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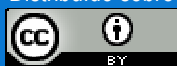
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## Perceptions of academic monitoring in the teaching of Basic and Comparative Histology

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### ABSTRACT

**Introduction:** Academic monitoring is a teaching support activity that helps students with learning difficulties, contributes to improving the quality of teaching and stimulates interest in teaching. **Objective:** This experience report presents the data obtained and the monitor's perceptions during his activities in the Basic and Comparative Histology discipline of two classes of the undergraduate course in Biological Sciences at a higher education institution. In the academic semesters of 2017 and 2018, the monitor obtained the frequency of demand for the monitoring and for the contents of each evaluation, the contents of greater and lesser difficulty of the discipline, and the degree of student satisfaction in relation to the complementary material produced. The students' reports and the monitor's reflections about what was experience were also analyzed. **Results:** The results showed that the frequency of looking for the monitor increased over the two school semesters, and that the interpretation and layout of the photomicrographs was one of the most sought after contents by both classes, but not the most difficult. In this regard, the content on cartilaginous, nervous, blood and circulatory system tissues were considered the most difficult, but without consensus among the classes. However, both agreed that the supplementary material produced was useful. For the monitor, this experience proved to be fundamental for his personal, academic and professional growth. **Conclusion:** thus, academic monitoring enabled the deepening of the discipline's contents and the development of didactic and pedagogical skills by the monitor, as well as a diagnostic tool for the teacher.

### KEYWORDS

Monitoring. higher education. Biology. Teaching training. Teaching methods.

## Percepções da monitoria acadêmica no ensino de Histologia Básica e Comparada

### RESUMO

**Introdução:** a monitoria acadêmica é uma atividade de apoio ao ensino que auxilia os alunos nas dificuldades de aprendizagem, contribui para a melhoria da qualidade do ensino e estimula o interesse pela docência. **Objetivo:** esse relato de experiência apresenta os dados obtidos e as percepções do monitor durante suas atividades na disciplina de Histologia Básica e Comparada de duas turmas do curso de graduação em Ciências Biológicas de uma instituição de ensino superior. **Metodologia:** nos semestres letivos de 2017 e 2018, o monitor obteve a frequência de procura pela monitoria e pelos conteúdos de cada avaliação, os conteúdos de maior e menor dificuldade da disciplina e o grau de satisfação discente em relação ao material complementar produzido. Os relatos discentes e as reflexões do monitor a respeito da experiência também foram objeto de análise. **Resultados:** Os resultados mostraram que a frequência de procura pelo monitor aumentou ao longo dos dois semestres letivos, e que a interpretação e esquematização das fotomicrografias foram um dos conteúdos mais procurados pelas duas turmas, mas não os mais difíceis. Nesse quesito, os conteúdos sobre os tecidos cartilaginosa, nervoso, sanguíneo e do sistema circulatório foram considerados os de maior dificuldade, mas sem consenso entre as turmas. Entretanto, ambas concordaram que o material complementar produzido foi útil. Para o monitor, esta experiência mostrou-se fundamental para o seu crescimento pessoal, acadêmico e profissional. **Conclusão:** Assim, a monitoria acadêmica possibilitou o aprofundamento dos conteúdos da disciplina e o desenvolvimento de habilidades didáticas e pedagógicas pelo monitor, bem como ferramenta diagnóstica para o professor.

### PALAVRAS-CHAVE

Monitor. Ensino superior. Biologia. Formação docente. Métodos de ensino.

## Percepciones del seguimiento académico en la enseñanza de la Histología Básica y Comparada

### RESUMEN

**Introducción:** El seguimiento académico es una actividad de apoyo a la docencia que ayuda a los alumnos con dificultades de aprendizaje, contribuye a mejorar la calidad de la enseñanza y estimula el interés por la docencia. **Objetivo:** Este relato de experiencia presenta los datos obtenidos y las percepciones del monitor durante sus actividades en la disciplina Histología Básica y Comparada de dos clases de la carrera de Licenciatura en Ciencias Biológicas de una institución de educación superior. En los semestres académicos de 2017 y 2018, el monitor obtuvo la frecuencia de demanda para el seguimiento y para los contenidos de cada evaluación, los contenidos de mayor y menor dificultad de la disciplina, y el grado de satisfacción de los estudiantes en relación al material complementario, producido. También se analizaron los relatos de los alumnos y las reflexiones del monitor sobre lo vivido. **Resultados:** Los resultados mostraron que la frecuencia de búsqueda del monitor aumentó en los dos semestres escolares, y que la interpretación y maquetación de las microfotografías fue uno de los contenidos más buscados por las dos clases, pero no el más difícil. Al respecto, los contenidos sobre tejidos cartilaginosa, nerviosos, sanguíneos y del sistema circulatorio fueron considerados los más difíciles, pero sin consenso entre las clases. Sin embargo, ambos coincidieron en que el material complementario producido fue útil. Para el monitor, esta experiencia resultó fundamental para su crecimiento personal, académico y profesional. **Conclusión:** Así, el seguimiento académico posibilitó la profundización de los contenidos de la disciplina y el desarrollo de habilidades didácticas y pedagógicas por parte del monitor, así como una herramienta de diagnóstico para el docente.

### PALABRAS CLAVE

Monitor. Enseñanza superior. Biología. Formación del profesorado. Método de enseñanza.

