

## Autonomy in Nursing Students' Process of Knowledge Construction: The Educational Chat as a Teaching Tool<sup>1</sup>

Ana Paula Scheffer Schell da Silva<sup>2</sup>

Eva Néri Rubim Pedro<sup>3</sup>

This documental study has the qualitative approach of a case study. It analyzes how autonomy has been developed in nursing students' process of knowledge construction, in a context mediated by the use of educational chat in Learning Management Systems (LMS). The analyzed materials were eight discussions promoted by students, professors, and monitors in the chat session of TelEduc<sup>®</sup> LMS. The software NVivo<sup>®</sup> was used to categorize data and Content Analysis for the analysis of information. Data analysis used Freire as a reference point, revealing that nursing students need to develop their autonomy by acknowledging their incompleteness. Professors can aid this process by problematizing and developing critical dialogical relations. The potential of the educational chat as a pedagogical tool is highlighted because it encourages students to autonomously seek knowledge.

Descriptors: Education, Nursing; Education, Distance; Knowledge; Learning; Professional Autonomy; Internet.

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<sup>2</sup> RN, Doctoral Student, Escola de Enfermagem, Universidade Federal do Rio Grande do Sul, RS, Brazil. Assistant Professor, Universidade Federal do Pampa, RS, Brazil. E-mail: anaschell@gmail.com.

<sup>3</sup> RN, Ph.D. in Education, Associate Professor, Escola de Enfermagem, Universidade Federal do Rio Grande do Sul, RS, Brazil. E-mail: evapedro@enf.ufrgs.br.

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Corresponding Author:

Eva Néri Rubim Pedro  
Universidade Federal do Rio Grande do Sul. Escola de Enfermagem  
Rua São Manoel, 963  
Rio Branco  
CEP: 90620-110 Porto Alegre, RS, Brasil  
E-mail: evapedro@enf.ufrgs.br

## **Autonomia no processo de construção do conhecimento de alunos de enfermagem: o chat educacional como ferramenta de ensino**

Pesquisa documental com abordagem qualitativa do tipo estudo de caso. O objetivo foi analisar como se desenvolveu a autonomia no processo de construção do conhecimento de alunos de Enfermagem, em um contexto mediado por chat educacional, em Ambiente Virtual de Aprendizagem (AVA). Os materiais analisados foram oito discussões promovidas por alunos, professores e monitores no chat do AVA TelEduc®. Para a categorização dos dados, utilizou-se o software NVivo® e, para a análise das informações, a técnica de análise de conteúdo. A análise foi ao encontro do referencial de Freire, revelando que é necessário que o aluno de Enfermagem desenvolva a autonomia, mediante o dar-se conta de seu inacabamento. Isso pode ser realizado com a ajuda de professores que adotem a metodologia da problematização e do desenvolvimento de relações dialógicas críticas. Destaca-se o chat educacional como ferramenta que incentiva os alunos a buscarem o conhecimento de forma autônoma.

Descritores: Educação em Enfermagem; Educação a Distância; Conhecimento; Aprendizagem; Autonomia Profissional; Internet.

## **La autonomía en el proceso de construcción del conocimiento de alumnos de enfermería: el chat educacional como herramienta de enseñanza**

Investigación documental con abordaje cualitativo del tipo estudio de caso. El objetivo fue analizar como se desarrolló la autonomía en el proceso de construcción del conocimiento de alumnos de Enfermería, en un contexto mediado por un chat educacional, en Ambiente Virtual de Aprendizaje (AVA). Los materiales analizados fueron ocho discusiones promovidas por alumnos, profesores y monitores en el chat del AVA TelEduc®. Para la categorización de los datos, se utilizó el software NVivo® y, para el análisis de las informaciones, la técnica de análisis de contenido. El análisis estuvo de acuerdo con el marco teórico de Freire, revelando que es necesario que el alumno de Enfermería desarrolle la autonomía, mediante el darse cuenta de no estar acabado. Esto puede ser realizado con ayuda de profesores que adopten la metodología de la problematización y del desarrollo de relaciones dialógicas críticas. Se destaca el chat educacional como herramienta que incentiva a los alumnos a buscar el conocimiento de forma autónoma.

Descriptorios: Educación en Enfermería; Educación a Distancia; Conocimiento; Aprendizaje; Autonomía Profesional; Internet.

