

# Professors' perception of students' feelings in the classroom: an analysis\*

ANÁLISE DA PERCEPÇÃO DOS PROFESSORES EM RELAÇÃO AOS SENTIMENTOS DOS ALUNOS EM SALA DE AULA

ANÁLISIS DE LA PERCEPCIÓN DE LOS PROFESORES EN RELACIÓN A LOS SENTIMIENTOS DE LOS ALUMNOS EN SALA DE CLASES

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## ABSTRACT

The objective of this study is to verify the difference in professors' perception of students' feelings before and after an explanatory presentation on the theme. This is an exploratory study using a primary source, and a quantitative approach with 13 Nursing and Medicine professors. A video showing student images was presented to the professors, who answered a feeling-identification questionnaire, and, after an explanatory presentation about non-verbal communication and feelings, the professors watched the same video and answered the questionnaire again. As to the identification of feelings, joy, anxiety, and interest were the most often identified. We found statistically significant values regarding the mean total score before and after the explanatory presentation ( $p=0.02$ ). The professor is capable of identifying the feelings, but after the explanatory presentation, their perception improved and they were able to make identifications more often.

## DESCRIPTORS

Students  
Faculty  
Nonverbal communication  
Emotions  
Perception

## RESUMO

O estudo teve como objetivo verificar a diferença na percepção dos sentimentos dos alunos pelos professores antes e depois de uma apresentação explicativa sobre o tema. Estudo de natureza exploratória de fonte primária, abordagem quantitativa com 13 professores de Enfermagem e Medicina. Um vídeo com a imagem dos alunos foi apresentado aos professores que responderam ao questionário de identificação de sentimentos e, após uma apresentação explicativa sobre comunicação não verbal e sentimentos, assistiram ao mesmo vídeo e responderam novamente ao questionário. Quanto à identificação de sentimentos, a alegria, a ansiedade e o interesse foram os mais identificados. Encontramos valores estatisticamente significativos em relação à média da pontuação total antes e depois da apresentação explicativa ( $p=0,02$ ). O professor é capaz de identificar os sentimentos, porém, após a apresentação explicativa, sua percepção melhorou e ele conseguiu identificá-los mais vezes.

## DESCRIPTORIOS

Estudantes  
Docentes  
Comunicação não-verbal  
Emoções  
Percepção

## RESUMEN

El estudio objetivó verificar la diferencia en la percepción de los sentimientos de los alumnos por los profesores antes y después de una presentación explicativa sobre el tema. Estudio exploratorio de fuente primaria, abordaje cuantitativo con 13 profesores de Enfermería y Medicina. Un video con la imagen de los alumnos se presentó a los profesores que respondieron el cuestionario de identificación de sentimientos y, luego de una presentación explicativa sobre comunicación no-verbal y sentimientos, vieron el mismo video y respondieron nuevamente el cuestionario. Respecto de identificación de sentimientos, alegría ansiedad e interés fueron los más identificados. Encontramos valores estadísticamente significativos en relación a la media de puntuación total antes y después de la presentación explicativa ( $p=0,02$ ). El profesor es capaz de identificar los sentimientos, sin embargo luego de la presentación explicativa, su percepción mejoró y le fue posible identificar sentimientos mayor cantidad de veces.

## DESCRIPTORIOS

Estudiantes  
Docentes  
Comunicación no verbal  
Emociones  
Percepción

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## INTRODUCTION

The etymological origins of the word *communicate* go back to the Latin word *communicare*, which means to *make common*<sup>(1)</sup>. Communication is defined as a form of understanding and sharing messages that are sent and received. For this act, the issuer, receiver, message, channel and response should be present<sup>(2)</sup>.

Interpersonal communication can be divided in verbal and nonverbal communication. Verbal communication is associated with the words expressed through written or spoken language, while nonverbal communication involves all behavioral manifestations not directly expressed through words. Nonverbal communication is the information obtained through postures, facial expressions, gestures, body orientations, somatic particularities, distance maintained among individuals and even the organization of objects in space<sup>(3)</sup>.

According to social psychology research, it is estimated that only 7% of thoughts are expressed through words, 38% through paralinguistic signs (pitch, speed of words said, among others) and 55% through bodily signs, that is, nonverbal<sup>(3)</sup>.

Nonverbal signs provide different meanings and have four main functions in the interpersonal communication process, which are: complementing verbal communication, replacing verbal communication, contradicting verbal communication and demonstrating feelings. Demonstrating feelings means demonstrating any emotion that is not just through words, but mainly through facial expressions<sup>(3)</sup>.