### CRediT

- **Recognitions:** Not aplicable
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## 1 Introduction

Monitoring is a teaching-learning modality that, through formative teaching activities, gives the student-monitor the opportunity to develop their pedagogical skills in teaching practice and improve their learning, as well as their experiences through an academic routine (SOUSA JÚNIOR et al., 2008; VICENZI et al., 2016). In addition to complementing the knowledge of the student monitor, academic monitoring provides both the capacity for academic-personal maturation and the opportunity to experience different situations that may arise during their academic and/or professional career. Moreover, it enriches the learning in the field of study (FILHO; SANTOS; MALHEIROS, 2008), as well as the training in the undergraduate course with the inseparability between teaching, research and extension (MATOSO, 2014). According to Lira et al. (2015), the practical experience in the teaching environment allows the monitor to encounter different issues related to teaching, which will serve as a basis for their future work, allowing them to perform this profession more effectively and adequately, as well as being prepared to deal with complex situations. It is also important to emphasize that the student observer becomes self-critical, an investigator of his teaching practice and responsible for the demands that may arise, observing his limitations and abilities and thus being able to improve them. Moreover, it is the monitor's preference to produce different teaching materials (handouts, summaries, books, macro models, games, among others), always with the teacher's guidance. According to Neves et al. (2017), the production of teaching materials allows the development of pedagogical practices in the construction of knowledge, as well as enriching pedagogical moments through the development of dynamic and creative methodologies to improve the teaching-learning process for students. Another pedagogical aspect offered by academic monitoring is the dialogical interaction between the monitor and the students, which contributes to a friendly teaching-learning environment (VILLA; CADETE, 2001; BORSATTO et al., 2006).

According to Silva and Belo (2012), the monitor is a link between the student and the teacher who helps in the interlocution between these characters, allowing the teaching-learning process to be better carried out, going through the processes of student evaluation by the teacher. In this way, the monitor acquires positive experiences that give them an expectation of becoming a future teaching professional (TIBOLA et al., 2020). As a result, new horizons and academic perspectives are revealed from the knowledge acquired together (student-monitor-teacher), and new proposals and different ways of applying this new knowledge are presented (MATOSO, 2014). The subject of Basic and Comparative Histology belongs to the subfield of Morphology and is a curricular component of various undergraduate courses in the fields of Biological Sciences, Health and Agricultural Sciences.

The aim of the course is to provide students with general knowledge of basic and specialized tissues, as well as a histological study of organs and systems from a comparative perspective among the higher vertebrates. To this end, the instructor normally uses two teaching methods: theoretical classes (held in the regular classroom) and practical classes (held in a laboratory environment with light microscopes). It is important to note that the practical

classes cover the basics of the tissue structures that can be seen on histologic slides, as well as the relationship of the various topics studied during the lectures to this material.

This work aims to: analyze and identify the frequency of student demand for the monitor, considering the content of each assessment and those of greater and lesser difficulty; assess whether the complementary material developed was useful in learning the content; report in a quantitative and descriptive way the students' reports and complemented with the monitor's reflections on the experience of monitoring the Basic and Comparative Histology curricular component.

## 2 Development

Academic monitoring is linked to the Undergraduate Monitoring Program of the Pro-Rectorate of Education (PROENS) of the Federal University of the Triângulo Mineiro (UFTM). Before the start of each semester's activities, a selection process is carried out for the selection of monitors, via a public notice, in which vacancies are made available for paid (scholarship) and volunteer student-monitors. To apply for academic monitoring, the student must be regularly enrolled on the course, have already studied the desired curricular component and have passed with an average of 7 (seven) or higher.

The selection is made up of a theoretical and/or theoretical-practical test, which assesses the candidate's knowledge of the entire syllabus of the curricular component; an individual or group interview, in which the teacher in charge observes and assesses the candidates on their knowledge of the subject's teaching plan and the course's pedagogical project, on their knowledge of the Monitoring Program, on the proposed strategies for improving the quality of teaching, on their ability to communicate and express themselves orally and in writing, and on their ability to work as part of a team; and finally, an analysis of their academic transcripts.

The monitors selected, according to the rules set out in the public notice, must complete a total workload of 12 (twelve) hours a week, totaling 180 (one hundred and eighty) hours at the end of the academic semester under the supervision of the teacher responsible for the curricular component.

In this context, this paper presents the results obtained by academic monitoring in the subject of Basic and Comparative Histology, which took place in the second semester of 2017 and 2018 for two different classes of the Biological Sciences degree course at the Iturama University Campus of UFTM. The monitor carried out the monitoring activities for the students in the afternoon at the university's Teaching Laboratory, spending 9 (nine) hours a week providing face-to-face assistance to the students, which was distributed from Monday to Friday, while the other 3 (three) hours were allocated to studying the content and developing complementary materials. It is important to note that the distribution of these hours during the week was agreed between the tutor and the classes, to encourage student participation in this form of teaching support, with the approval of the teacher.

