

Active Learning in Remote Teaching from the Perspective of Brazilian Dentistry Students: an observational cross-sectional study

Aprendizagem Ativa no Ensino Remoto na Perspectiva dos Estudantes Brasileiros de Odontologia: um estudo transversal observacional

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ABSTRACT

Objective: This study aimed to analyze the perceptions of first-year Dentistry students at a Brazilian public university, emphasizing the implementation of active methodologies during the remote teaching period. **Material and Methods:** Using a flipped classroom model combined with active methodologies and digital tools, the Histology and Embryology course integrated asynchronous video lectures, synchronous discussions, virtual microscopy, and diverse activities such as case studies and schematic drawings. Assessments included diagnostic tools and formative assessments, with individualized feedback and supplemental assignments for students who needed additional support. This cross-sectional study was conducted to assess student perceptions of these methodologies and their potential for future application. **Results:** Regarding the overall dynamic of the course, 63.5% of the students rated it as “excellent.” As for the tools employed, the positive percentage ranged from 87.55% to 94.4%. When asked about the challenges faced, issues related to internet connectivity and motivation were highlighted. **Conclusion:** This study concludes that the flipped classroom approach, combined with other active methodologies, provided a beneficial environment for the development of the course in the online format. This study’s limitations include the absence of a direct comparison between traditional teaching, flipped classroom methodologies, and hybrid approaches, highlighting the need for future research to evaluate their effectiveness comparatively.

KEYWORDS

Active learning; Education; eLearning; Histology; Perception.

RESUMO

Objetivo: Este estudo teve como objetivo analisar as percepções dos estudantes do primeiro ano de Odontologia de uma universidade pública brasileira, enfatizando a implementação de metodologias ativas durante o período de ensino remoto. **Material e Métodos:** Utilizando um modelo de sala de aula invertida combinado com metodologias ativas e ferramentas digitais, a disciplina de Histologia e Embriologia integrou videoaulas assíncronas, discussões síncronas, microscopia virtual e diversas atividades como estudo de casos e desenhos esquemáticos. As avaliações incluíram ferramentas de diagnóstico e avaliações formativas, com feedback individualizado e tarefas complementares para alunos que precisavam de apoio adicional. Este estudo, descritivo transversal, foi realizado para avaliar as percepções dos alunos sobre essas metodologias e seu potencial para aplicação futura. **Resultados:** Em relação à dinâmica geral do curso, 63,5% dos alunos avaliaram-no como “excelente”. Quanto às ferramentas utilizadas, o percentual positivo variou de 87,55% a 94,4%. Quando questionados sobre os desafios enfrentados, foram destacadas questões relacionadas à conectividade à internet e à motivação. **Conclusão:** Este estudo conclui que a abordagem sala de aula

invertida, aliada a outras metodologias ativas, proporcionou um ambiente benéfico para o desenvolvimento do curso no formato online. As limitações deste estudo incluem a ausência de uma comparação direta entre o ensino tradicional, metodologias de sala de aula invertida e abordagens híbridas, destacando a necessidade de pesquisas futuras para avaliar comparativamente sua eficácia.

PALAVRAS-CHAVE

Aprendizado ativo; Educação; Educação a Distância; Histologia; Percepção.

INTRODUCTION

Remote teaching has emerged as a viable pedagogical strategy, widely adopted by Higher Education Institutions (HEIs), during the pandemic period [1-5]. In this context, Emergency Remote Teaching (ERT), facilitated by the use of online platforms for conducting distance classes and academic activities, sought to mitigate potential learning losses, ensure the continuity of the academic year, and safeguard the well-being of students, faculty, and other stakeholders involved in the educational process [6,7].

Although Distance Education (DE) already used the internet, ERT initially differed due to the lack of time for planning and adapting resources, which compromised, to some extent, the quality of teaching at the beginning of the period of social isolation [6-8]. The urgency of implementing ERT required rapid responses from HEIs, which led to the adoption of strategies such as active methodologies. This approach could mitigate the potential drawback of suspending in-person classes and achieve the same quality of those classes [1].

