and how often they enter the 3D virtual learning environment to develop the activities. They are responsible for the construction of their own world and also for the elaboration of their appearance. When it comes to 3D virtual learning environments the teacher may be missing or opaque. Appraisal theory may thus help us understand how pedagogic subject position is constructed by allowing analysis of subjective aspects of students' interaction.

2.2 Appraisal

Appraisal theory is an extension of Systemic Functional Linguistics (Martin 2003, 2003b, 2004; Halliday and Matthiessen 2004). Martin and Rose (2007: 25) define appraisal as "concerned with evaluation – the kinds of attitudes that are negotiated in a text, the strength of the feelings involved and the ways values are sourced and readers aligned". Appraisal theory is a tool for analysis of language behavior irrespective of grammatical boundaries, across a range of grammatical categories (adjectives, verbs and adverbs) and through grammatical metaphors (Halliday and Matthiessen 2004). It is thus a framework for mapping the construal of attitude in discourse.

The approach appraisal theory offers to attitude can be said to be a very encompassing one. It has been applied to analyze attitude in corpora as diverse as history textbooks used in the education of Chilean students (Oteiza 2003), transcribed conversations on AIDS conducted between Xhosa-English speakers in the Eastern Cape (Adendorff and de Klerk 2005), an editorial from a Hong Kong lifestyle magazine published after 11 September 2001 (9/11) (Martin 2004), the written reflections of teacher trainees who had been asked to built an electrically wired doll house as a class assignment (Mackay and Parkinson 2009), television news and e-tv from South Africa (Hubbard

2008), opinion articles in the British press (Rodríguez 2011) and terrorist threatening letters (Gales 2011). Appraisal theory offers researchers a system of options to classify emotions. Such classification should evidently not be taken as prescriptive or immutable. Rather, as suggested by Martin and White (2005), it is a hypothesis about the organization of the relevant evaluative meanings offered as we interact. It poses a challenge to those concerned with the development of appropriate meaning, a reference point for those who have alternative classifications and a tool for those who need something to manage the analysis of evaluation in discourse.

Appraisal co-articulates three systems: attitude, how they are amplified and their sources. The three main types of attitude are:

- Affect resources for constructing emotional reaction, registering positive or negative feelings of happiness, confidence, anxiety, interest or fear;
- Judgment resources for assessing behavior according to various normative principles, expressing admiration, criticism, praise or condemn; and
- Appreciation resources for construction of the value of things, involving evaluation of semiotic and natural phenomena.

Depending on how intensely we feel, attitudes can be amplified or hedged through the complementary dimensions of the system of graduation:

- Force resources to express degree of intensity, turning the volume of attitude expressed up or down through the use of intensifiers and attitudinal lexis; and
- Focus resources for sharpen or blur apparently categorical distinctions by making something that is apparently non-gradable gradable.

Apart from attitude and graduation, the source of opinions is an important variable we need to take into consideration when analyzing evaluations. Who are the evaluations coming from? Resources for attributing evaluation to sources are:

- Projecting sources resources to quote or report what other people say or think that making a text heterogloss (where the source of the attitude is other than the writer/speaker) or monogloss (where the source is simply the author).
- Modality resources for saying 'how probable' a statement is, setting up a cline between positive and negative poles.
- Concession resources to express 'counterexpectancy', acknowledging voices in addition to the speaker's or writer's own voice in discourse, and countering it.

There are two broad ways for the realization of attitude in discourse: inscribed and evoked. If it is inscribed, it is expressed directly, which means that the user explicitly encodes his/her meaning. When evaluation is inscribed, the analyst can identify lexical choices made in the text which can include epithets, attributes, circumstances, processes of different types (mental, behavioral, relational), modal adjuncts, nominalised processes and epithets, etc, which explicitly express some form of positive or negative evaluation. If, however, evaluation is evoked, it is done implicitly or indirectly. Therefore it is not explicitly encoded in the lexicogrammar of the language. The linguistic units employed are variable in length: they can be single words, as is the case with inscribed attitude, but they can also be much longer and less overt. Furthermore, they can be metaphorical, but need not be.

2.3 Learning affordances of Virtual Worlds

In the 2011 OCDE report Virtual Worlds: Immersive Online Platforms for Collaboration, Creativity

and Learning, it is stated that virtual worlds, particularly because of their interactive nature, can provide useful tools for education. The benefits of using 3D virtual for worlds for education have been largely explored but basically they come from the combination of online game technologies (e.g. multiplayer platforms, increased interactivity, and 3D visualization) which are said to enable rich and dynamic social interaction and collaboration among users.