A *perceptive* or *intuitive* person refers to people with the ability to read other people's body language signs and compare them with the verbal signs, thus identifying contradictions<sup>(4)</sup>.

Human emotion is the activation of a complex and elaborate neural network that promotes a very miscellaneous repertoire of behavioral responses<sup>(5)</sup>. Feeling is defined as the faculty or ability to feel and receive mental impressions. In addition, it is considered a set of emotions<sup>(6)</sup>.

Human beings' face can show emotions. It is considered a means for communicating and translating practically all reactions or emotions<sup>(7-8)</sup>. It is presumed that we are capable of making and recognizing about 250 thousand facial expressions<sup>(9)</sup>. The descriptions of facial expressions of emotions have been summarized<sup>(8,10-11)</sup>.

Recognizing these facial expressions can be fundamental for teachers to elaborate interventions and improve students' learning.

Teaching means stimulating to identify and solve problems, it means helping to create new thought and action

habits<sup>(12)</sup>. Teaching also means interacting, approaching and making two different universes dialogue<sup>(13)</sup>.

Some authors consider teachers' knowledge transmission ability to be their main virtue. Information production, transmission and reception, however, is but one of the communication functions between teachers and students<sup>(12)</sup>.

Teachers need to arouse students' attention and interest, mobilize their intelligence, be understood by the students and induce them towards expression and dialogue, beyond mere preoccupation with exposing their course; in other words, they need to communicate adequately<sup>(12)</sup>. Teachers need to address various student aspects, including affection, perceptions, expression, senses, criticism, creativity<sup>(8)</sup>.

In addition, verbal and nonverbal communication behaviors exist that can motivate students to learn. Motivation is a condition internal to individuals and, in learning, feelings, interpersonal relations, affection, cultural differences, beliefs and values are involved<sup>(14)</sup>.

In education, the feedback resource is used, which is information the students receive about their performance in a given situation or activity<sup>(15)</sup>. When that feedback is provided, nonverbal communication is very important, as the teachers need to interpret and validate the students' nonverbal communication. If this validation does not take place, the interpretation can be distorted and the change in behavioral standards may not occur, thus impeding the learning process.

Nonverbal signs that can be observed in students in the classroom, during the learning process, include: body posture, location in the classroom, eye contacts, clothing, facial expression, voice volume, interpersonal distance maintained, touch and head movements<sup>(3)</sup>.

In a theoretical class, understanding is more evident when interaction occurs between teacher and student. At that moment, there is a constant exchange between different communication levels. Interaction with the students involves the perception of teachers and students' behavior, so as to adjust the class according to the detected reaction and intervene in different ways to guarantee motivation and enhance retention<sup>(16)</sup>.

Universities, in turn, are committed to preparing and raising teachers' awareness about their role as communicators, so that teaching is flexible and up-to-date<sup>(17)</sup>. Some teachers have higher personal limits than others to develop the perception to identify the students' feelings in class. One of the hypotheses regarding why this happens is when teachers are starting their teaching career and possibly because they are concerned with transmitting class information and contents. Also, some higher education institutions do not grant teachers the conditions to

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identify feelings, as some classrooms contain a large number of students and the physical structure is not adequate.

The inspiration to accomplish this research emerged from the researchers' interest in the nonverbal communication theme, its relation with the teaching-learning process, and also from the interest in verifying if teachers at a private higher education institution know what it is and whether they are capable of identifying the students' feelings in a filmed recording.

The practical application of this research is to make teachers and teaching institutions pay attention to the benefits of an educator who uses and knows how to use students' nonverbal communication during the teaching-learning process and that this perception can and should be trained through courses, reading and dynamics about communication.

## OBJECTIVE

To check the difference in teachers' perception of students' feelings before and after an explanatory presentation about the theme in the context of higher education.

## METHOD

*Study design:* exploratory research based on primary sources, due to the field research design, with a quantitative approach.

*Place of study:* a Municipal Higher Education Institution located in Jundiaí, Brazil.

*Sample:* all teachers in the Nursing and Medicine course were invited to participate, as the study institution offers these course. The sample, however, comprised 13 teachers, 07 from the Nursing and 06 from the Medicine program.

*Inclusion criteri:* being a faculty at the study institution and having at least one year of teaching experience. This minimum time was set because, as a result of experience, teachers may be concerned not only with offering contents, but also with identifying students' needs and reactions.

*Institutional Review Board:* the Research Project was submitted to the Institutional Review Board of Faculdade de Medicina de Jundiaí and started after obtaining approval (Protocol FMJ 129/08). The subjects received the Informed Consent Term and anyone who read, agreed and signed two copies was considered a research subject.