### *Student assistance during academic monitoring*

The assistance provided to students focused on both the theoretical and practical content of the subject. During the theoretical sessions, the monitor had a room equipped with a whiteboard with markers, a multimedia projector, books, and atlases of basic histology, all provided by the institution. In the classroom and on the days and times previously agreed, the student reviewed the subjects covered in class by the teacher, as well as helping to solve the supplementary exercises on the subject content, which were periodically made available by the teacher. In addition, the students were encouraged to take part in discussions to foster the development of interpersonal relationships between the monitor and the students. For the practical content, the monitor had the same resources as above, as well as digital photomicrographs of the histological slides worked on during the practical classes with the teacher. These photomicrographs were projected so that the students could diagram the morphology of the tissue studied in the practical notebook, as well as interpret the histological sections and study the cells and structures present.

### *Production of complementary material*

Together with the subject lecturer, the student-monitor developed various theoretical and practical materials on the content taught and discussed in class, based on an intensive literature review. All this material, containing texts and captioned photomicrographs, sought to contribute to the teaching-learning process, as well as serving as support material for study. In all, three complementary materials were produced, each containing a set of topics to be covered in each theoretical-practical assessment, following the course syllabus (Tab.1).

**Table 1.** Organization of the contents of the Basic and Comparative Histology subjects, with their respective theoretical and practical assessments.

<b>1ST TEST</b>	<b>2ND TEST</b>	<b>3RD TEST</b>
Histological Processing	Bone Tissue	Circulatory System
Epithelial Tissue	Blood Tissue	Pulmonary System
Connective Tissue	Adipose Tissue	Digestive System
Cartilaginous Tissue	Muscle Tissue	Urinary System*
	Nervous Tissue	Reproductive System*

Caption: \*were not part of the syllabus for the 2018.2 class.

Source: Teaching plans for the Basic and Comparative Histology course in 2017.2 and 2018.2.

After the supplementary materials had been corrected, they were sent by email to the students enrolled in the course before the date of each assessment. In this way, students would be free to use the material digitally (on smartphones, computers, notebooks, or tablets) or in print.

### *Student attendance and evaluation of academic monitoring*

In which this teaching modality was offered to the 50 (fifty) students enrolled in the subject, 25 (twenty-five) of whom were undergraduates, for each semester analyzed: in 2017

and 2018. The data obtained was expressed graphically through “frequency distribution,” using GraphPad Prism® 8.4.3 software. As this is a qualitative report, the verbal records about the most and least difficult content that the students chose during the academic tutoring were recorded, as well as those reports about satisfaction and the contribution to student learning, both from the tutoring and from the complementary materials offered. The reflections and perceptions were reported, analyzed, discussed and compared between the 2017 and 2018 classes.

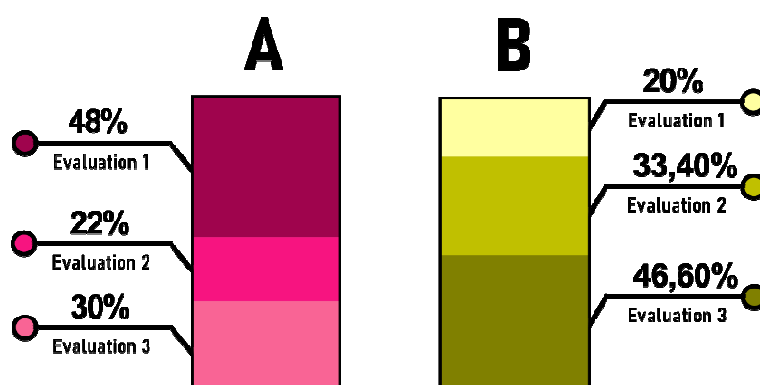
### 3 Results and discussion

The student-monitor carried out approaches ranging from guidance and clarification of students' doubts in relation to the content, to the development of teaching material for the subject, which was offered to students. Castro and Lima (2019) point out that academic tutoring plays an important role in providing tutors with the opportunity to get closer to teaching as they experience and expand their teaching skills through teaching practice. In addition, it has been discussed that the monitor has the possibility of reviewing previously learned content and ensuring a dialogical interaction with students, providing a teaching-learning environment, as students feel more comfortable asking questions to the monitor, serving as an intermediary between the teacher and the students (CASTRO; LIMA, 2019; OLIVEIRA, 2019).

#### *Frequency of student demand for academic monitoring*

From the data on the frequency of student demand for monitoring (Graph 1), we can see that there was a 48% demand by students in the 2017.2 class (Graph 1A) for the contents of the 1st theoretical-practical assessment, which was higher than the demand for the same contents in the 2018.2 class (20%; Graph 1B).

