

MEANINGFUL LEARNING: USE OF CONCEPT MAPS IN FOREIGN LANGUAGE EDUCATION¹

(Aprendizagem significativa: uso de mapas conceituais no ensino de Língua Estrangeira)

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Abstract

This paper deals with concept maps as an instructional tool to foster the construction of knowledge in Foreign Language Education classes, in an attempt to help students organize, interact, and share meanings derived from their reading of literary texts. The theoretical framework includes meaningful learning theory (Ausubel 1963,1968; Novak, 1977; Novak and Gowin, 1984) the monitor hypothesis (Krashen, 1981; 1995) and Gowin's views on education (1981). The subjects of this study were college students of languages in their seventh semester of English as a Foreign Language, taking the discipline American Literature. The teacher-researcher aimed at verifying the effect of the use of concept mapping in students' performance related to reading understanding of poems by William Carlos Williams, Carl Sandburg, and Emily Dickinson. She wanted to re-confirm her hypothesis that students' engagement in thinking+feeling while drawing their concept maps³ facilitated learning because of the relations they established with what they already knew, which they externalized in linguistic and pictoric mental images. She also wanted to suggest that these activities helped non-artificial students' interactions in the target language, since knowledge representations enhanced linkages between the new concepts, or of old ones in new contexts, to their personal experience, or prior knowledge. Thus, this article suggests that learning of poems and literature can get closer to the students's reality and become more meaningful to them.

Keywords: meaningful learning; concept mapping; autonomy; learning environment; interaction; student-centered.

Resumo

O artigo aborda mapas conceituais como instrumento de ensino e aprendizagem que favoreça a construção do conhecimento em aulas de língua estrangeira, num esforço para auxiliar os alunos a organizar, interagir e compartilhar significados oriundos de suas leituras de textos literários. O arcabouço teórico do estudo fundamenta-se, principalmente, na teoria da aprendizagem significativa (Ausubel 1963,1968; Novak, 1977; Novak and Gowin, 1984), buscando subsídios, também, na hipótese do monitor (Krashen, 1981; 1995) e nas ideias de Gowin (1981). Os participantes desse trabalho foram estudantes universitários, em seu sétimo semestre do curso de Letras Português-Inglês, cursando a disciplina Literatura Americana. A professora-pesquisadora teve como objetivo verificar o efeito do uso de mapas conceituais no desempenho dos alunos em relação à compreensão da leitura de poemas de William Carlos Williams, Carl Sandburg e Emily Dickinson. Buscava uma reconfirmação da

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³ At the time of the study, cmap tools were still on the make, so that students used either hand drawings or the resources of Windows.

hipótese de que o envolvimento dos estudantes em pensar+sentir+agir, enquanto desenvolviam seus mapas conceituais, facilitaria a ocorrência de aprendizagem através das relações estabelecidas entre o conhecimento que já tinham e aquilo que lhes configurava ainda como conhecimento/informação nova. Tais relações externalizavam-se como imagens mentais de cunho linguístico e pictórico. Além disso, a professora-pesquisadora objetivou sugerir que essas atividades auxiliavam o desenvolvimento de interações não-artificiais (ou naturais) na língua-alvo, nesse caso, em inglês, uma vez que essas representações do conhecimento produziam um aumento de ligações entre novos conceitos, ou entre conceitos já familiares em novos contextos, as suas experiências pessoais e seus conhecimentos prévios. Esse artigo, assim, deseja sugerir que a aprendizagem de poemas e de literatura pode se aproximar mais da realidade dos alunos e, dessa forma, tornar-se mais significativa para eles.

Palavras-chave: aprendizagem significativa; mapa conceitual; autonomia; contexto de aprendizagem; interação; ensino centrado no aluno.

1. Initial remarks

Students bring to the learning task something of their own world views that they might want to share with peers and teacher. New concepts can be difficult to relate to the knowledge they already have, so mediating activities such as concept mapping and sharing meanings about these tasks can help promote meaningful learning, since they seem to facilitate the establishment of linkages between what the learner already knows and new concepts and meanings. Thus, concept maps seem to facilitate the externalization of knowledge students have constructed and organized in their cognitive structure.

The underlying idea in this article was to get learners involved in feeling, thinking, and sharing meanings about the poems while using the target language (English) in their interactions. This has always been a major difficulty in foreign language classes because students either monitor themselves constantly when trying to communicate in the foreign language, or end up using their native language when dealing with their own feelings. Quite often, students are so much afraid of making mistakes, that they do not express themselves and keep their thoughts and feelings to themselves (Krashen, 1981).

As the teacher-researcher had already carried out experiments (Moreira, 1994) using concept maps as tools to achieve meaningful learning (in similar situations with favorable results in terms of reducing monitor use), she decided to use them again, this time relating them to dealing with the natural⁴ expression of feelings and thoughts through the drawing of concept maps. She believed that by engaging students in thinking about their feelings linked to what they had read, and by sharing those feelings and thoughts with their peers (what they had seen or heard or smelled or felt with their *mind's eye*), they would be better prepared to get to the meanings originated from the texts. The students had constructed those meanings in their cognitive structure, and they were encouraged to link them to their own life.