### **Introduction**

One useful digital communication tool for teaching nursing, which can be either incorporated into Learning Management Systems (LMS) or used independently, is the virtual or educational chat. This tool is intended to allow the discussion of a given subject and is processed in such a way that students, monitors or tutors and professors are connected at the same time, thus characterized by synchronous communication<sup>(1)</sup>.

It is important to highlight that in a distance

education modality, students have more freedom to organize their studies. Thus, how the educational chat can facilitate students' autonomy in the nursing teaching process has been questioned.

One of the principles of the Brazilian National Curriculum Guidelines for Undergraduate Programs in the Field of Health is "to encourage independent teaching practices with a progressive intellectual and professional autonomy"<sup>(2)</sup>. Nurses' autonomy is important for the

definition and review of objectives and challenges of the profession, to understand the manner nurses present themselves and relate with the other members of a health team and with society in general in order not to interfere in the establishment of care priorities. Concomitantly to the development of technical competence, the nurse-to-be should be prepared to recognize and act in the face of ethical conflicts and dilemmas and critically analyze their implications so as to make responsible decisions<sup>(3-4)</sup>.

It is generally believed that Information and Communication Technologies (ICTs) provide stimuli and challenges to practice curiosity, which can aid students in constructing their autonomy. In the specific case of teaching nursing, offering opportunities to students to decide and exert their autonomy can reveal situations in which they only memorize content and do not actually recognize or learn the studied objective.

This article analyzes how autonomy is developed in the process of the knowledge construction of nursing students, in the context of learning mediated by the educational chat function in LMS. Pedagogy of Autonomy, proposed by Paulo Freire<sup>(5)</sup>, was used to identify and analyze the relationships and communication established between students and professors in this virtual environment.

## Method

This is a documental, retrospective research with qualitative approach of a case study<sup>(6)</sup>.

It was developed at the Federal University of Rio Grande do Sul (UFRGS), College of Nursing with the records of eight educational chat sessions produced between the first semester 2005 and second semester 2006 by students, professors and monitors in the LMS TelEduc® in the course *Foundations of Human Care II (ENFO2001)* in the nursing undergraduate program.

A total of 190 individuals participated in the study: 185 students (the majority (160) were female) three professors (two females) and two monitors. To preserve the participants' confidentiality, the letter S was used to denominate students, G for group of students, P for Professors and M for monitors.

The software NVivo® version 7.0 and content analysis<sup>(7)</sup>, with categories previously defined according to the proposed theoretical reference<sup>(5)</sup>, were used to treat data characterized in the this study as dialogs between students, professors and monitors.

The research project was approved by the Ethics Research Committee at the UFRGS (n. 2007825). A

commitment form was signed by the researchers to ensure the privacy and confidentiality of data and individuals<sup>(8)</sup>.

## Results and Discussion

Information was analyzed seeking concepts of autonomy and accommodation, dialogical and anti-dialogical relations according to Paulo Freire's framework. Anti-dialogical actions were not found in the analyzed data.

### Accommodation

When people lose their capacity to chose, whether by omission or others' imposition, decisions are no longer theirs because someone else decides for them. This is when accommodation occurs: individuals accommodate in view of others' imposition, they shut themselves, do not give their opinion, do not dialog, do not decide and therefore, do not participate. Accommodation is a behavior where emotion predominates. Reason and criticism are present in this behavior, though, they are diminished given the person's accommodation to the experienced context. Education that intends to make students to adapt is in reality accommodating them, impeding them from acting to transform the environment that surrounds them<sup>(9-10)</sup>.

The following excerpt evidences this behavior in nursing students.

(10:25:49) S61 to everyone: *It's a pity that some courses are a little deficient...*

(10:27:25) S47 to P1: *We didn't have specific classes teaching used terminologies, everything is still really vague for someone who doesn't work in the field.*

(10:27:48) S46 to everyone: *I believe that now we have to work as self-dictated because we have to fill in the deficiencies of the curriculum ... and of what was poorly taught.*

(10:28:56) S61 to everyone: *Maybe what we have to do now is to review the most used terms in studies by ourselves... and at home.*

(10:30:27) P1 to everyone: *Let's see: Do you think that everything you'll need to know for life will be taught in a classroom?*

(10:31:10) S57 to everyone: *Surely not! I guess that we learn just a small part during classes.*

(10:31:14) S61 to everyone: *Of course not; we have to have some notion to evaluate how much we need to know...*