**Graph 1.** Frequency of student demand for tutoring in the 2017.2 (A) and 2018.2 (B) academic semesters.



Source: the authors

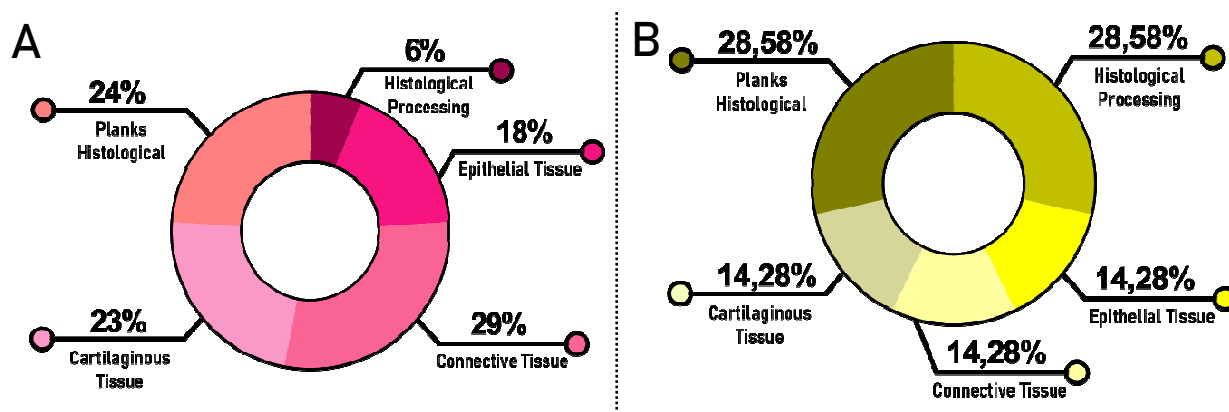
However, this scenario changed as the assessments took place, as the 2018.2 students had a greater demand for the contents of the 2nd and 3rd theoretical-practical assessments (33.4% and 46.6%, respectively; Graph 1B), compared to the 2017.2 class, which sought academic monitoring for the same assessments with 22% and 30% frequency (Graph 1A).

However, when each class is analyzed individually, it can be seen that the 2017.2 students fluctuated in terms of the frequency with which they sought academic monitoring. Thus, there was a 26% reduction in the frequency of demand for the monitor in the period between the first two theoretical-practical assessments, followed by a slight increase of 8% in the period between the 2nd and 3rd assessments (Graph 1A). Silva and Belo (2012) reported that although undergraduates recognize the role and importance of the tutor in the teaching-learning process, many of them ignore this figure even when they have some difficulty with the content studied. These same authors found that the difficulty in reconciling academic-personal activities with the search for a tutor, the lack of interest for the students and the ineffective performance of the tutor were determining factors in undergraduates not opting for academic tutoring (SILVA; BELO, 2012). On the other hand, there was a steady increase in the frequency of students in the 2018.2 class looking for academic tutoring (Graph 1B). It is believed that these increases, in both classes, may be related to the grades obtained by the students in previous assessments and the imminence of the end of the academic semester.

### Contents of the first theoretical-practical assessment

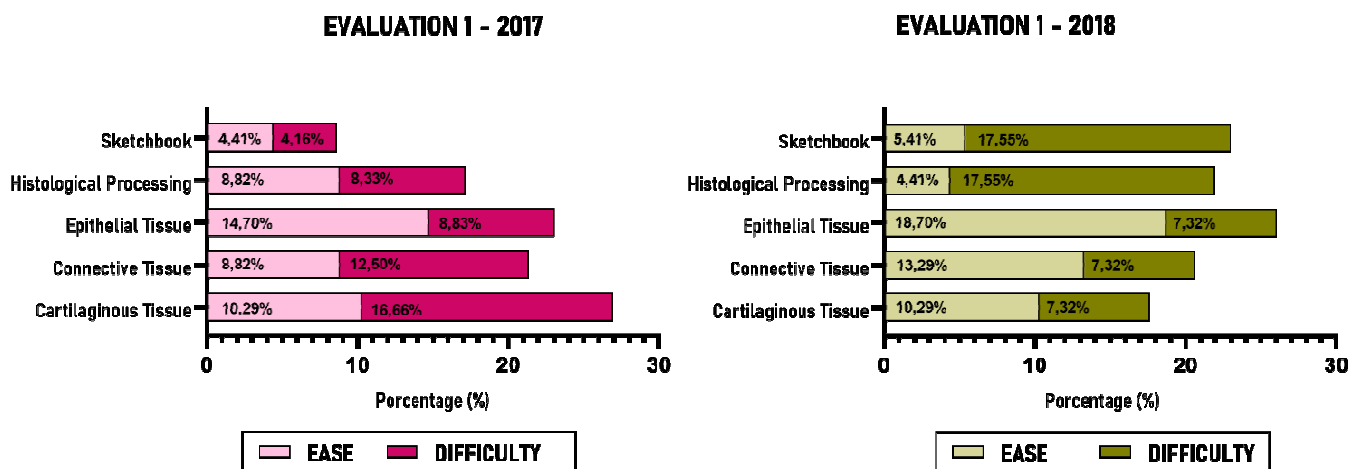
When the contents of each assessment are analyzed individually between both classes, other relevant information can be noted. In relation to the 1st theoretical-practical assessment, the contents of connective tissue, the interpretation, and schematization of photomicrographs of histological sections, and cartilaginous tissue were the most sought after by students in the 2017.2 class (29%, 24% and 23%, respectively; Graph 2A). However, only the connective and cartilaginous tissues were chosen as the most difficult by those students, with 12.5% and 16.66%, respectively (Graph 3A).

**Graph 2.** Frequency of student searches for the contents of the first theoretical-practical assessment of Basic and Comparative Histology in 2017.2 (A) and 2018.2 (B).



Source: the authors.

**Graph 3.** Frequency of students who found the contents of the first theoretical-practical assessment of Basic and Comparative Histology in 2017.2 (A) and 2018.2 (B) easy and difficult.



Source: the authors.