### Material preparation:

*Phase 01* – Presentation video for students: a presentation was elaborated for the students, including videos obtained from the internet, which took 2'56", containing

commercials from various contexts with a view to arousing different reactions in a short time period. The commercials contained funny, light and tragical scenes.

*Phase 02* – Feeling identification questionnaire: a questionnaire was elaborated for use with the teachers, who should mark whether they identified the indicated feelings (joy, anxiety, fatigue, lack of interest, doubt, interest, fear, anger, surprise and sadness) or not and, if yes, they should describe how they identified these feelings. The researchers chose to ask the teachers to describe the identified feelings so as to guarantee that the teachers did not simply mark the items without any reflection.

*Phase 03* – Sample characterization questionnaire: a questionnaire was elaborated with 9 questions, addressing personal identification (gender, age, marital status, profession, academic education and experience as a teacher) and the research theme (nonverbal communication, learning process and perception of feelings).

*Phase 04* – Explanatory presentation: a 12-slide PowerPoint presentation was elaborated, aimed at the teachers, containing the definition of communication types (verbal and nonverbal), the functions of nonverbal communication, explanations about the feelings, accompanied by pictures without a view to a better understanding and examples of some signs that can be observed in students in the classroom. A nonverbal communication researcher assessed this presentation and served as a content adequacy judge.

*Phase 05* – Student recording: the commercial videos were presented to a group of 5 students, who were filmed in a conventional classroom setting. These students were randomly invited to participate in the recording and are familiar to the research subjects. This number of students was defined because the film image is smaller in comparison with the actual image (live). Thus, a smaller group would permit an approach for the better identification of feelings. The camera was strategically placed, guaranteeing that all research subjects would be filmed and that the presence of a different object in the classroom would not distract attention from the video that was being presented.

### Data collection procedures

The teachers were invited to participate in the research and a day was scheduled for data collection, according to their availability and stay at the institution. Data collection started and involved the following phases:

*Phase 01* – Presentation of the student recording to the teachers: in principle, the teacher was not informed about the research aims (masked to the research theme) to avoid any influence for teachers to pay attention to the students' feelings.

*Phase 02* – Completion of the feeling identification questionnaire BEFORE the explanatory presentation: the

teacher was oriented to mark how many times and in what way he identified the feelings.

*Phase 03* – Completion of the sample characterization questionnaire, which contained 9 questions, 6 addressing personal identification and 3 on the research theme.

*Phase 04* – PowerPoint explanatory presentation: the researchers showed slides with the explanatory presentation and, soon afterwards, gave the teacher a copy. This presentation took an average 10 minutes.

*Phase 05* – second presentation of the student recording to the teacher: the teacher again watched the same student recording.

*Etapa 06* – Completion of the feeling identification questionnaire AFTER the explanatory presentation: the teacher should again mark how many times and in what way he identified the feelings.

*Phase 07* – Feedback: at the end of data collection, the teacher watched the same recording, accompanied by subtitles with the possible feelings.

Data collection with each teacher took approximately 30 minutes.

#### Data treatment

Data were stored in Excel for Windows Explorer® and analyzed in Software SAS (Statistical Analysis System) version 9.01 by a specialized professional. The following tests were used to obtain the results:

- Student's Paired T-Test for comparison of means.
- McNemar's Chi-square test to compare percentages.

Statistical significance of the tests was assessed according to the generally acceptable literature standard and the p-score of the test was considered statistically significant if  $p < 0.05^{(18)}$ .

To analyze the feeling identification questionnaire data, a scoring system was used, in which answers were classified as YES or NO. Thus, if YES was marked, the score was added (higher than zero) and, if NO was marked, the score was not added (equal to zero). Also, the mean number of teachers who scored each of the feelings was obtained. Besides, mean scores before and after the explanatory presentation were compared.

## RESULTS

Thirty-six faculty members were invited to participate, but only 14 comprised the initial sample. One of the research subjects was excluded due to incorrect completion of the questionnaires. Hence, the sample contained 13 teachers. The other teachers did not attend data collection and, as this research was accomplished for the

purpose of a course conclusion monograph, no new appointment could be made with the teachers.

The average age of the 13 teachers who participated in the research was 44.8 years ( $\pm 10.7$  standard deviation), minimum 27 and maximum 61 years. The sample predominantly consisted of women (9 – 69.2%).