Firat (2010) describes a 3D virtual world as a genre of online community that often takes the form of a computer-based simulated environment, where users can interact and communicate, create objects and take the form of avatars. Usually these avatars are represented as two or three dimensional graphics but they can take different representations and the 3D world can be a reflection of real world or an imaginary fantasy world. In these immersive worlds, communication among users may range from text, graphical icons, visual gesture or sound, to touch, voice command, and balance senses. To Dickey (2003), the use of innovative and unique educational opportunities in 3D virtual worlds offers innovative and unique educational opportunities for both traditional classroom environments and distance education. Three-dimensional virtual worlds offer the availability of different learning experiences that are not always possible to be replicated in a physical classroom (Dickey 1999). They can provide successful constructivist learning activities by allowing learners to interact directly with information from a first-person perspective (Dede 1995; Winn 1997), bridging the gap between experiential learning and information representation.

There are several models of 3D virtual learning environments. These range from replicas of reallife (RL) buildings and spaces, perhaps with the look and feel of a real campus, to creative or fantastic locations (Prasolova-Forland et al. 2006; Jennings and Collins 2007). Ridgewell et al. (2011) agree on the use of a 3D virtual world to help the learner visualize and think through the scenarios that may occur in an otherwise invisible medium. According to the authors, when using worlds as OpenSim, learners are given the possibility to construct a world; a 'thought space' in which concepts can be created as objects, visualized, observed and interacted with.

3. Study aims

In traditional educational settings, we have seen, teachers have an important role in the expression of attitude to exercise symbolic control over learners. The aim of this article is to analyze how students offer praise while performing activities in a 3D learning environment in the absence of a teacher or mentor. As structured experience, students' language behavior is observed as the construal of pedagogic subject positions. We attend to the subjective aspects of students' interaction in a three dimensional learning environment as they adopt stances towards both the tasks they are performing and those with whom they collaborate.

4. Methodological procedures

4.1 Research context and participants

72 students (average age 24,13; sd=6,23), from different educational fields, voluntarily participated in the activities proposed in the framework of the research project SIMUL@. Students' participation in this research consisted in performing a learning activity proposed by their teachers within the context of their study programs during the second semester of 2011. The two participants who generated the corpus of this present study are male, studying a Master in Marketing Direction by the time of their collaboration in SIMUL@. Student 1 is 23 and Student 2, 22 years old – their names are withheld for ethical reasons.

4.2 OpenSim: The interactional environment

The students performed activities in OpenSimulator. Each group of students received a desert island in the virtual environment, where they were supposed to build a marketing project. Students were instructed to use chat mode, instead of voice mode - voice can be finicky in 3D worlds and for that reason chat is still an extended form of interaction in these environments. Each time students logged in OpenSim, they were supposed to activate chat by clicking on a Sloodle chat object which transferred their chats and other activities to a Moodle space. Sloodle is a free and open source project which integrates the multi-user virtual environments of Second Life and/or OpenSim with the Moodle. Moodle is a Course Management System, a free web application that educators can use to create effective online learning sites.

The interactions between Student 1 and Student 2 were selected for this present analysis because these students were very disciplined in the activation of data recording, providing a fair amount of linguistic data of their (inter)actions in the navigator.

4.3 The learning activity

The group of participants, which includes the two students whose interactions compose the corpus of this present study, received instructions to participate as exhibitors of a new product in a trade show exhibit. They should elaborate a marketing plan that presented a creative component, including decisions regarding the design and production of the exhibit promotional materials; a financial component, including decisions on schedules, activity program and budget; and finally an infrastructure component, including decisions on the management of the exhibit space. Once their marketing plans had been elaborated, the students should interact in the virtual world to build their project.

4.4 The corpus

The series of chat interactions between Student 1 and Student 2 that became the corpus of this present study took place in 16 different online encounters between the 7th and the 22nd of May,

2011. The interactions remain half way between face-to-face and online interactions, displaying characteristics of both. Actually, a known consequence of the recent changes in the communication and educational landscape of the XXI century is that writing is moving in the direction of becoming a transcription of speech at the same time the screen is pushing writing in the direction of visuality (Kress 2003). The interactions here analyzed can be defined as avatar-to-avatar interaction, as opposed to face-to-face or online types of interactions. We may define an avatar-to-avatar interaction as an online synchronous interaction which mixes characteristics of oral, written and sign language, on the one hand, and that offers the speakers some sense of body presence in the three dimensional virtual interactional environment through their avatars. As general information on the corpus, it presents 2.110 tokens (running words) and 689 types (distinct words). Spanish is the main language of interaction. Both students are bilingual and some words in do appear in Catalan in the corpus.