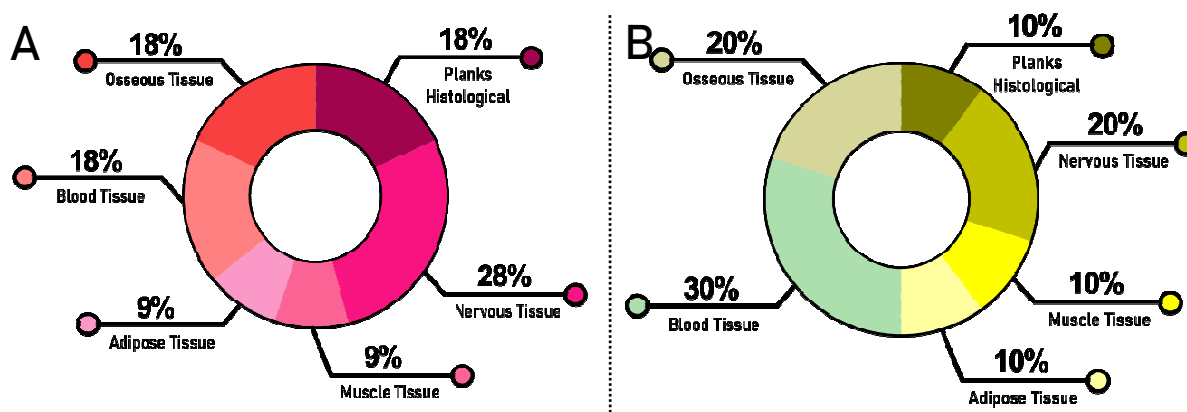
On the other hand, the content of these tissues was among the easiest for the 2018.2 class, with 13.29% for connective tissue and 10.29% for cartilaginous tissue (Figure 3B). However, for this class, the content on histological processing and the interpretation and schematization of photomicrographs of histological sections were the most requested (both with 28.58%) (Graph 2B) and the most difficult, with 17.55% of votes each (Graph 3B). Therefore, we can see that the most difficult content was also the one most frequently searched for by the students during the academic monitoring, as well as the peculiarities inherent to each class.

**Contents of the second theoretical-practical assessment**

When the contents of the 2nd theoretical-practical assessment were analyzed, it was observed that the 2017.2 class sought academic monitoring most frequently in relation to the contents of nervous (28%), bone (18%) and blood (18%) tissues, as well as in relation to the interpretation and schematization of histological sections (18%) (Graph 4A). However, although these contents were the most popular, they were not considered to be the most difficult. In this sense, two facts can be observed: 1- although the content on nervous tissue was considered difficult by 12.5% of the undergraduates, 10.29% of them considered it easy; and 2- contradictory, even though the content on muscle tissue was the least sought after by the students in the academic monitoring, it was considered difficult by 12.5% of the students (Graph 5A).

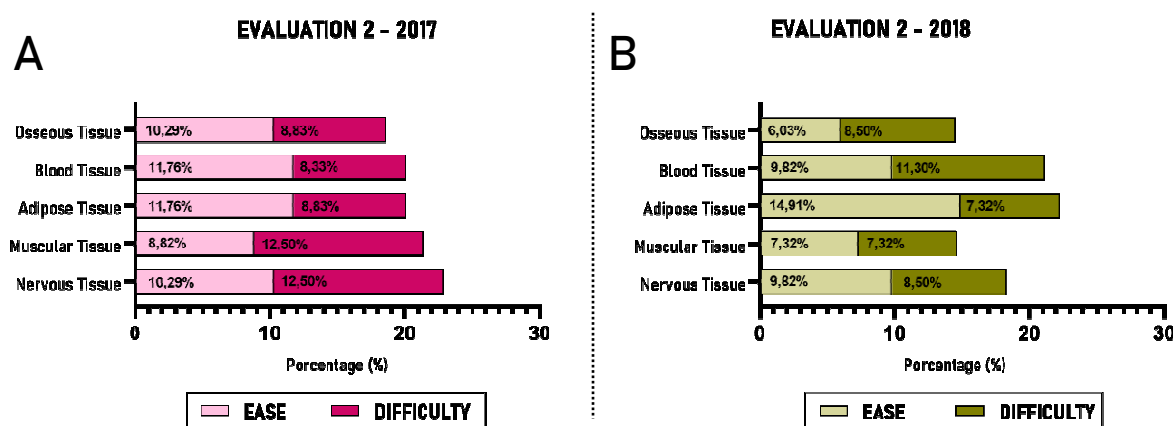


**Graph 4.** Frequency of student searches for the contents of the second theoretical-practical assessment of Basic and Comparative Histology in 2017.2 (A) and 2018.2 (B).



Source: the authors.

**Graph 5.** Frequency of students who found the contents of the second theoretical-practical assessment of Basic and Comparative Histology in 2017.2 (A) and 2018.2 (B) easy and difficult.



Source: the authors.

Oliveira (2005) relatou que graduandos de Oliveira (2005) reported that undergraduates on a Biological Sciences course showed some confusion about the rules relating to this study of tissue when they were still studying Histology; a fact that was repeated in other related subjects during the course. The students in the 2018.2 class also sought the student-monitor more often in relation to the content of nervous and bone tissues (20% for each), but there was more demand for content on blood (30%) (Graph 4B), which was chosen as being difficult, with 11.3% of the votes (Graph 5B). Although the student-monitor's help with the histology boards was not frequently sought, the students in this class considered them to be the most difficult content (17.55%; Graph 5B).