This autonomy to *learn how to learn*⁵, in which the teacher works as a guide, tends to lead to the occurrence of meaningful learning. Both because it results from the students' own processes of knowledge construction, and because this construction happens in a learning environment—as close as possible to Krashen's idea of a natural classroom—that emphasizes the importance of the students' prior knowledge and it starts from there.

⁴ Krashen's thesis of the natural approach to language learning and teaching.

⁵ Novak & Gowin, 1984.

These particular students had never had any experience with using the foreign language outside their classes. At the time of the study, they had had approximately four hundred hours of English as a Foreign Language, distributed in sixty-hour terms, along their secondary school and college years. This amount of hours could mean that they had a fair command of the English(EFL). However, as their language classes had been compartmentalized in programs aiming at discrete items (mostly decontextualized grammar), they seemed to know *about* the language(rules, patterns, and facts), without knowing *how to use* it in context. Furthermore, they were not fluent, that is, they presented difficulties in expressing themselves in classroom interactions since they were too conscious about the possibilities of making mistakes, when verbalizing thoughts and feelings.

2.Discussion

2.1 Mental representations and concept maps

The teacher-researcher decided to work with the mental representations the students had built while reading the texts. These images should embody things people say to themselves in their minds, as they are used as a means for the conscious manifestation of thought (Jackendoff, 1994). Students read the poems; thought about what they had read; and talked about the images they could see in *their mind's eye*. After this interaction with their peers about this imaging—what they had seen, heard, tasted, and/or felt—while they were reading, the students, individually expressed their views on the poem with a concept map—an external representation that is a combination of linguistic (with propositional links) and pictorial or diagrammatic symbols used to re-present something for someone (Eisenk and Keane, 1990, p. 182).

Imagery expressed in concept maps aimed at helping students to assess meanings related to the poems. The hypothesis was that the formation of images linked to the readings could help learners feel more knowledgeable about the content and form of the literary texts. They could get to the information files of words, images, and propositions stored in their memory, while involved in representational thought (Sternberg, 1996).

A concept map is a heuristic that allows for the hierarchical structuring of knowledge contained in a text. These concepts and their relationships can be hierarchically organized to build up knowledge, which is a human construct (Gowin, 1981), and has attached to its structure the idea of all the work (thinking+feeling+acting)that has been done to attain such knowledge.

As instructional tools they offer students and teacher "a way to help students see the meaning of learning materials"(Novak and Gowin, 1984, p.2). Students can feel at ease to *learn how to learn* without the usual classroom anxieties caused by the dichotomy of right-wrong, or true-false situations, by testing their hypotheses about a text based on their prior experiences and world views (Brown, 1994), emphasizing a process of creative construction.

2.2 Working with concept maps

Three poems are presented here as examples of how classroom activities have been approached in this EFL environment: “The Red Wheelbarrow” (William Carlos Williams),

“Fog”(Carl Sandburg), and “To Make a Prairie” (Emily Dickinson). For each poem the teacher-researcher chose, at random, there were two maps drawn and explained by two students, so that readers can perceive the differences in representing reality derived from the same text. Each map is followed by the student’s comments on personal experience and on the organization of the map.

Students read the poems individually, then, in pairs, discussed their extensional (denotation, objective, social) and intensional (connotation, subjective, personal) meanings (Postman and Weingartner, 1969, p.107) . They talked about the mental representations they had constructed for each of the poems. Some of them were analogical and made out of sensorial images: colors in contrast, smells of the earth fresh and soft with rain, smell of wet wood, raindrops dripping on the roof of houses and chicken coops, noises of wheels in a wheelbarrow and an ox or a horse cart, the ‘voices’ of chickens, the smell of chicken feathers (“The Red Wheelbarrow”), the absence of sound related to little cat feet and haunches, the moisture of the air and the muffled sounds of the harbor and city (“Fog”), a prairie, clovers, and bees, the smells and sounds of Spring and Summer (“To Make a Prairie”).

Some were propositional and dealt with the ideational content of the poems (propositions they had in their minds related to the poem, which often created new instances of it). They were engaged in seeing things with the *mind’s eye* and in verbalizing to each other their thoughts, which were based on their feelings and sensorial perceptions of the reality represented in the poems and in their cognitive structures. Following these discussions, students drew individual concept maps for the poems, and shared them with their peers. These negotiations of meaning emerged from the externalization of the students’ mental representations of knowledge and led them to further expansions of the concepts that made up the poems.

2.3 A sample of learners’ concept maps and comments⁶

These six examples of concept maps were randomly selected by the teacher-researcher who picked them from a file containing the thirty-six maps and comments related to the three poems. The poems were chosen because of their length and vocabulary together with their imagistic properties.