(10:31:22) S50 to everyone: *and I also think that it is not the supervised training that will give us practice. I guess a lot of things we'll only achieve when we have assumed a function in a hospital, over time!*

It is possible to draw from this that students are not satisfied with the offered classes and expect that knowledge will be transmitted by professors. When the chat mediator perceived this posture, she asked them if everything they will have to know will be learned in a classroom and students said no, they will also learn in their daily practice. Accommodation was perceived in students in relation to the acquisition of knowledge: they are critical of what needs to be reviewed and deepened; they know they need to seek knowledge and that practice is important in the acquisition of knowledge, but they wish the path to knowledge to be provided by professors or the professional practice. We highlight that nursing teaching has gaps that do not correspond to the students' expectations, such as, the pedagogical training of undergraduate professors, the schools' curricular adequacy, and the behavior and responsibility of professors in relation to students' learning.

A study carried out with nursing undergraduate students and nurses revealed that students from the first semesters of the program directly depend on professors to learn and students from the last semester are less dependent. In terms of professionals, the learning process is linked to practice, and we observe that they expect that practice will produce knowledge by itself. Students and professionals transfer the responsibility for learning to other components, professors and practice, showing little commitment and autonomy within the process of knowledge construction<sup>(11)</sup>. Newly graduated nurses consider autonomy a personal attribute, achieved in daily professional practice, but which is never fully achieved due to the interactions that occur with the health team and the standards of the institution where they practice their activities<sup>(3)</sup>.

Nursing students have some critiques of what is needed for them to become competent professionals, however, because of accommodation, due to their naïve consciousness, they do not do it. Educators have to aid students in overcoming naïvete to be critical and help them to develop curiosity<sup>(5)</sup>.

### Dialogical relation

There is no dialog where there is not true and critical thinking, because naïve thinking leads to accommodation and critical thinking leads to the permanent transformation of reality and humanization. There is no true communication or true education without dialog. Therefore, educators' critical thinking should not oppose the capacity of students to think critically, since a dialogical relation starts when subjects open

themselves up to the world and to the others around them in a restless and curious manner. An anti-dialogical action is that which attempts to avoid transformation of the reality and social structure in which the oppressed human being lives. In education, it means all kind of teaching methodologies that do not allow the discussion of ideas, where the professor is the one who has knowledge and transmits it to students<sup>(5,10)</sup>.

The dialogs in the analyzed educational chats occurred between professors and students and also among the students themselves. In this way, this category was split into two subcategories: *dialogical relation professor-student* and *dialogical relation student-student*.

#### Dialogical relation professor-student

Professors has the responsibility to discuss the content under study with students and not only to present it as something already developed and fixed. Professors should listen to students and respect their understanding concerning reality, using their experiences and incorporating them into discussions in the classroom. For this posture to be possible, professors should not present themselves as superior individuals who teach people devoid of knowledge, but rather a humble posture of someone who communicates knowledge that is relative to other people who also have other relative knowledge<sup>(5,10)</sup>. The following excerpt exemplifies this:

(10:18:53) G1 to P1: *Professor, how can we comment on the symptoms, implying the patient is diabetic and doesn't know, without a medical diagnosis? Can we suggest a OGTT? Or HGT???*

(10:19:59) P1 to G1: *Only putting capillary glycemia, signs and symptoms (polyuria, pollakiuria, hunger and infections,...)*

(10:21:04) G1 to P1: *But there's nothing impeding us from asking for a capillary glycemia?*

(10:21:39) P1 to G1: *No, but only this doesn't mean DM.*

(10:22:37) S2 to everyone: *only capillary glycemia as an isolated data is not very useful.*

(10:25:50) P1 to everyone: *What else could make glycemia to develop??*

(10:26:50) G1 to P1: *infections.*

(10:27:25) P1 to everyone: *Infections can raise glycemia, what else? Anyone has anything else to suggest???*

(10:27:25) S2 answer to everyone: *consumption of food right before testing.*

(10:27:34) G1 to P1: *pancreatic involvement (which doesn't mean DM.)*

(10:28:02) P1 to everyone: *pancreatic alteration, a tumor in the pancreas, well thought G1.*