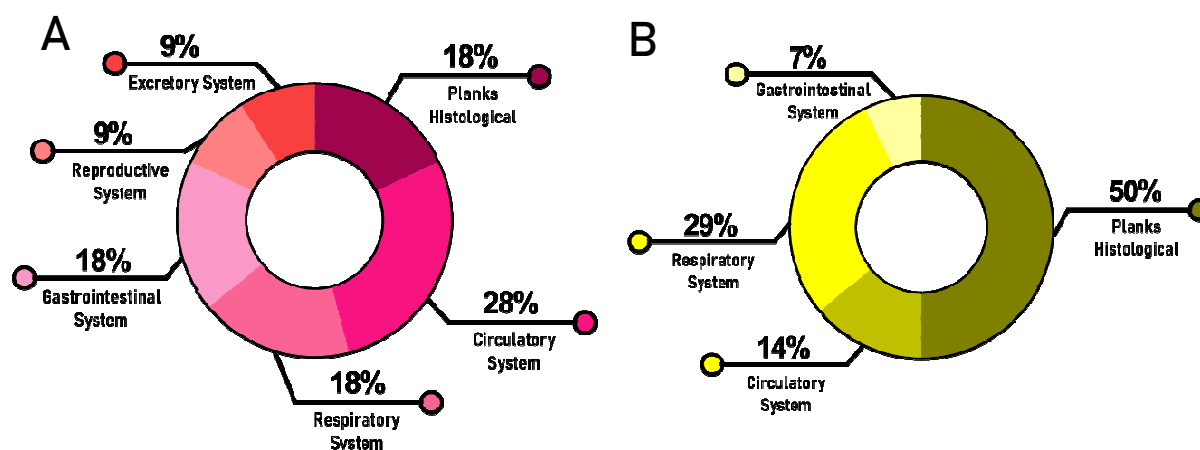
Considering both classes, some students corroborate the results of García et al. (2018), who considered bone and nerve tissue to be among the most difficult for Biological Sciences undergraduates. In that study, the students pointed out that the complexity of the terms used and the content itself are among the reasons for this difficulty (GARCÍA et al., 2018). In

addition, it is possible to see that there were different demands among the students in the classes in this study, suggesting that student difficulties and facilities should be analyzed and discussed by the teacher and the student-monitor on an individual basis.

### Contents of the third theoretical-practical assessment

Regarding the Comparative Histology content, which was the subject of the last theoretical-practical assessment, it is important to note that the content taught by the lecturer on the excretory and reproductive systems, which was previously covered until 2017, was relocated to another subject due to the restructuring of the syllabuses of the curricular components of the current curriculum matrix. Therefore, this content was not analyzed for the 2018.2 Basic and Comparative Histology class. That said, it was observed that the 2017.2 undergraduates sought academic monitoring most frequently for content on the circulatory (28%), digestive (18%) and respiratory (18%) systems, as well as for the interpretation and schematization of histological sections (18%; Graph 6A).

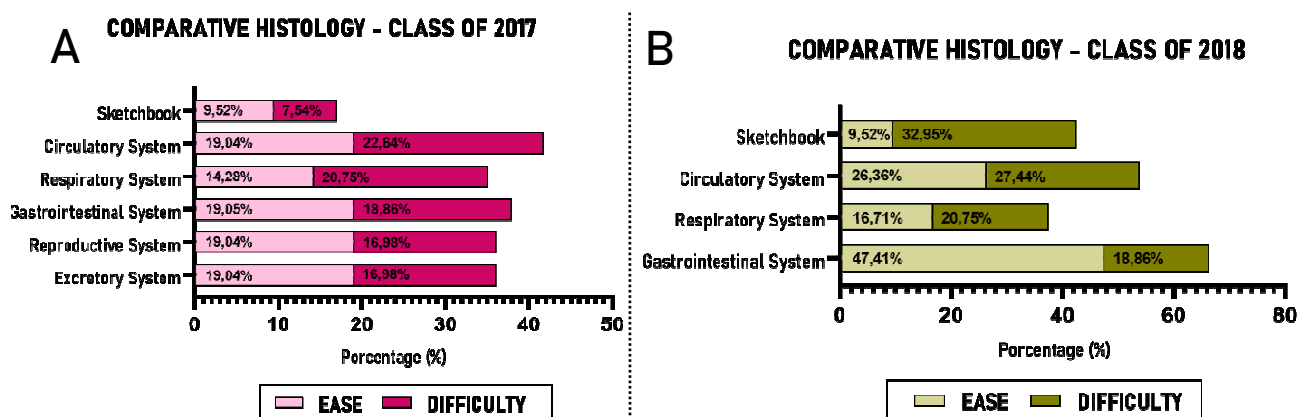
**Graph 6.** Frequency of student searches for the contents of the third theoretical-practical assessment of the Basic and Comparative Histology course in 2017.2 (A) and 2018.2 (B).



Source: the authors.

Of these, the content on the circulatory, respiratory and digestive systems was considered the most difficult with 22.64%, 20.75% and 18.86% of the votes, respectively. However, 19.05% of the students considered the content on digestive tissue to be easy (Graph 7A).

**Graph 7.** Frequency of students who found the contents of the third theoretical-practical assessment of Basic and Comparative Histology in 2017.2 (A) and 2018.2 (B) easy or difficult.