2.3.1 The Red Wheelbarrow by William Carlos Williams

So much depends upon a red wheel barrow glazed with rain water beside the white chickens

⁶ As the reader will notice, concept maps presented here have quite a similar format: according to the students, this was the easier way to draw them with Word,

2.3.1.1 A concept map

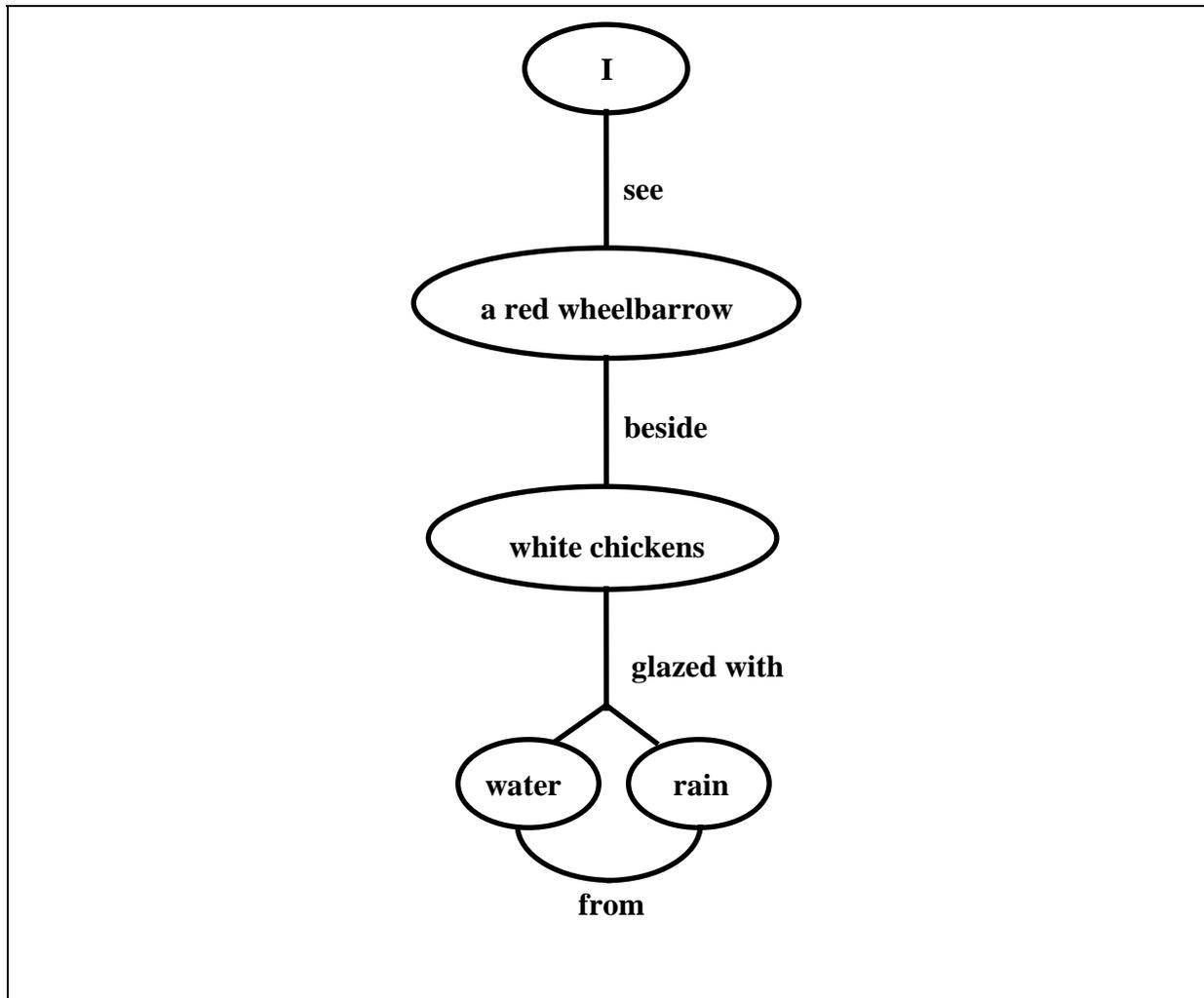


Fig. 1 : A concept map for “The Red Wheelbarrow” (W.C. Williams) by Student A. English VII.

Student A presented her map saying that, although there was no reference to any person in the poem, she decided to use this pronoun ‘I’ that would represent her as a reader and seer of the text. She did not go any further in personalizing her feelings about it because, she said, the most important thing in the poem was its visual image and the impact created on the reader (“I”), who could also see and feel it. She mentioned the everyday elements of this picture: a wheelbarrow, some chickens, and rain. These would pass unnoticed if it were not for their colors, red, white and the lacquerlike brilliancy of rain, which added new meanings to the red wheelbarrow. According to Student A, water and rain, although less important than the wheelbarrow and the chickens, can touch this poem—a painting of a particular world—with softness and some blur, or with an accentuated clarity, depending on the mood of this ‘I’ who perceives and feels the poem.