Active methodologies have a positive impact on students, promoting a redefinition of the way they learn, providing them with autonomy and developing critical, analytical and reflective thinking [1,4,9,10], in comparison to the traditional model that focuses on the transmission of content by the teacher. By placing the student as the protagonist of the learning process, these methodologies foster the collaborative construction of knowledge. Both students and faculty reported the limitations of the traditional model, such as a lack of dynamism and low participation, which reinforced the need for pedagogical transformation. As a result, several universities, including in Brazil, have begun adopting these methodologies as a differentiator [9,11,12].

An effective active methodology is the flipped classroom [4,10,13,14], in which theoretical content is studied outside the classroom through materials, such as video lessons, provided to

students in advance. Video lessons, in turn, offer multiple sensory stimuli and allow students to revisit the content as needed, increasing autonomy and time efficiency [2]. Thus, in the face-to-face (or virtual) space, the teacher can act as a mediator, promoting discussions and in-depth content analysis to consolidate knowledge, clarify doubts, and support learning in a much more productive and effective manner [15,16]. In this scenario, digital technologies enable synchronous interactions that strengthen the bond between the teacher and student, even in virtual environments [2,17].

In response to the challenges posed by the urgent implementation of the ERT, a first-year subject in the Dentistry program at the Institute of Science and Technology of São Paulo State University (UNESP) adopted the flipped classroom methodology, along with other active teaching methods within the ERT framework, including case studies and problem-based learning, integrating them into both online theoretical and laboratory classes [2]. In this context, the objective of the study was to investigate students' perceptions of the various active methodologies implemented in online teaching and to propose reflections on the changes brought about during the ERT period upon return to in-person instruction.

MATERIAL AND METHODS

This observational cross-sectional study was approved by the Research Ethics Committee at Institute of Science and Technology, São José dos Campos, of São Paulo State University, Brazil (CAAE: 80103124.2.0000.0077).

Scenario and participants

The study was conducted at a Brazilian public university, aiming to assess the viewpoints of first-year students from two separate classes, with an initial sample of 86 students (44 full-time program and 42 evening program), and the new opportunities that emerge from the experiences in the Histology and Embryology course within the Dentistry program, during the COVID-19 pandemic.

Only first-year undergraduate students who attended the course in 2020 and participated in all proposed activities were included. Students who withdrew from enrollment or answered the questionnaire incompletely were excluded.

The activities conducted were adapted from some of the pedagogical strategies that were previously employed in the traditional in-person format of the course.

Pedagogical strategies

To ensure the continuation of studies during the period of social distancing, a flipped classroom approach was implemented, coupled with other active teaching methodologies and digital tools, as outlined by Spalding et al. [2], both synchronously and asynchronously. The digital tools employed included: Moodle platform (Virtual Learning Environment - VLE), Google Meet, Google Classroom, and Kahoot.

The structure of theoretical classes followed the flipped classroom model. Pre-recorded and edited video lessons were made available on the Moodle platform and/or Google Classroom a week in advance, in accordance with the curriculum schedule. In the subsequent week, synchronous meetings were conducted via Google Meet at the designated time and day of the course, aimed at clarifying doubts, employing various active teaching methodologies, and engaging in discussions between teachers and students regarding the provided content [2].

Similarly, practical classes were organized, supplemented by the presentation of digitized histological sections. Through a virtual microscope, instructors mimicked laboratory practical sessions, fostering active participation from students. Apart from the virtual histology atlas, Lamivir, PowerPoint files containing detailed images and structures were also shared to aid in study. Complementary activities were undertaken to provide diverse learning opportunities, including report writing, questionnaires, and schematic drawings to be submitted by students on Google Classroom. Additionally, exercises were conducted on the VLE, and case studies were employed to analyze problems and make decisions.

For assessments, two tools were utilized. Diagnostic assessments were conducted during synchronous sessions using Kahoot, creating

an in-class game. Formative assessments, encompassing both theoretical and practical components, were held on the Moodle platform.

Furthermore, supplementary activities were proposed for students displaying insufficient performance. These activities involved creating schematic drawings of histological sections and providing explanatory descriptions of the observed structures. Students were required to answer questions such as: why? for what purpose? how? when? where?

Individual feedback was provided to students, along with study suggestions and guidance.

Tool and data analysis

At the conclusion of the 2020 academic year, an electronic survey was administered using the Google Forms platform, created by the discipline itself to collect student feedback (Appendix 1).