(10:28:21) G1 to P1: *renal disorders cause another type of diabetes.*

(10:29:04) G2 everyone: *stress, consumption of food rich in carbohydrates*

(10:30:07) G5 to P1: *what about lack of exercises???*

(10:30:29) P1 to everyone: *lack of exercise does not alters it much*

(10:30:41) G4 to P1: *Prof., Can the nurse see the capillary glycemia rate?*

(10:31:14) P1 to G4: *Sure, then she decides whether to call the physician*

(10:31:53) G1 to everyone: *the nurse can check it, but my doubt is: you just take note of the result without any observation, like linking the symptoms???*

(10:32:34) P1 to everyone: *It's everything at the same time, we check the glycemia, the medical records and make a decision.*

We perceive the curious posture of nursing students. The professor took advantage of the students' knowledge and included it in the discussion, which enriched the content discussion during the educational chat. The excerpt typifies a dialogical relationship in which postures and evidence of previous knowledge of both parties in this relationship, professor and students, cause new knowledge to emerge, instituting the production or the construction of knowledge in this way. The educator's role is focused on helping students to interpret, relate and contextualize this information, mobilizing the desire to learn critically. Acquisition of knowledge will depend less on the professor because technology can meet the students' curiosity as they rapidly deliver appealing information. Interactive teaching requires professors to have the sensibility to promote changes in students' thinking as they expose them to new ideas while valuing their previous experiences and strengthening them to become independent appendices<sup>(12-13)</sup>.

Open questions asked during the educational chat promote the participation of students, comparative questions promote intellectual activity, and synthesis and exploratory questions facilitate the process of knowledge construction. Therefore, synchronous online discussions can lead to cognitive development and to the construction of knowledge when questions/issues are well-structured by the mediator and students offer multiple arguments. We note that frequent feedback, empathy, organization and multiple opportunities of contact during the entire period of activities in LMS can create an affectionate environment between nursing students and professors<sup>(14-15)</sup>.

## Dialogical relation student-student

Professors who use the educational chat should allow students to interact as much as they want among themselves and should intervene only when necessary because communication among students should be more intense than that with the instructor. The professor is more a promoter of activity, so they should allow space for students to talk about their doubts and give their opinions in relation to the discussion. This interaction between students can be perceived in the educational chat when they "exchange their experiences, expose their ideas and feel free to question each other"<sup>(16)</sup>. This attitude is evidenced in the following excerpt.

(10:39:15) G10 to everyone: *but what if the patient restricts access to his records, because there're confidential information, and a family member asks to see them. What do we do?*

(10:39:57) S30 to everyone: *G10 – as far as I know, patients have the right not to allow people to see it.*

(10:40:17) G12 to everyone: *Good question G10... What do we do in this case???*

(10:40:35) S 35 to everyone: *G10, then it's about the ethical issue of confidentiality and secrecy.*

(10:41:20) G12 to everyone: *But S 35, every patient has the right to see his records according to law...*

(10:41:45) S 30 to everyone: *the patient does G12, but not family members in the case where the patient doesn't allow them to*

(10:42:01) S 35 to everyone: *G12 I'm talking about the case in which a family member wants to see the records and patient doesn't allow*

(10:42:06) S 30 to everyone: *If the patient doesn't object to it, it's ok*

(10:42:57) G12 to everyone: *What to do when the patient is not in condition to see it and wants to?*

(10:43:38) S 39 to everyone: *what do you mean is in no condition G12?? A mental problem or something like that??*

(10:45:09) P1 and P2 to everyone: *returning to the question of patients' rights. A lucid, oriented patient can ask to read his records at the hospital and read it [...]. The family member who is the legal guardian can (minors or people who are older than 65 years of age and are not lucid or is incapable cannot).*

We observe the dialogical relationship established among students who discuss patients' rights concerning their medical records. Several questions were posed among students who tried to answer according to their

previous knowledge about the subject. Professors only intervened at the end of the discussion, clarifying doubts and allowing the maximum of interaction among the students. Students feel free to question each other, discussing the issue and raising many possibilities in a hospital setting.

Learning depends a lot on students because maturity allows them to realize the real meaning a given piece of information has in their context of life, otherwise there is no real and meaningful learning. During the studied chats, we could identify the need for students to discuss among themselves. The professors only accompanied them and intervened when it was really needed. Instructors should also be encouraged to learn with students, be active listeners and correct misconceptions that might emerge, helping them to reflect on the meaning of their own experiences, the evolution of their work and define the future subject for their learning<sup>(12-13)</sup>.