2.3.1.3 A concept map

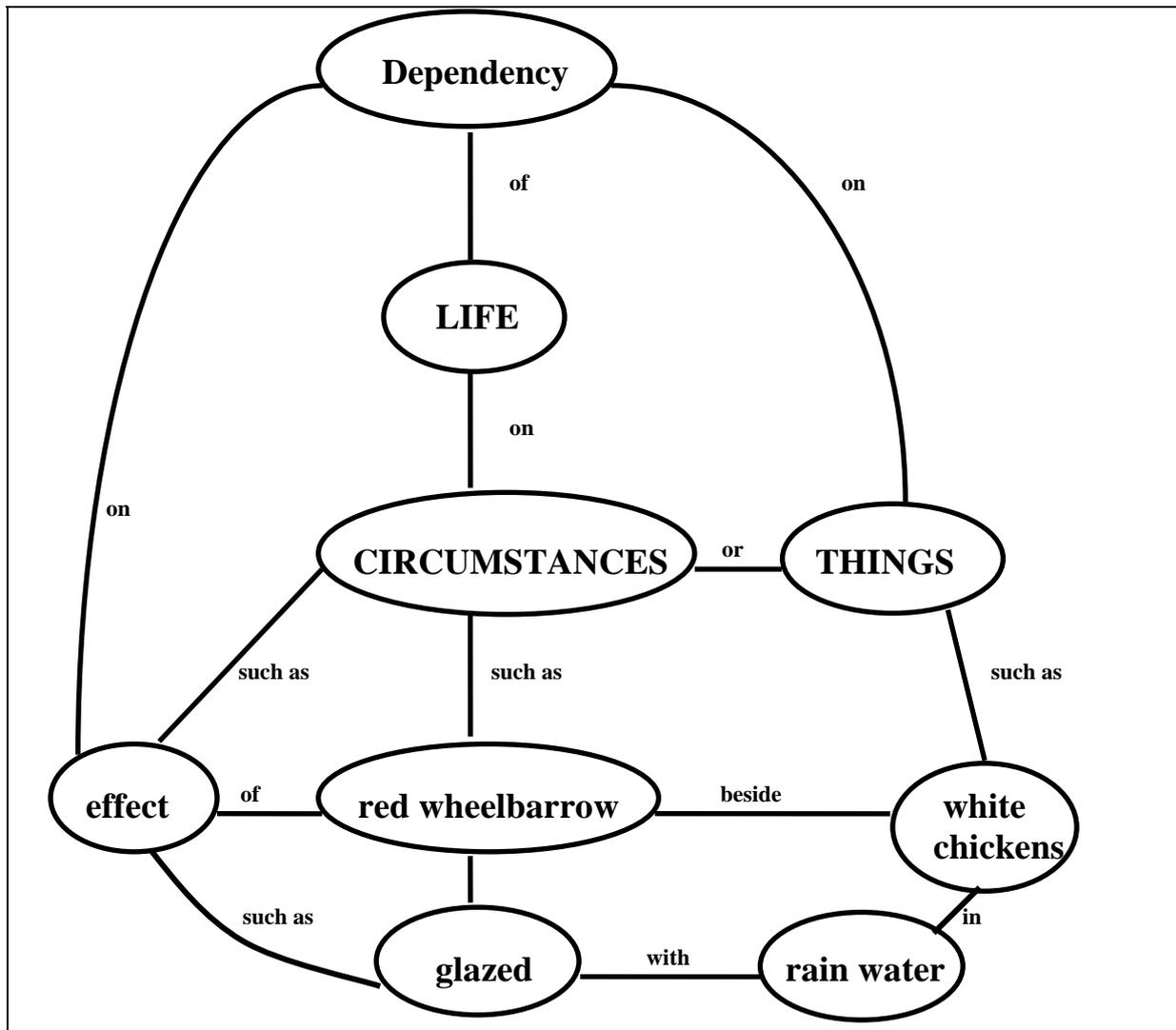


Fig. 2 : A concept map for Relativity of things in “The Red Wheelbarrow” by Student D. English VII

2.3.1.4 Comments

Student D introduced her map to her peers and explained that it represented her comprehension of the poem in its basic elements—a wheelbarrow, chickens, rain water, and a glaze—at the last and next to the last horizontal axes of the map. This was due to the fact that, for her, they were there to create an image, or a profusion of images, in which a non-sophisticated object, a very humble animal, and a common natural phenomenon—rain—in convergence produced a powerful effect. She added that the concept ‘life’ might appear as more inclusive and important than ‘dependency’, though it was the permanent state of dependency, or relativity, of things that could make the same elements or passages of our lives wonderful or miserable. The lack of the juxtaposition of the colors red and white, of something lifeless and something alive, of lustre and opacity would have made ‘life’ different. They represented ‘circumstances’ from which we can establish the perspectives of life/world that are at the core of the meanings we are to build.

2.3.2 Fog by Carl Sandburg

The fog comes
on little cat feet.
It sits looking
over harbor and city
on silent haunches
and then moves on.