4.5 Data coding and interpretation software

Our study made use of the software *Wordsmith Tools 5*, by Mike Scott [http://www.lexically.net/ wordsmith/] to obtain quantitative information from the corpus. Annotation was done manually. Each instance of evaluative language in the corpus was manually annotated according to appraisal theory system, as shown in Figure 1.

[Figure 1 about here]

5. Findings

The study of the corpus reviews 96 elements which have been coded as linguistic evidence of the realization of attitude, 10,42% having been coded as Judgment; 22,92% as Affect; and 66,67% as

Appreciation. The realizations have also been coded as Positive or Negative, Inscribed or Evoked, as explained in previous sections as can be seen in Table 1. In 48 instances of evaluative language, the students not only manifested attitudes of affect, appreciation or judgment, but they also expressed how strongly they felt about their targets of appraisal. Student 1 is responsible for 38 of such graduated instances, 30 instances being of graduation subsystem force and 8 instances of graduation subsystem focus. Student 2 is responsible for 10 instances, 8 classified under force and 2 under focus.

		% of Positive instances		% of Negative instances		
	Total of instances	Inscribed	Evoked	Inscribed	Evoked	
Affect	22	45,45	18,18	4,54	31,81	
Judgment	10	20	-	20	60	
Appreciation	64	35,93	3,12	34,37	26,56	

Table 1. Classification of evidences of Attitude in the corpus

If we do not attend to type of attitude, and focus our attention on whether evaluation is Positive or Negative, on the one side, and Inscribed or Evoked, on the other one, we find some interesting traits of the corpus under study, which can be viewed in Table 2.

Table 2. Positive or Negative versus Inscribe or Evoked distribution of instances in the corpus

	Inscribed	Evoked
Positive	35	6
Negative	25	30
Total	60	36

As shown in Table 2, positive evaluation in the corpus clearly tends to be inscribed, while negative evaluation is more evenly divided between inscribed and evoked, though slightly tending

to evoked. As we dig into negative evaluation in corpus, we notice that 70,91% (39 instances) of all negative evaluation in the data is Negative Appreciation, distributed among this system subtypes as shown in Table 3:

	Negative Appreciation			
	Inscribed	Evoked		
Reaction		2 1		
Composition	1	7 15		
Valuation		3 1		

Table 3. Negative Appreciation distribution of instances in the corpus

Composition is the subtype of Appreciation with more instances of negative evaluation. The realizations presented in examples 1 and 2 are instances of Inscribed Negative Composition taken from the corpus. It is interesting to observe how graduation system resources, highlighted in bold in the examples throughout the text, are applied by the study participants to intensify their evaluations, denoting Force. For easy of study, a translation into English is provided bellow each numbered example. Whenever necessary, contextual information will be provided between brackets to make excerpt understanding possible.

- 1. los veo como muy pequeños
- I find them [the Ipads] too small
- 2. como es que hay tan poca luz
- How come there is so little light
- 3. pues entonces la proporcion del taburete esta mal!
- Then the stool proportion is wrong!

In the above instances, the students express their evaluation of the artifacts they are building, openly criticizing them so they can improve their trade show exhibit and accomplish the learning activity they are performing. Their aim in examples 1, 2 and 3 is to highlight negative traits of the objects they have created so they can continue their improvement. In the following instances of Evoked Negative Composition, students are also trying to improve their trade show exhibit. However, instead of highlighting traits of the objects they have created, they call each other's attention to the job they still have to do. In example 4 we find another instance of the graduation system, this time denoting Focus, since the use of "the entire" aims at sharpening the listener's understanding of the word "building".

4. *todo* el edificio deberia tener suelo

The entire building should have a floor

5. le falta un algo que indique camino hacia nuestro stand

it needs something that shows the way to our trade show exhibit

6. oye, hay que poner otro taburete.

hey, we have to add another stool.