The study used a structured questionnaire consisting of 30 items, distributed according to the type of response required: 13 questions were designed using a five-point Likert scale to assess quality, ranging from “excellent,” “good,” “fair,” “poor,” to “very poor”; 10 questions employed a five-point Likert agreement scale, ranging from “strongly disagree” to “strongly agree,” to measure the degree of participant agreement with the statements; and 7 questions were specific, targeting particular aspects related to the investigated items. The survey encompassed various aspects such as students’ perceptions of asynchronous and synchronous classes, practical activities, and other pedagogical strategies, as well as their views on learning, assessment, and self-evaluation. This survey was made available to first-year students in both the full-time and evening study programs.

Data were analyzed descriptively using frequencies and percentages to summarize the students’ perceptions. The data was tabulated using Microsoft Excel (Microsoft™ Ltd., Washington, EUA) and stored in a specific folder on Google Drive.

RESULTS

At the end of the academic year, 74 students responded to the questionnaire, 43 from the full-time program and 31 from the evening program.

Table I - Subject evaluation in percentage

	Excellent	Good	Fair	Poor	Very poor
Course dynamics	63.5	35.4	1.1	0	0
Quality of the classes	75.3	22.4	2.3	0	0
Diversity of learning strategies	61.2	34.5	4.3	0	0
Evaluation systems	23.2	51	18.1	6.5	1.2

Assessment of the subject

The Table I presents the items related to the subject assessment. The available options for rating were excellent, good, fair, poor, or very poor.

Video classes and study strategies

When asked about the video lectures, 97.2% of the students rated the content of the video lectures as excellent or good, and 2.8% as fair. The vast majority, 98.3%, stated that the video lectures were important in aiding their understanding of the content presented, while 1.7% were unsure about this assistance.

In terms of attendance, 94.4% of the students reported having watched all of the video lectures for the course, and 5.6% were unsure if they had attended all the classes. Further concerning the video lectures, 55% of the students mentioned they watched the entire lecture in one go while taking notes, 35.2% watched the lectures in parts, also while taking notes, 8.2% watched the entire lecture without taking notes, and 1.6% watched in parts without taking notes.

Regarding the timing of watching the video lectures, the majority of them (40.5%) watched only in the week leading up to the online class related to the presented topic. 10.6% watched on the same day as the class, 44.4% watched during the week of the class (23.8%) or over the weekend (20.6%), 1.6% watched only on the days of the online classes, and 1.6% occasionally watched them after they were originally scheduled.

Synchronous classes and practical activities

After the asynchronous activities, students participated in synchronous online classes for clarifying doubts, with 57% finding these online sessions excellent for this purpose, 33% finding them good, and 10% finding them fair. The focus and attention during these online meetings were reported as positive by 51.15% of the students. In contrast, 30.8% couldn't confirm if they

Table II - Student understanding in percentage

Students' understanding	%
Complete understanding	38.7
Few doubts	53
Many doubts	6
Not having much understanding	1.1
Completely lost without any understanding	1.1

maintained focus and attention, while 18.05% said they were unable to keep their focus during the online classes.

Regarding online practical classes, 96.8% of the students rated them as excellent or good, and 3.2% as fair. Overall, 94% of the students agreed that the activities conducted virtually during the period of social distancing were excellent or good, and 6% found them fair.

Understanding and participation

Students were also asked about their understanding of the content transmitted and the answers were presented in Table II.

The lack of in-person interaction, which enables closer collective studying, was indicated by 28.95% of the students as having influenced their learning. 43.32% weren't precisely sure if there was an influence and marked it as "maybe," while 27.77% affirmed that the absence of in-person classes had no influence on their learning. Regarding the understanding gained through online classes, 89.35% of the students agreed that these classes contributed to their comprehension of the subject matter, 8.3% were unsure, and 2.3% said that these classes did not assist them.

Other pedagogical strategies

Extracurricular activities were carried out by the students, and 81.3% of them agreed that these activities assisted in their studies. 15.5% were unsure, and 3.2% said that there was no contribution. Among these extracurricular activities

Table III - Challenges related to online classes, indicated as a percentage

Challenges	%
Internet connection issues	17.6
Discipline	43.2
Concentration	48.6
Comprehension	14.9
Participation in online classes	32.4

was reading the recommended literature provided by the professors, and 48.2% stated that they always used these books in their studies. 48.6% used them, but not always, and 3.2% indicated that they rarely used the recommended books.