2.3.2.1 A concept map:

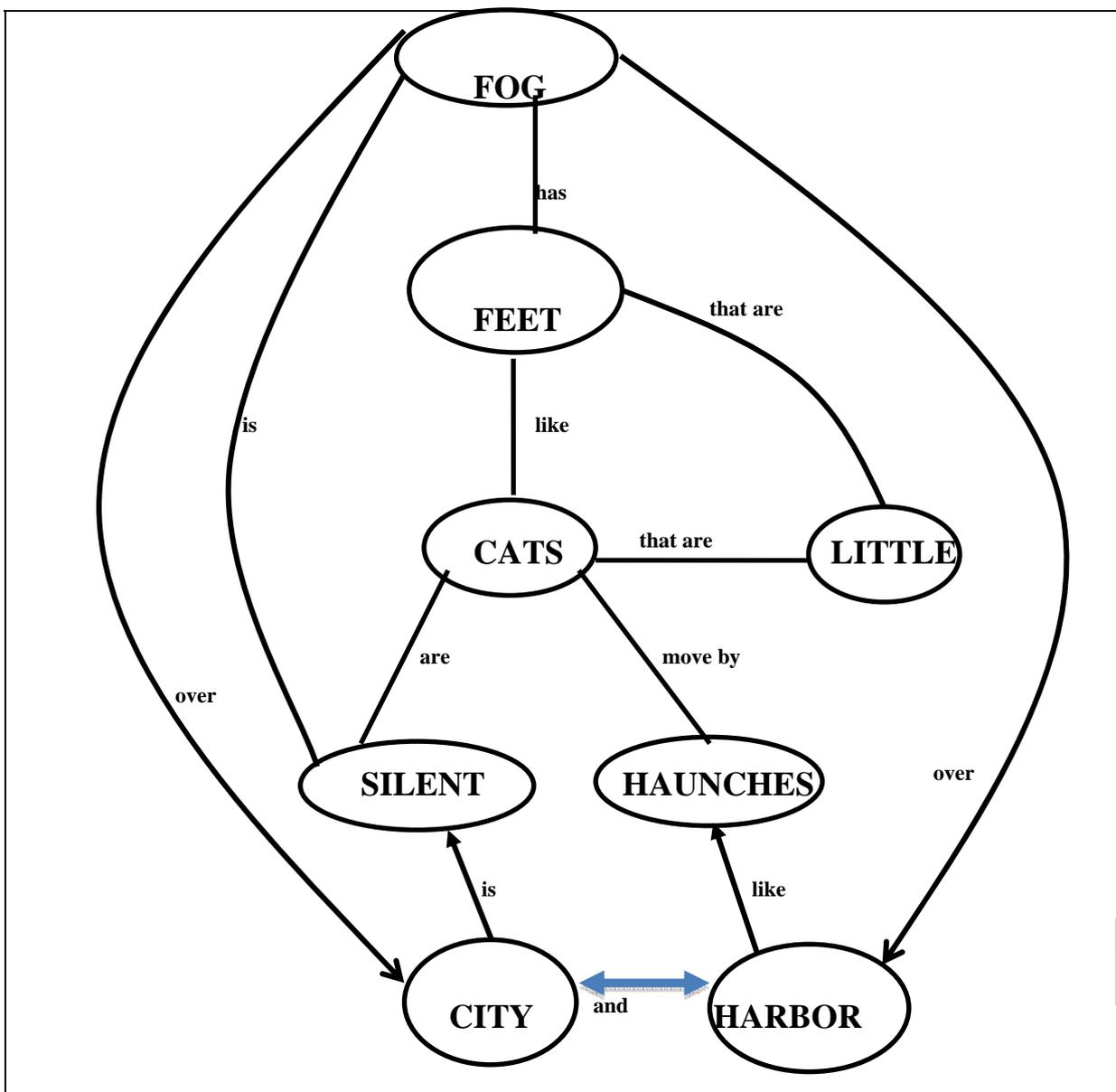


Fig. 3 : A concept map for “Fog”(C. Sandburg) by Student A. English VII, Unisinos.

2.3.2.2 Comments

Student A stated that, in her images about the poem, she saw little cats because of the distance from which she ‘saw’ them, immersed in the morning fog. She was aware that C. Sandburg referred to the size of feet and not to cat size. Nevertheless, the cats emerging from the poem, in her mind, were small. Fog is like a cat: it moves silently and in haunches. Although she did not include in her map a concept to represent a body of water – lake, river, sea – she pointed out there was the idea of water embedded in the concept ‘harbor’, and that she could also feel the presence of boats and ships anchored to the harbor, or approaching it amidst the silence and blurriness of the fog. Besides, in her view, the poet was portraying perhaps a big city near the water, but his perspective of fog , city, and harbor could be applied to her town, although it did not have a harbor nor was big.