The analysis of Negative evaluation in the corpus shows it is aimed at the better accomplishment of the learning activity, Inscribed language being used to openly evaluate the quality, aspect, proportion, balance, size or number of the objects created, and Evoked language being used to suggest the creation of new objects. Again, graduation system overlaps with attitude through i) attitudinal lexis such as "perfect", that, without being combined with content words, denote the intensity of evaluation, which may be positive or negative; and ii) resources such as intensifiers, which serve to increase or decrease the degree of positiveness or negativeness expressed. Table 4 presents examples of Positive and Negative Composition Appreciation found in the corpus together with their frequency of occurrence in the corpus. In bold, we highlight graduation system instances.

Table 4. Instances of Positive and Negative Composition Appreciation in the corpus.

 Positive	Freq.	Negative	Freq.

Reaction	<i>Facil</i> (easy),	4	Xungo (dificult),	1
	perfecto (perfect 4),	2	<i>llamativo</i> (outlandish)	
	exacto (precise),	1		
	muy bien (very well),	1		
	<i>que atraiga la gente a entrar</i> (that attracts people to come in),	1		
	bonito (beutifull),	1		
	<i>de acuerdo</i> (all right).	1		
Composition	Alto (tall),	2	Muy grandes (very	1
	más cool (cooler),	1	big),	
	correctamente (correctly),	1	<i>muy pequeños</i> (very	1
	toda blanca (all White),	1	small),	
	<i>más vestido</i> (more dressed)	1	super brillante (super shiny),	1
	anaha (wida)	3	<i>poca luz</i> (little light),	
	uncho (wide).		más largos (longer)	1
				1
Valuation	<i>Muy importante</i> (very important),	1	<i>Da igual, ombre</i> (it doen't matter, dude);	1
	necesaria (necessary),	1	no es tan fácil (it is	1
	facil fácil (easy easy),	1	not so easy);	
	<i>se está usando mucho (it's</i>	1	a veces se puede y a	1
	very popular nowadays).	I	you can do it,	1

Table 5 presents the distribution of the 22 instances of Affect identified in the corpus, coded according to its subtypes Happiness, Security and Satisfaction, as Positive or Negative, and finally as Evoked or Inscribed instances of evaluation.

	Posit	Positive		Negative		
	Inscribed	Inscribed Evoked		Evoked		
Happiness	4	1	1	0		
Security	0	0	0	1		
Satisfaction	6	3	0	6		

Table 5. Affect distribution of instances in the corpus

The analysis of the four instances of Positive Inscribed Happiness reveals the students have used onomatopoeic words, like example 7 below, which expresses laughter, and smiling faces, and like in examples 8 and 9, to express approval, contentment or being at peace with each other regarding the development of the learning activity.

7. Jajaja

ahahaha

8. yasta todo lo k podemos hacer XD.

We did everything we were able to do XD.

9. XD como kieras XD

As you like it.

The Inscribed instance of Negative Happiness is a swearword one of the students used to express discontent while trying to perform a task and not being allowed to do it by the navigator. The swearword itself is an expression of dissatisfaction, which is Negative Affect, and what follows it is a Negative Valuation of the virtual environment, a type of Appreciation.

10. Ostia, es k aveces se puede y aves n.

Dammit, sometimes u can do it and sometimes u can't.

Observed through the lenses of graduation, swearwords are amplification of evaluation. Martin and Rose (2007:46) refer to it as "feeling which becomes so amplified, it explodes". According to the authors this is a kind of short-circuit which disengages amplification from what is being appraised and cuts loose as a swearword.

The only instance of Security, actually Insecurity, since it is Negative evaluation, was identified thanks to the punctuation used by Student 1. This student had been very much worried about improving the objects created, while Student 2 had resisted doing extra work. In a certain moment of the interaction, Student 2 demands his partner's evaluation of an object he had created, being judgmental of Student 1's attention to details. Student 2 also uses a smiling face to reduce the tension of his comment:

11. asi? le gusta a su majestad? xDD

Like this? Does it please your majesty? xDD

12. si.... k no me kejo tanto

Yes..... I don't whine so much

As we can see, the punctuation in this case reveals Student 1's reluctance and Insecurity, followed by an objection to the veracity of his partner's judgmental comment. Actually, when we turn to Affect subtype Satisfaction, it becomes clear Student 1 expresses more interest in the task then Student 2. All instances of Negative Satisfaction were uttered by Student 2, refusing to do extra work explicitly suggested by Student 1 or trying to convince his colleague it was already time to consider the activity complete. All instances of Negative Satisfaction were evoked, as can be seen in the following corpus excerpts, uttered by Student 2:

13. hemos dicho 4 paredes y un camino.

we said 4 walls and a way. [Refusing to add a floor to the stand building]

14. es k sino no acabamos tio.