When asked about teaching tools used in the classes, the students provided the following responses: 94.4% of the students agreed that Lamivir was important for practical study of the subject; 93.35% of the students agreed that Kahoot stimulated their studies and contributed to the learning process; 87.55% agreed that case studies provided stimulus and contributed to their learning; and 92.1% of the students indicated that Google Classroom was excellent.

Motivation and challenges

A portion of the questions presented to the students in the questionnaire aimed to have them self-assess their discipline, responsibility, effort, and dedication. In response, 83.8% mentioned having discipline and responsibility in their studies, 15.5% were unsure about this matter, and 1.1% stated that they neither had discipline nor responsibility in this regard. Regarding effort and dedication, 72.9% of the students self-evaluated themselves as “excellent” or “good” in this aspect, 26% as “average”, and 1.1% as “poor.”

In relation to the dentistry course, 37.95% of the students felt motivated, even in the face of the difficulties caused by the pandemic. Meanwhile, 54.65% stated that they were motivated, but not as much as before this period, and 7.4% indicated that they were not motivated.

Several challenges related to online classes were mentioned and are presented in Table III.

DISCUSSION

With the suspension of in-person classes due to the COVID-19 pandemic, HEIs had to quickly transition to digital environments. The Histology

and Embryology subject at the Dental School of São Paulo State University adopted ERT, incorporating active methodologies to maintain teaching quality. The prior use of strategies such as the flipped classroom facilitated this transition, optimizing the teaching-learning process in an exceptional scenario [18]. The data reveals a largely positive perception among students: 97.7% rated the quality of classes and 74.2% rated the evaluation system as excellent or good.

The organization of synchronous meetings facilitated virtual interaction among teachers and students, as well as among students themselves, which may have contributed to this sense of well-being, as demonstrated by Silva et al. [19]. The utilization of such interactive environments contributes to the process of socialization within the student community, which in turn leads to emotional growth and the creation of favorable learning environments [20,21].

In this context, the theory of self-determination, which addresses the needs for autonomy, competence, and relatedness, highlights the relationship between motivation and well-being in various social situations [22,23], and when applied in an educational context, it can promote learning outcomes in online environments [22] and provide opportunities for enhancing students' adaptive capacity and mental health [23]. This reinforces the positive outcomes that the student-centered dynamics provided by the discipline brought about in the present study.

The students demonstrated a favorable perception of the most diverse tools used in the teaching process, which is in line with the findings of Bardini and Spalding [24], where the authors reported that the use of methodological strategies involving digital tools, similar to those used in the present study, led to greater student engagement in the teaching and learning process, consequently improving learning outcomes.

Regarding some applied methodologies, the use of schematic drawings as a creative approach helps students develop their imagination and creativity, enhancing their repertoire of learning strategies [20]. Furthermore, Kahoot was highlighted as offering a fun and motivational teaching method, as well as immediate feedback [25-29]. The use of a virtual microscope, in turn, promoted greater control over the studied content and encouraged collaborative work between teachers and students. The effectiveness

of this resource has also been demonstrated in other studies [30-33] and corroborated by the data from the present investigation, in which 94.4% of students recognized the importance of Lamivir for practical study during isolation.

The video lectures were widely used, with 94.4% of students watching them in full, and 66.2% rating them as excellent. The vast majority (98.3%) recognized their importance for understanding the content. These data are comparable to those of Pavanelo and Lima [34], whose study using a flipped classroom also obtained favorable responses, with an average of 8.7 on a scale of 0 to 10, in the evaluation of the video lectures. Although the authors observed low adherence to the video lectures, this study demonstrated high participation. The methodology was also considered useful for organizing the studies, in line with Tawfik and Lilly [35], who emphasize the role of video lectures in self-directed learning.

Amemado [36] states in their study that achieving higher student engagement and ensuring good course quality are challenges to overcome in Latin America. With the results indicated by the student responses, it can be inferred that the methodology applied in the course managed to overcome these obstacles, as students had an excellent perception of the quality of online classes and other activities and materials. Additionally, they perceived these methods as important and positively contributing to their studies. Moreover, the divided opinion regarding the impact of the absence of in-person classes suggests that despite the importance of such classes, the model applied in this study ensured a quality of education very close to that of in-person classes.