Source: the authors.

The students in the 2108.2 class also sought the student-monitor most frequently about photomicrographs of histological sections (50%), followed by the contents of the respiratory (29%) and circulatory (14%) systems (Graph 6B). These same contents were listed as the most difficult, as follows: 32.95% of the students considered the interpretation and schematization of histological sections to be the most difficult, followed by the circulatory (27.44%) and respiratory (20.75%) systems. However, it is worth noting that 26.36% of the students considered the content on the circulatory system to be easy (Graph 7B).

### *Photomicrographs of histological sections: schematization and interpretation*

It is notable that the sketchbook (one of the subject's assessment methods), in which students have to draw diagrams of histological sections, as well as interpret them, was one of the contents they frequently sought during academic monitoring and/or considered to be difficult, both in the basic content and in the comparative content of the subject.

Histology appears to be difficult for students due to the nature of the science itself, as well as the inexperience of undergraduates with microscopy and the interpretation of histological images (SOTGIU et al., 2022). Furthermore, a complete understanding of Histology requires the development of three-dimensional mental images of cellular arrangements, based on two-dimensional images contained in histological sections (McMILLAN, 2001). Thus, García et al. (2018) have shown that students' greatest difficulties in Histology lie in a lack of anatomical knowledge, difficulty in delimiting cell boundaries and their individualization, orientation of histological sections and, finally, a lack of knowledge of the functions of the histological dyes used in the sections viewed.

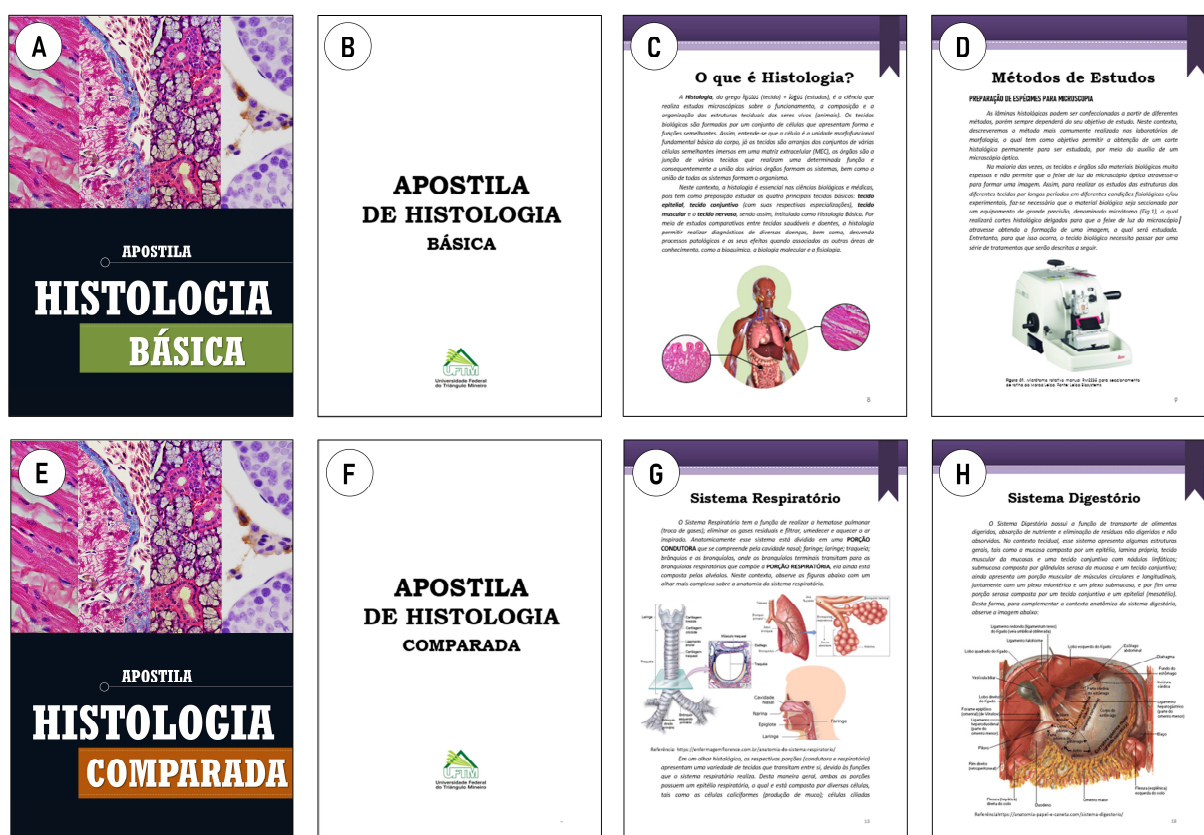
On the other hand, different authors have stated that the schematization of histological sections improves the interpretation and learning of the content, as this process makes it possible to concretize the abstract, enables reasoning based on a visual model, develops the students' cognitive process and helps them to build connections, in addition to acting on the

retention of the knowledge studied (MAYER, 1989; BALEMANS et al., 2016; BACKHOUSE et al., 2017).

**Complementary material**

All the students who sought academic monitoring during the two periods analyzed agreed that the complementary material (Fig.1), prepared jointly by the monitor and the subject teacher, contributed to their understanding and learning of the theoretical and practical content worked on during the respective school semesters.