Or we will never finish this, buddy.

15. yo tengo k vivir un poco tio.

I Have to live a Little bit, buddy.

16. lo dejamos asi entonces o qe?

Shall we leave it this way or what?

It will be relevant to turn to the system of source, composed by the subsystems of Projection, Concession and Modality. So we can understand how the study participants construe pedagogic subject positions, we should attend not only to what kind of appraisal they offer or what they choose to evaluate, but also who appraisal instances come from. In the corpus analyzed, there is no instance of Projection. As there are only two study participants taking part in the interaction and there is no quoting or projection in their discourse, we must assume Students 1 and 2 are the sources of all instances of evaluation in the corpus. We identified 5 instances of Concession, all uttered by Student 1. In example 17 we can see the conjunction 'but' (*pero*, in Spanish) being used by Student 1 to counter his own previous statement, giving Student 2 freedom to decide. In 18, Student 2 demands appreciation. In response, instead of giving negative appreciation, Student 1 chooses to make a Concession, again using the conjunction 'but', this time somehow disengaging himself from the negative evaluation given. Its seems in both cases, and in the remaining ones in the corpus, Student 1 finds himself uneasy to express negative evaluation and uses Concession to, having expressed his point of view, prevent an open dispute over aspects of the activity being developed.

17. deberian ser más grandes [los ipads], no crees? los veo como muy pequeños. **pero** como veas.

They should be bigger [the ipads], don't you think? but you tell.

18. Student 2 – blanco parece mas cool, n?

Student 1 – si pero no se si desentona....

Student 2 – white looks cooler, doesn't it?

Student 1 – yes, **but** I'm not sure if it matches.....

Within the subsystem of source, we coded 163 instances as linguistic evidence of the realization of Modality, distributed among the two participants as shown in Table 6. Instead of coding the corpus as for cline of obligation or probability of statements, we chose to observe the roles taken in the exchange (giving or demanding) and the commodity exchanged (goods-and-services or information). As Halliday and Matthiessen (2004: 107) point out, "even these elementary categories already involve complex notions: giving means 'inviting to receive', and demanding means 'inviting to give'.

Table 6. Giving or demanding, goods-&-services or information

	Commodity exchanged					
	Goods-&-services			Information		
Role in exchange		Student 1	Student 2		Student 1	Student 2
Giving	Offer	1	1	Statement	65	26
Demanding	Command	9	7	Question	42	12

According to Halliday and Matthiessen (2004), the four primary speech functions 'offer', 'command', 'statement' and 'question' match a set of desired responses. They refer to such 'desired responses' as 'expected', if they are acceptance of an offer, undertaking of a command, acknowledgment of a statement or answer to a question; or 'discretionary', if they are rejection of an offer, refusal of a command, contradiction of a statement or disclaimer of a question. In the

corpus, we found 11 instances of expected responses, like example 19, and 1 instance of a discretionary response that can be seen in example 20. In this last instance, Student 2 contradicts Student 1's statement of the amount of work which still needed to be done.

19. Student 1 – vale, que te parece así????

Student 2 – perfect

Student 1 – OK, what do you think now????

Student 2 – perfect

20. Student 1 – falta un caminito desde la entrada hasta el stand y un techo!!!!!!! de la feria en general

Student 2 - que va ombreee

Student 1 – it needs a little way from the entrance until the stand and a ceiling!!!!!!! To the entire stand building.

Student 2 - not at all, dude

It is interesting to notice however, that many of the responses in the corpus are nor expected neither discretionary. They are 'unexpected', to put it some way, forms of responses. Silence is a very frequent form of unexpected response, as can be seen in example 21. In the absence of a response from Student 2, Student 1 answers a question he himself had asked, then he goes on to make an offer, which is also taken with silence. He continues making a statement and finishes with a question, waiting for some form of feed-back from his colleague.

21. pero entonces que puedo hacer yo? Mira, podemos hacer una cosa uno que ponga suelo a **todo** el edificio y el otro haga un **caminito** encima okis? **todo** el edificio deberia tener suelo y con eso acabamos **de una vez** k et sembla? but what can I do, then? Look, we can do it like this one of us makes the floor in the entire buuilding and the other one makes a little way on it, ok? The entire building should have a floor and with this we'll be all have finished What do you think?