As for marital status, most teachers were married (9 – 69.2%), while the remainder was single (3 – 23.1%) and divorced (1 – 7.7%). In professional terms, 7 (53.9%) were nurses, 3 (23%) physicians and 3 (23%) came from other professions (dental surgeon, pedagogue and bio-physician).

All faculty members (100%) had a graduate degree: 6 (46.1%) a Ph.D., 4 (30.8%) a specialization and 3 (23%) a Master's degree.

The average experience as a teacher was 15.2 years ( $\pm 11.2$  standard deviation), with 35 years as the maximum and 5 as the minimum.

Regarding nonverbal communication, 12 (92.3%) teachers answered they know about the theme. They reported that they have already read some scientific paper, book or text (9 – 69.2%), have watched lectures (7 – 53.8%) and taken courses that addressed the theme (2 – 15.4%). Only 1 (7.7%) teacher reported no knowledge on the theme.

All participating teachers (100%) considered that the identification of the students' feelings is important for the learning process.

The teachers justified the importance of identifying the students' feelings for the learning process, through which they could change and improve the teaching strategy. The main items they presented were related to changing the teaching strategy, facilitating the learning process, verifying the student's understanding of class contents, stimulating learning and enhancing in-class interaction.

As for the expression of feelings in the classroom, all teachers (100%) reported they recalled some classroom situation in which the expression of feelings was evident. In these experience reports, the participating teachers most frequently mentioned the feeling of joy (4 – 30.8%).

All teachers managed to exemplify situations in which the expression of feelings was evident in the classroom, like the demonstration of fatigue, lack of interest, joy, doubt, desire to ask a question, etc.

In the study, joy (100%), anxiety (92.3%) and interest (100%) were the most identified feelings. Some feelings, such as fatigue, lack of interest, anger and surprise, were more identified after the explanatory presentation. The number of subjects who identified feelings of doubt and fear did not change after the explanation. Except for sadness, all other feelings were more identified after the explanatory presentation or did not change.

Table 1 shows the mean and standard deviation of how many times each teacher identified a feeling before and after the explanatory presentation. To calculate the

mean score for each feeling, it was added up how many times the teachers identified each feeling, and then divided by the number of teachers.

**Table 1** – Mean and standard deviation of how many times the teacher identified each feeling before and after the explanatory presentation – Jundiá - 2008

Feeling	Before		After		p-value
	Average	Standard deviation	Average	Standard deviation	
Joy	3.0	1.2	3.2	1.4	0.2
Anxiety	1.7	1.2	1.9	1.3	0.2
Fatigue	0.6	0.9	0.8	1.0	0.5
Lack of interest	1.2	1.2	1.5	1.5	0.1
Doubt	1.0	0.9	1.1	1.0	0.6
Interest	1.9	0	2.1	1.0	0.2
Fear	0.1	0.3	0.1	0.3	1.0
Anger	0.2	0.4	0.5	0.8	0.1
Surprise	1.0	1.0	1.1	0.9	0.8
Sadness	0.8	1.1	1.1	1.7	0.4
<b>Total</b>	<b>11.5</b>	<b>3.4</b>	<b>13.2</b>	<b>4.7</b>	<b>0.02</b>

Obs: Student's Paired t-Test. Differences were considered significant if  $p < 0.05$ .

The mean number of times the teachers identified the feelings after the explanatory presentation was higher for all feelings except fear, which did not change. When comparing averages, the feelings the teachers most identified were joy, anxiety and interest.

No statistically significant differences were identified in the before-and-after comparison of means for each separate feeling. A statistically significant difference ( $p=0.02$ ) was found though when comparing the sum of means before (total means before) and after the presentation.

The total average number of times the feelings were identified, considering all feelings, after the explanatory presentation was higher (mean 13.2 and  $\pm 4.7$  standard deviation) than before the presentation (mean 11.5 and  $\pm 3.4$  standard deviation).

The comparison of teachers' professional category with the feelings' identification - 7 nurses, 3 physicians and 3 other categories (dental surgeon, pedagogue and biophysician) – showed a greater before-and-after difference in the perception of students' feelings in the other professionals category, as they managed to identify more feelings when compared with nurses and physicians.

## DISCUSSION

A amostra, composta predominantemente por professores do sexo feminino (9 - 69,2%), pode ser um viés importante já que as mulheres tendem a ser mais perceptivas e atentas para a linguagem corporal do que os homens. Elas possuem um olhar atento para os detalhes e uma capacidade inata de captar e decifrar os sinais não-verbais<sup>(4)</sup>.