In self-perception, most students appear to have a positive view of their efforts, affirming that they were able to maintain discipline and responsibility. They also mentioned having good commitment and dedication to their studies and completing the proposed activities. Despite this observation, students indicated a slight motivational deficit, stating that although they still feel motivated, their level of motivation isn't as high as it was before the pandemic. Menezes & Francisco [37] pointed out a valid concern about students' social and emotional well-being, with clear negative impacts in these areas within the educational landscape due to the current circumstances, and Joye et al. [8] state that face-to-face teaching is important for students to become familiar with the university campus and

develop both academically and socially. It can be inferred that this observation justifies the obtained result, where students indicated a mild decline in motivation compared to the periods prior to the pandemic.

Challenges presented within the context of ERT were evident. The main difficulties included maintaining focus at home (highlighted by 48.6% of students who reported difficulty concentrating), expressing themselves during online classes (mentioned by 32.4% of students), and issues with internet connectivity (17.6% of students reported poor connectivity). Similar studies also highlighted technical challenges related to remote learning, particularly in terms of unstable internet connections [5,38,39].

It is worth highlighting that the present study has some methodological limitations, as it brings information from a restricted sample of students, only from one health course and from a Brazilian public university, which can influence perception and difficulties encountered.

The study suggests significant impacts by highlighting the potential for the adoption and continuity of hybrid teaching models in the post-pandemic context and after the experience with e-learning, reflecting on future perspectives in the field of education raises questions about optimizing the use of curriculum time. The incorporation of asynchronous methods can provide more time for students to assimilate presented material, particularly for more complex subjects. Furthermore, the integration of a range of technologies has become a fundamental practice for supplementary studies alongside traditional teaching methods. This approach caters to different types of students and offers an opportunity to reassess pedagogical practices and the curriculum itself [3,40]. Online teaching creates opportunities for students to review, consolidate, and expand upon content introduced in face-to-face classes [40].

Future studies comparing traditional and hybrid teaching with a flipped classroom, including objective measures of academic performance, are needed to verify whether the short-term benefits identified in this study are maintained over time and in different teaching scenarios.

CONCLUSION

The implementation of active methodologies in a virtual teaching environment proved to

be positive within the pandemic context. With the return of in-person activities, the discipline maintained certain online activities, continuing the application of the flipped classroom approach for certain topics in the curriculum. The virtual microscopy laboratory was also retained as a supplementary study tool. In this regard, further studies are needed to make a comparative assessment between traditional in-person teaching activities and active methodologies based on the flipped classroom model, as well as hybrid teaching approaches.

Author's Contributions

EEF: Formal Analysis and Writing – Original Draft Preparation. AON: Investigation and Writing – Original Draft Preparation. JMF: Investigation and Writing – Original Draft Preparation. AAH: Writing – Review & Editing. MACS: Conceptualization, Writing – Review & Editing. LMRV: Conceptualization, Writing – Review & Editing. MS: Project Administration, Conceptualization, visualization, Formal Analysis and supervision.

Conflict of Interest

The authors have no conflicts of interest to declare.

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Regulatory Statement

This study was conducted in accordance with the guidelines of the National Research Ethics Commission (CONEP) and was approved by the Research Ethics Committee on Human Subjects (CEPh) of the School of Dentistry, São José dos Campos, São Paulo State University (UNESP.) Approval number CAAE: 80103124.2.0000.0077.

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Appendix 1 - Form questions

FORM

1. In general, during this pandemic period, the dynamics of the Histology Discipline (asynchronous class - video classes before synchronous classes - Google Meet) were:

☐ Excellent

☐ Good

☐ Fair

☐ Poor

☐ Very poor

2. Did I understand the subject of Histology?

☐ Yes, from the beginning.

☐ Yes, but I had some doubts.

☐ Yes, but I had a lot of doubts.

☐ I didn't understand much.

☐ No, I was completely lost.