Student 2's response to this series of speech functions modulated through Focus resources highlighted in bold, is a statement of Negative Satisfaction, presented in example 13 above.

Apart from silence, we also found other forms of unexpected responses. When they are answered, more often questions receive another question, a refusal, a command or a statement as a response than a form of rejection or acceptance. In example 22, we can see how student 1 asks a question and receives a command as a reply:

22. Student 1 - k propiedad tiene que tener esto?

Student 2 - cuidado no te karges nada pork no es muy difícil k te karges el stan aciendo esto.

Student 1 – what properties should this have?

Student 2 – watch out don't you ruin anything cause it is not difficult to ruin it all by doing this.

Here, instead of answering Student's 1 question, Student 2 uses Evoked language to express doubts about Student 1's capacity to edit the exhibit show characteristics. It encodes Social Sanction to Social Esteem, within the system of attitude. This type of interactional pattern seems to reveal a same-level hierarchical relationship between the participants. It is unlike students would respond their teachers' questions with a command.

The analyses of the subsystem source shows the study participants construe pedagogic subject positions identifying themselves as sources of the evaluations uttered. Student 1 uses Concession as a strategy to express Negative Appreciation while preventing open dispute over aspects of the

activity being developed. He both gives and demands information much more frequently than his partner. Student 2 uses silence and discretionary responses to limit the amount of work to be done.

Finally, if we turn back to the Judgment system, we find 10 instances of evaluative langue directed at the expression of attitude towards behavior, a few of which have been mentioned before. It is worth noting that students have used judgmental language to sanction themselves or one another. As an example of self sanctioning, Student 1 concludes a series of indications of necessary improvements in the objects they had created, apologizing to a certain extend for being so perfectionist.

23. yo k se. k gasto mucho teclado.

I don't know. I'm using too much keyboard. [Meaning I've spoken too much]

In the following example, on the other hand, Student 1 indirectly sanctions Student 2, who says he is done for the moment because he wants to go bicycling. Student 1 uses Evoked language to express his disapproval of his colleague's behavior, stating he too would like to go bicycling, but will not, since there still is work to be done.

24. pero tu tira. ya hago yo. Aunk tmb m kiero ir en bici. k a mi tmb m gusta k me de el aire.

you can go. I will do it. Though I want to go bicycling too, cause I like to breath fresh air too.

In the last example, Student 1 complains about the appearance of Student 2, that is, what could be seen of his avatar, arguing it was not pleasant not to see him properly. In this final example, Student 1 uses attitudinal language to make a negative statement of Normality, clearly commanding his colleague to present himself in a usual way so they could go on with the activity.

25. oye sal y vuelve a entrar que no veo tu cuerpo y es muy chungo porque no se donde estas.

Hey, log out and log in again, cause I can't see your body and it is weird not knowing where you are.

6. Discussion

The analysis of the appraisal content of the interactions in the corpus of this present study reveals that, while performing the learning activities in the three dimensional virtual learning environment, students were highly concentrated in the task performance involved in a same-level hierarchical relationship. They construe themselves differently as pedagogic subjects. Student 1 construes himself as more proactive, strategically organizing, evaluating and making concessions in order to manage the best accomplishment of the learning activity. While also committed to the development of the activity, Student 2 construes himself as more reactive, using silence and discretionary responses as strategies to limit the continuity of the activity development.

The main area of attitudinal language used was Appreciation, which relates to the evaluation of the aesthetic experience. Most evaluative language in the corpus targets the objects created by the students themselves, falling within the Composition subtype. In other words, among the many different options of things they could evaluate, like each other's behavior or the learning activity itself, students' choices were to evaluate the world they were supposed to create and how pleasant, well proportioned or correct the objects in this world were. Those linguistic options are evidence of students' commitment to the development of the learning activity. While interacting in the navigator, they were both focused in the performance of the task they had been assigned to do. Yet, as we have mentioned before, they construed different pedagogic positions, Student 1 being more proactive and Student 2 more reactive.