Due to women's brain organization, most of them perform better than men in terms of communication abilities. Magnetic Resonance Images clearly show why women are more able to communicate and assess people than men. They use between 14 and 16 brain areas to assess people's behavior, against 4 to 6 areas in case of men<sup>(4)</sup>.

The teachers' comments during the study revealed that, besides the importance of identifying feelings in the classroom, they are very interested in going deeper into this theme. The established data collection time of approximately 30 minutes was exceeded several times due to the subjects' comments and need to share their experiences. Despite acknowledging the importance though, not all teachers have already read something about non-verbal communication, with 69.2% having read and a minority (15.4%) having taken courses on the theme.

When asked about previous experiences, all teachers mentioned recalling some classroom situation in which the expression of feelings was evident; in these reports, joy (30.8%) was the most indicated feeling.

The facial characteristics of smiling individuals are more remarkable and easy to recall and recognize. That is the main conclusion of a study in which researchers photographed 96 college students with neutral expressions and expressions of joy, totaling 192 images. For the smiling pictures, the students were instructed to laugh naturally with their mouth closed and without showing their teeth. The images were randomly divided in two sets of 96 images, accompanied by figures equal to the four face categories (neutral male, male smile, neutral female, female smile). The volunteers (56 men and 58 women) analyzed one of these sets and were asked to score the observed faces between 0 (not distinct) and 3 (very distinct)

<sup>(19)</sup>. Smiling faces are more distinct from neutral faces in a statistically significant way.

Another study on facial expressions affirms that these are rarely perceived in isolation; face recognition is generally influenced by the context they are involved in. In this study, the participants were asked to rank the facial expressions in three types (aversion, fear, happiness), shown in contexts with agreeing or disagreeing emotional meaning. Then, the participants were asked whether the contexts influenced the explicit recognition of the facial expressions. The results showed a higher answer score for the facial expressions accompanied by congruent contexts, that is, the environment is an important factor in the recognition of facial expressions<sup>(20)</sup>.

In the study, the mean number of times each teacher identified a feeling before and after the explanatory presentation was higher for all feelings, except for fear, which did not change, proving the hypothesis that teachers would manage to identify a larger number of the students' feelings after the explanatory presentation about the theme.

The feelings the teachers identified most were joy, anxiety and interest. The total difference found after the explanatory presentation was significant ( $p = 0.02$ ).

Repetition and training remains a very important variable that should be taken into account if one is interested in learning. In a study, the identification of nonverbal signs was compared between nurses who had read something on the theme and others who had not. A significant increase occurred in the perception of nonverbal signs among nurses who informed they had read something about the theme. This demonstrates that learning about the nonverbal can be enhanced by reading about the theme<sup>(21)</sup>.

Although explanatory presentation was used in this study to compare the results, it cannot be guaranteed whether the teacher actually paid attention to it. Besides, data were collected at an internet laboratory located inside the institution, due to the need to use a computer and the easy access to this location at any time. Thus, the choice of the place may have influenced the teacher's attention to the video and explanatory presentation, due to the flow of people at the laboratory.

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By concerning themselves with *reading* the students' body language signs, teachers will become more aware and attentive in their activities, and also more sensitive to their own and other people's emotions and feelings. That is so because a narrow relation of reciprocity marks emotions and gestures<sup>(3-4,8)</sup>.

The classroom as a place to demonstrate emotion, relaxation, affection, respect for the other, acknowledgment and valuation of individual differences can stimulate knowledge construction and enhance teacher-student bonding<sup>(14)</sup>.

This private higher education institution has no classrooms with many students when compared with other institutions, as the maximum number of students is 60 in the Medicine course and 40 in the Nursing course. This allows teachers to identify the students' feelings during class. The teaching method used depends on each teacher and on what subject is taught. Some teachers use an active method, with possible teacher-student interaction, thus facilitating the identification of the students' feelings. Others, on the opposite, choose the lecture method, limiting interaction with the student and, consequently, reducing the perception of feelings.

Giving feedback enhances prosperous learning and the mastery of contents and skills. This return is valuable for learning, as it highlights dissonances between expected and actual results and encourages change. This feedback also appoints adequate behaviors, motivating the repetition of correct ones<sup>(22)</sup>.

## CONCLUSION

In view of the statistically significant results, it can be concluded that a difference exists in the identification of feelings in general after the explanatory presentation.

It was perceived that teachers can identify the students' feelings but that, after their attention was directed at nonverbal communication, perception improved and they managed to identify the feelings more often, except for the feeling fear, which did not change.

The opportunity to share knowledge about communication, feelings and involvement in teaching was gratifying and constructive, besides offering a moment of reflection on the teaching-learning process for the teachers.

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