### Evidence of autonomy

Autonomy is a process that is based on several experiences of decision-making, because "no one is initially autonomous and then decide and nobody is subject of nobody's autonomy". It is the being's maturing process that, if it occurs, occurs day-by-day. To develop students' autonomy, the instructor needs to create activities that encourage making decisions and taking responsibility so that they learn to freely decide and assume the consequences of their actions<sup>(5)</sup>. The proposed activity encouraged the decision-making skills of some students, as can be seen in the following.

(10:26:04) G16 to P1: *Prof., we thought that only following a script and filling it out would be too superficial. So, we used several models of anamnesis and created one of our own.*

(10:26:26) P1 to everyone: *Right, there isn't a single model*

(10:27:07) S 64 to P1: *we found several different scripts, some we deemed incomplete so we decided to gather what each said and choose the most relevant questions from each*

(10:27:33) G16 to everyone: *Right S 64, we just mentioned it to the professor*

When the discussion referred to anamnesis and to the nurses' physical assessment, the students realized there were not many ready scripts and decided to search for several and adapt them to the patients' needs. This was important, because they exerted their curiosity, their capacity to make decisions and to be responsible for the act of creating their own model of nursing anamnesis, something that not all students realized because,

perhaps they did not felt prepared to take the risk and were afraid to make mistakes in front of professors.

Distance education has been indicated as a tool that stimulates students' autonomy because the physical distance between the actors of the teaching process leads students to manage their own learning, since they need to plan periods of study, time they will spend in each activity and organize the priority of content to be studied<sup>(17)</sup>. Some nursing professors have perceived that students assume more responsibility for their learning in distance courses through the internet, think critically and participate much more than in the classroom<sup>(18)</sup>.

### Final considerations

This study analyzed how autonomy is developed in the process of the knowledge construction of nursing students mediated by a digital synchronous tool in LMS.

The studied themes were previously defined with the aid of the pedagogy of autonomy<sup>(5)</sup>, because autonomy is a very important characteristic, both to students in their search for knowledge, and for nurses, who should update their knowledge concerning care practices and be capable to act as critical professionals, apt to decide and take responsibility for their actions, whether these are administrative actions or related to their care practice.

The analysis of information evidenced that students perceived their understanding of content that needed to be deepened and revised by themselves, but expected that knowledge would be transmitted by the professor or through professional practice. This perception denotes that students have some awareness of their incompleteness, but are accommodated in relation to the construction of their own knowledge. It is necessary for instructors to help students to pass from a naïve consciousness to a critical consciousness, developing activities that encourage curiosity and students' restlessness that makes them to want to seek knowledge.

A way of fomenting a critical consciousness is through a true dialog between students and professors intending to transform reality, that is, discuss ideas and not simply transmit knowledge. Proposing problems in the educational chat permitted the discussion of content, which enabled the construction of new knowledge. Students were argumentative at times, enabling the restlessness necessary for exhausting discussions about certain subjects. The mediators in turn, permitted the maximum exchange between students, discussing,



encouraging and intervening whenever necessary but favoring dialog between the participants.

The interactions in the educational chat also allowed students to take responsibility for and manage their learning; they were able to decide and take responsibility for the development of specific anamnesis scripts and physical assessments of the needs of their patients. This behavior is evidence of their maturing autonomy concerning the construction of knowledge.

For nursing students to develop autonomy it is necessary that they realize how incomplete they are. This should be done with the help of professors prepared to discuss problems through the development of critical dialogical relationships, content and practical experiences in the profession. For this education to be possible, meaningful pedagogical activities are needed. Discussions via educational chats is one of the strategies that professors can use to encourage students to search

for life-knowledge.

This study contributed to existing knowledge about the theme<sup>(3,19)</sup> of ICTs, specifically that the use of educational chats in nursing teaching can enrich the teaching-learning process and serve as a complement to classroom teaching, unveiling paths to the development of students' maturity, who can become autonomous nurses capable of responsible decision-making, respecting the knowledge of their patients and colleagues, being creative and critical.

We highlight the potential of computer tools in teaching nursing and the need for further studies in the subject of ICTs' pedagogical foundations, since distance education mediated by the internet, as well as the use of online tools, are increasingly being incorporated into programs directed at all spheres, whether in undergraduate, graduate or continuous education programs for nursing students and nurses.

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