2.3.2.3 A concept map

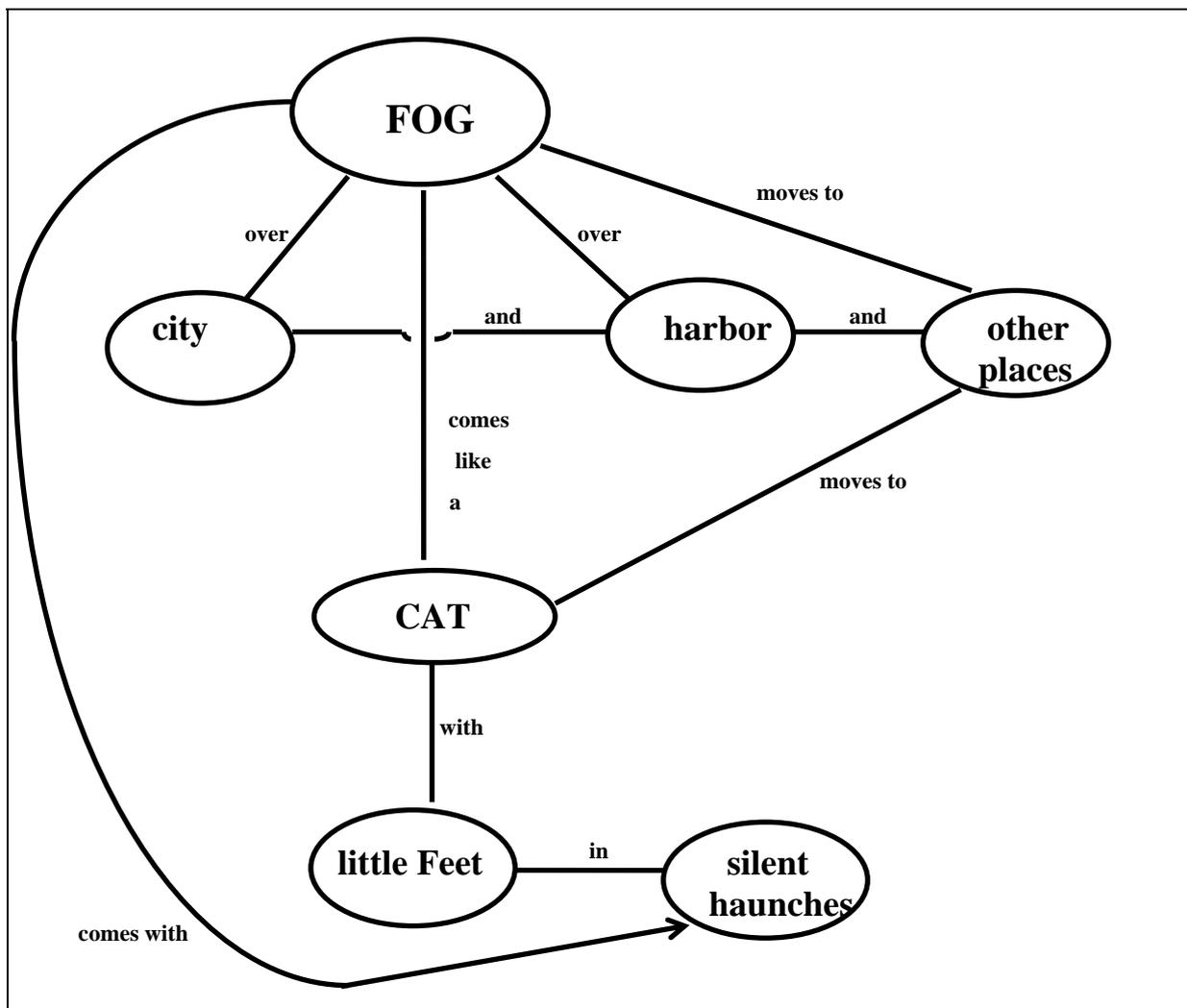


Fig. 4 : A concept map for “Fog”(C. Sandburg) by Student D.English VII, Unisinos.

2.3.2.4 Comments

Undoubtedly, 'fog' is at the center of the poem, so, it has to be the most important and inclusive concept in this map, according to Student D. It is fog that perpasses not only the harbor and the city, but other places, as well. In these 'other places', the student included herself on a Winter morning, standing at a bridge overlooking her village and letting the fog enter herself and bring back memories of sounds or voices and aromas of the past. She said that the comparison with 'cat' was relevant to the images the poem could create in the reader because all cats move in silence. When fog comes, in her perception, it muffles ordinary sounds making them less present and vivid. It transforms our perception of the landscape visually and orally. Fog, in her opinion, could also mean something that comes to our lives and, at least for some space of time, does not allow us to have a rather clear perception of the reality of our own inner/outer environment.

2.3.3.1 To Make a Prairie by Emily Dickinson

To make a prairie it takes a clover and one bee,--
 One clover, and a bee,
 And revery,
 The revery alone will do
 If bees are few.