3. What is your opinion about the content of the (asynchronous) video classes?

☐ Excellent

☐ Good

☐ Fair

☐ Poor

☐ Very poor

4. The video classes were important and helped with understanding the subject.

☐ I totally agree

☐ I agree

☐ Undecided

☐ I disagree

☐ I totally disagree

5. I watched all the video classes for the Histology course.

☐ I totally agree

☐ I agree

☐ Undecided

☐ I disagree

☐ I totally disagree

6. What is your opinion about the length of video classes?

☐ Excellent

☐ Good

☐ Fair

☐ Poor

☐ Very poor

7. What day did you usually watch the video classes?

☐ On the day of the discipline.

☐ Until the weekend.

☐ On the weekend.

☐ During the week of the online class on Google Meet.

☐ On the day of the online class on Google Meet.

8. Regarding video classes.

☐ I watch the whole class at once without taking notes.

☐ I watched the whole class at once and took notes.

☐ I attended the class in parts and didn't take notes.

☐ I watched the class in parts and took notes.

☐ I usually don't watch the video classes.

9. What did you think of the online classes on Google Meet (synchronous) to clarify doubts?

☐ Excellent

☐ Good

☐ Fair

☐ Poor

☐ Very poor

10. I stayed focused and paid attention in online classes on Google Meet.

☐ I totally agree

☐ I agree

☐ Undecided

☐ I disagree

☐ I totally disagree

11. Online classes on Google Meet were important and helped with understanding the subject.

☐ I totally agree

☐ I agree

☐ Undecided

☐ I disagree

☐ I totally disagree

12. What did you think of the PRACTICAL online classes on Google Meet (synchronous)?

☐ Excellent

☐ Good

☐ Fair

☐ Poor

☐ Very poor

13. The virtual slide laboratory, Lamivir, available on the AVA, was important for the practical study of the subject.

- ☐ I totally agree
- ☐ I agree
- ☐ Undecided
- ☐ I disagree
- ☐ I totally disagree

14. Extracurricular activities (questionnaires, reports, schematic drawing, case study) helped me in my studies.

- ☐ I totally agree
- ☐ I agree
- ☐ Undecided
- ☐ I disagree
- ☐ I totally disagree

15. I consider kahoot positive, in the sense that it stimulates my studies and contributes to my learning.

- ☐ I totally agree
- ☐ I agree
- ☐ Undecided
- ☐ I disagree
- ☐ I totally disagree

16. I consider the Case Study positive, in the sense that it stimulates my studies and contributes to my learning.

- ☐ I totally agree
- ☐ I agree
- ☐ Undecided
- ☐ I disagree
- ☐ I totally disagree

17. I consider the "Photo Contest" positive, in the sense that it motivates me in the Discipline.

- ☐ I totally agree
- ☐ I agree
- ☐ Undecided
- ☐ I disagree
- ☐ I totally disagree

18. What did you think about using Google Classroom in the subject?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very poor

19. What do you think about punctuality in meeting class start and end times?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very poor

20. What do you think about the deadline for submitting activities?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very poor

21. In general, the quality of classes in the Histology Discipline during this pandemic period was.

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very poor

22. In general, the other virtual activities developed in the Histology Discipline during this pandemic period were:

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very poor

23. What did you think about the diversity of learning strategies in the Histology discipline?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very poor

24. Considering this entire period of online classes, what did you think of the Discipline evaluation systems?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very poor

25. DIFFICULTIES – My biggest difficulty with distance learning was:

- ☐ I don't have a good internet connection.
- ☐ I can't maintain discipline to do the activities.
- ☐ I can't concentrate at home due to family interference.
- ☐ I can't understand the subject very well.
- ☐ I can't express myself in online classes.

26. Did the lack of collective study interaction influence your learning?

- ☐ Yes
- ☐ Perhaps
- ☐ No

27. I used the textbook recommended by the subject teachers for my studies.

- ☐ Always
- ☐ Most of the time
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

28. SELF-ASSESSMENT – I was able to maintain discipline and self-responsibility to complete the activities proposed by the subject.

- ☐ I totally agree
- ☐ I agree
- ☐ Undecided
- ☐ I disagree
- ☐ I totally disagree

29. SELF-ASSESSMENT – How do I consider my commitment and dedication to the

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very poor

30. Regarding your Course as a whole, did you feel motivated?

- ☐ Yes
- ☐ Yes, but not anytime soon.
- ☐ No, I got discouraged.