**Figure 1.** Complementary material developed by the student-monitor on the contents of Basic Histology (A-D) and Comparative Histology (E-H) made available during the academic monitoring of the respective subject in the years 2017.2 and 2018.2.



Source: the authors.

According to Freitag (2017), teaching resources that are suitable for a pedagogical strategy have a substantial impact on the teaching-learning process of students, as well as contributing significantly to the engagement and interaction between teachers and students. With the constant process of globalization, digital technology has made teaching methodologies more effective in the teaching-learning process, through quick access to different information (ALMEIDA, 2003; LIMA; ARAÚJO, 2021). Therefore, the material developed by the student-monitor prioritized making it available digitally, making it possible for students to access and help them at any time.

### *Perceptions and difficulties faced by student-monitors*

The tutor is defined as a person who accompanies and assists students, with the aim of resolving any doubts about the content that may arise during the course (BORSATTO et al., 2006; NATÁRIO; SANTOS, 2010). To achieve this, the tutor must constantly read and revise the course content, as well as develop and improve forms of communication to properly convey the information that needs to be clarified. Thus, academic monitoring contributed significantly to the professional training of the tutor, as also reported by Matoso (2014) and Andrade et al. (2017). In this sense, studies by Barbosa, Azevedo and Oliveira (2014), Figueiredo and Frigo (2014), Silva and Lacerda (2015); Andrade-Júnior and Barbosa (2017) and Boeira et al. (2020) emphasize that students who work as monitors become more proactive, creative and communicative people, with a greater sense of responsibility and closer ties to the teaching routine. However, how to teach the content to answer questions more clearly and succinctly for each student was one of the main difficulties identified by the student monitors. Yamanaka and Gonçalves (2017) showed that the greatest difficulties and challenges faced during the training of future teachers are mainly related to the difficulty of students' learning, since each one learns differently and with individual limitations and difficulties. According to Neves et al. (2017), teaching practice is full of challenges because, although all students must be included in the teaching-learning process, knowledge must be meaningful for each of them and, consequently, this process must be contextualized and must value student participation. Therefore, academic tutoring allows tutors to seek strategies for building their knowledge to train professionals who are capable of exercising their role as educators and actively criticizing the reality in which they work.

According to Lima et al. (2019), monitors face difficulties regarding the need to apply a different and more attentive approach so that the student can assimilate the content more easily, since each student learns differently. In order to make up for the lack of diversity in pedagogical tools for practical content, the monitor, under the guidance of the subject lecturer, set about producing complementary material to contribute to the students' teaching-learning process. According to Gomes (2019), teaching materials help to make classes more dynamic, motivating and capable of arousing students' interest, thus favoring meaningful learning. The creation of this supplementary material created challenges for the student-monitor, who experienced difficulties in planning the content, as well as in drawing up and applying concept maps. In addition, the search for and selection of diagrams and photomicrographs of the various biological tissues with a good resolution of the cell structures was also a difficulty presented by the monitor when preparing this supplementary material. However, the monitor considered the experience of preparing the complementary materials to be enriching, as it contributed significantly to both his didactic improvement and his creativity, consequently providing new horizons for the creation of new didactic tools for teaching Histology. According to Neves et al. (2017), the production of teaching materials involves activities that train and prepare graduates (student-monitors) for teaching, as well as encouraging the development and use of alternative proposals (teaching materials) as tools to facilitate the teaching-learning process.

It is important to emphasize that the student-monitor's commitment went beyond the

classes, the pedagogical support and the preparation of complementary material for the students, as he participated in different scientific events, such as: Jornada Integrada de Ensino, Pesquisa e Extensão (JIEPE) at UFTM; I Congresso de Biologia (CONBIO) - UNESP/Bauru; II Semana da Biologia (II SEMBIO) at UFTM; with the aim of providing popularization and informal communication of science, as well as facilitating new relationships and essential exchanges of knowledge between students and researchers, about academic monitoring as a diagnostic tool for teaching and learning. In addition, participation in each event enabled new integrations of knowledge in different areas; it improved their creative skills when developing their presentations, whether oral or in a scientific panel; it enabled them to acquire new perceptions in different extracurricular activities, as well as generating motivation to carry out new research in the technical-scientific field.

## 4 Conclusion

From the data obtained, it was possible to observe that all the classes sought the student-monitor to answer their questions, but that there was a divergence between the contents considered to be the most difficult, given that the 2017 class considered the cartilaginous and nervous tissue and the circulatory and respiratory systems to be the most difficult. On the other hand, the 2018 class considered blood tissue and the circulatory system to be the most difficult. However, unanimously, the classes reported great difficulty in interpreting and schematizing the histological slides. In this way, the teacher and the student-monitor were able to analyze and rethink the strategies used in the teaching-learning process regarding the theoretical and practical content of the Basic and Comparative Histology course.

According to the student-monitor's reports, academic monitoring was essential for improving his technical and didactic skills in terms of developing perceptions that involve teaching experience and practice, as well as the opportunity to review and deepen the content previously learned in the subject, also through the development of complementary study material (workbook). This, in turn, was highly praised and well received by the classes in this study. Thus, tutoring proved to be fundamental to the tutors' personal, academic and professional growth, as it enabled them to improve their interpersonal and cognitive skills, providing greater confidence in dealing with unknown people and, consequently, confirming their interest in teaching.

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