2.3.3.2 A concept map

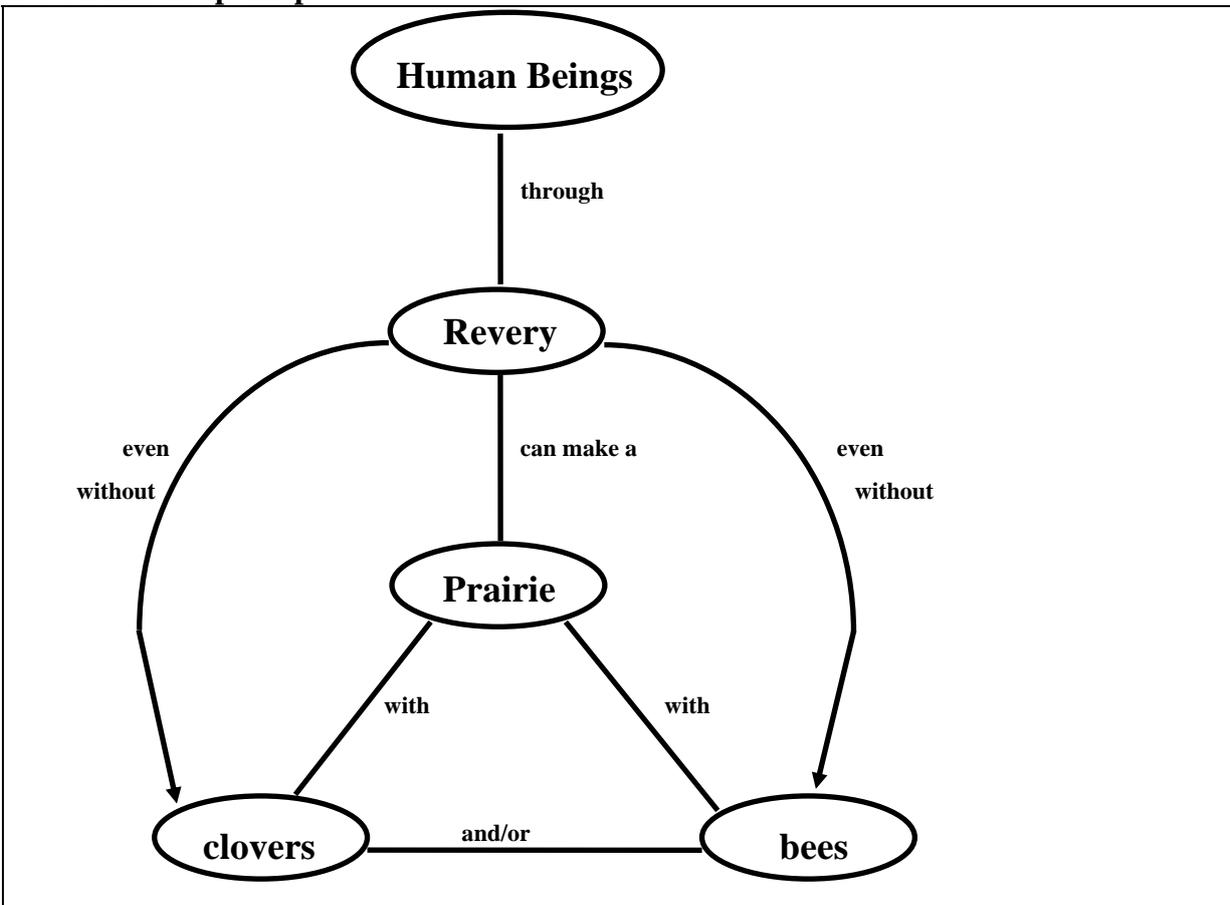


Fig. 5 : A concept map for "To make a Prairie"(E. Dickinson) by Student D. English VII, Unisinos.

2.3.3.3 Comments

Student D started her presentation with comments about the concept ‘human beings’ which is not explicit in the poem. Nevertheless, it is the most inclusive one and underlies the other four concepts. ‘Revery’ is a noun that designates a mental state through which persons can create new realities and images of reality. She continued stating that it was through revery that we can survive the harshness of daily life and that, even in the absence of clovers and bees, we can find ourselves a special mental place of peace and harmony, such as a prairie. There is a very strong relationship among ‘prairie’, ‘clovers’, and ‘bees’ because together they can represent Spring or Summer and the movements and the joys of life in the honey originated in the convergence of these three elements. The message here, according to her, is that, no matter what they might live through, human beings always have the possibility of revery. The images she produced while reading the poem, or thinking about it, were connected with the colors green, yellow and blue and had to do with visions of fields and open spaces, the sky, flowers, bees, and the sun.