It is interesting to notice both Positive and Negative evaluation play important roles in the performance of the learning activity. Negative evaluation targets the improvement of the objects created in the world. It is often used to express students' evaluation of the artifacts they are

26

building, openly criticizing them so they can improve their exhibition trade show and accomplish higher levels of quality of the learning activity they are performing. Students use Negative evaluation to highlight traits of the objects they have created that still need to be improved. They also use Negative evaluation to call each other's attention to the job they still have to do. Negative evaluation in the corpus studied can be said to basically serve two key functions: manage the revision of the work done and the control of the tasks to be performed. The analysis of Negative evaluation in the corpus shows it is aimed at the better accomplishment of the learning activity, Inscribed language being used to openly evaluate the quality, aspect, proportion, balance, size or number of the objects created, and Evoked language being used to suggest the creation of new objects.

Positive evaluation is used in the corpus to provide feedback on the improvements made in the world and manage conflict or reassurance. It is closely connected to Negative evaluation in basically two ways. First, a series of Negative evaluations of an object would not finish until students reached a shared level of satisfaction regarding its appearance, proportion or relevance. Second, a Negative evaluation which indicated work that still had to be done would be uttered in different moments or encounters until students were able to agree, using Positive evaluation, either on the performance of the suggested task or on the irrelevance of the improvement proposed.

Another aspect worth mentioning is that technology seems to be transparent to the students most of the time, since they only occasionally produce evaluative language targeted at the environment. Nor do they evaluate the task they have been assigned. While interacting in the navigator, as has been said before, students were highly concentrated in the performance of the task they had been assigned to do. And yet, they seem to be comfortable in the virtual environment. For both participants, this was the first time they interacted in a three dimensional world. Besides, they are aware their interactions were being recorded. However, neither the novelty of the environment nor the fact they were being watched over affects the naturalness of their speech interactions. That becomes evident in the use of swearwords, paralinguistic symbols like smiling faces, laugher and an economic writing style typical of written online interaction which uses letters to evoke sounds and save part of the spelling.

7. Conclusion

In this present article we analyze the attitudinal language used by two students while performing a learning activity in a three dimensional virtual learning environment. This is an avatar-to-avatar interaction: an online synchronous interaction which mixes characteristics of oral, written and sign language, on the one hand, and that offers the speakers some sense of body presence in the virtual interactional environment through their avatars.

The analysis of the appraisal content of the interactions in the corpus of the study reveals that students were highly concentrated in the task performance. While developing the learning activities in the three dimensional navigator the study participants elaborate a same-level hierarchical relationship. The main area of attitudinal language used was Appreciation and most evaluative language in the corpus targets the objects created by the students themselves, following within the Composition subtype. Students' interactions can be said, on the one hand, to be strong evidence of their commitment and motivation to the development of the learning activity, and, on the other hand, of the construal of different pedagogic positions: one being more proactive, using language to strategically organize, evaluate and make concessions in order to manage the best accomplishment of the learning activity; another being more reactive, using silence and discretionary responses to limit the amount of work to be done.

Even though they construe different pedagogic positions, both students were focused in the performance of the task they had been assigned to do. Both Positive and Negative evaluation in the corpus reveal students' engagement with the learning activity, combined with a sense of naturalness. Students show a high level of flexibility and adaptability, taking the immersive environment as if it were an ordinary interactional environment for them.

A limitation for the use of 3D worlds in education, apart from the obvious divide which exists between those who have access to new technologies and those who do not, may be the difficulty of integrating them in traditional formal educational settings. Such difficulty is rooted in the relative inertia characteristic of traditional educational settings. When educators decide to use a new tool, they must be open to re-thinking the entire learning processes, and questions of teacher authority, student freedom to decide time, pace and content of the learning activities arise. Sefton-Green (2004) points out that computers and other aspects allow children and young people a wide variety of activities and experiences that can support learning, yet many of these transactions do not take place in traditional educational settings.

Pedagogic models which do not help teachers deal with this new class of activities and experiences need to be broadened so as they comprehensively refer to the practices of the education and communication landscape of the twentieth first century. In this study we have seen how one student construes a proactive pedagogic position while another one construes a more reactive one. The understanding of pedagogic subject positions construal, we argue, is an essential step for the elaboration of pedagogic strategies. If teachers are able to value the types of interaction we have analyzed here, they will create activities in a much more informed and conscious way.

We have adopted a Systemic Functional Linguistics approach that allowed us to concentrate on the use of language. A limitation of this present research is that the interaction through avatars does provide speakers with a presence that differentiates immersion in 3D worlds from traditional online

29

text-only chats. Such differences are not specifically accounted for in the present study and need to be developed in further research.

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