2.3.3.4 A concept map

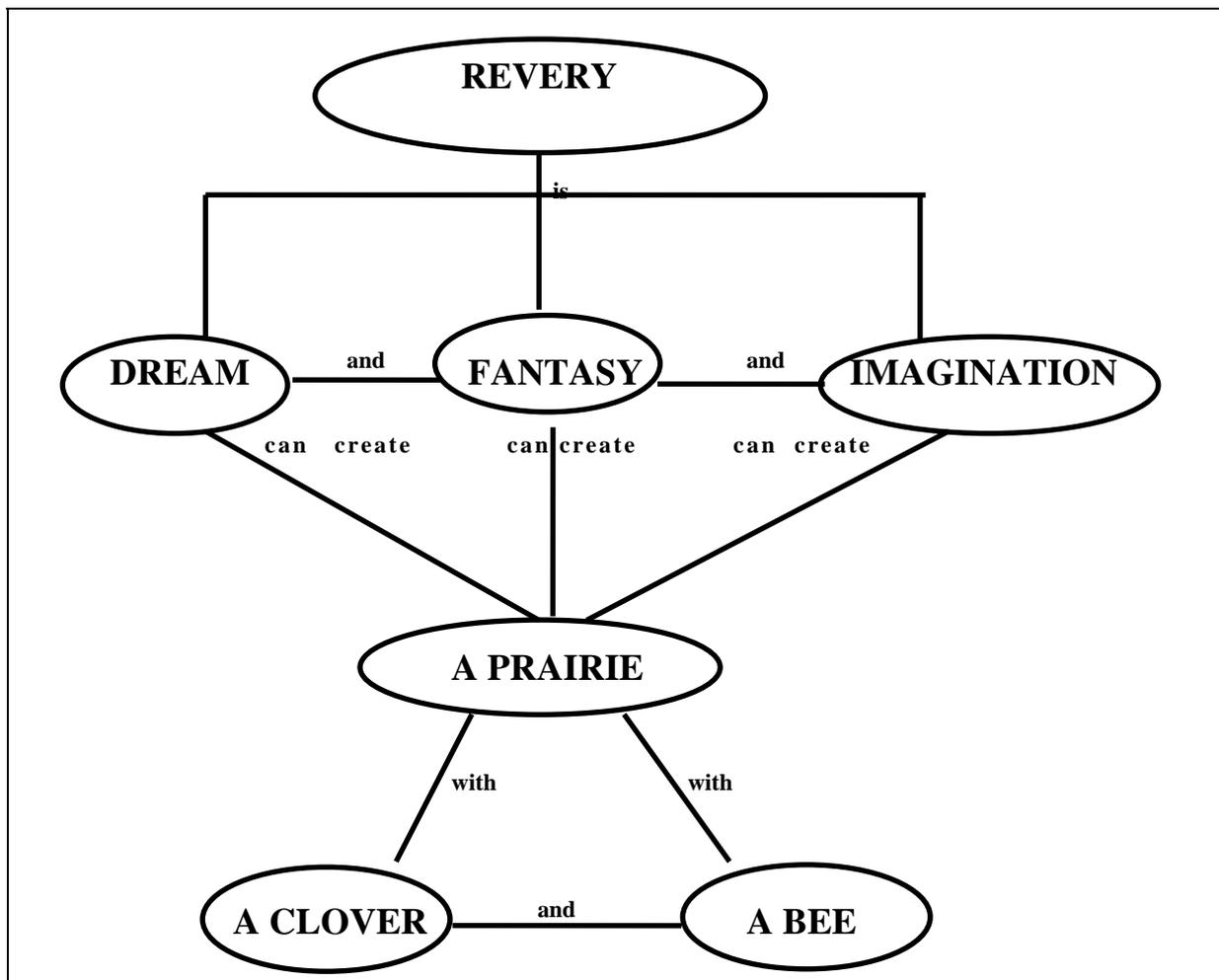


Fig. 6 : A concept map for “To Make a Prairie” by Student B. EnglishVII,Unisinós,.

2.3.3.5 Comments

Student B talked about her images of reverie, such as dreamlike states in which we imagine the realization of our most hidden dreams. She placed 'reverie' at the top of her concept map and explained that 'dream', 'fantasy', and 'imagination' were extensions of the meaning of 'reverie'. Emily Dickinson used it as a cluster of meanings that the reader already had in his/her prior knowledge files, which he/she would then assess and apply to the poem. Reverie might be a dream the reader has almost unconsciously, or a fantasy consciously built from data based on personal experience, or it can be the works of the reader's imagination, without any link to any tangible reality. 'Prairie', 'clover', and 'bee' form another cluster since clovers are part of the vegetation of a prairie and are as common as bees. They are metaphorical examples of what *reverie* can create to make life better.

Thinking+feeling+acting remarks

The texts (poems) were read and discussed in class, and maps were drawn to analyze students' understanding of them. Six examples of maps were presented here, each one of them with comments derived from the students' mental representations, and from observation of their own actions and thoughts before externalizing these internal representations into concept mapping. Classroom observations during the semester suggest that concept map activities related to literary texts seem to become more meaningful to the learners, when associated with group work engaged in externalization of mental images originated from those texts. Students reported that they felt more confident to express themselves and to interact after discussing what they had experienced in their minds, because they had become aware of scenes, events, and objects that could be linked to the poems. Furthermore, they had retrieved relevant data stored in their memory that, according to them, provided them with more elements of subject matter, concepts, vocabulary, syntax, semantics, and pragmatics to help them verbalize their thoughts and feelings. It seems that concept mapping associated with imagery can facilitate interactions in the foreign language, since students appear to be more aware of the feelings and knowledge they want to share, and seem to feel more confident about what they know and feel about the form and content of the poems. As a consequence, they made optimal use of the monitor (Krashen, 1981; 1995), that is, they were more fluent and did not make so many corrections, false starts, and pauses when expressing themselves orally.

We believe that underlying this work with concept maps there is the idea that learning situations should help motivate students to reflect upon their own experience. Hence, they should start from what they already know and then get involved in building new and deeper meanings, based on those concepts they have in their cognitive structure. Learners in a *learning how to learn* atmosphere will probably be ready to construct symbolic or/and analogical forms of knowledge representation to externalize their learning processes through the use of concept maps. The use of this tool can help students build up self-confidence on their ability to use newly acquired/learned concepts in new contexts. On the other hand, these concept maps can aid teachers to perceive what kind of knowledge their students *want* and *need* to construct to achieve autonomy through learning how to learn. Concept maps, here, were used in our classroom anchored in the basic tenet that if one wants to favor meaningful learning, he/she should *start where the learners are*. This was our vantage point, and from there students and teacher constructed a network of interwoven concepts through their engagement in meaningful activities. These, in turn, provided the foreign language classroom context (students +teacher + activities +materials) with meaningful learning opportunities through thinking, feeling, and (inter)acting.

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