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STRATEGIES FOR PRACTICAL CLASSES OF THE AGRONOMY COURSE EAD MODALITY IN THE COVID-19 SCENARIO

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Abstract: The COVID-19 pandemic scenario impacted several sectors, including education. Changes that were not planned emerged and demanded the use of emergency and immediate strategies to meet didactic components and fundamental activities for student learning. In this context, the objective of this work is to present strategies used to carry out practical activities for the EaD Agronomy course, previously carried out in person, in the Virtual Learning Environment (AVA) with the follow-up of tutors.
Keywords: Distance education; agribusiness; education; pandemic.

INTRODUCTION

An atypical scenario in 2020 established a global pandemic situation, due to a disease caused by a new coronavirus (Sars-CoV-2), resulting in the emergence of the disease called COVID-19. Social isolation is one of the main security measures to prevent the spread of the virus, and with this situation the traditional processes of face-to-face classes have been restructured.

In the Agronomy course offered in Distance Education (DE) practical classes are held in person either in laboratories, experimental fields or technical visits. Hack (2011) explains that distance education is a modality that enables the elimination of geographical and temporal distances by providing the student with the organization of their time and place of study.

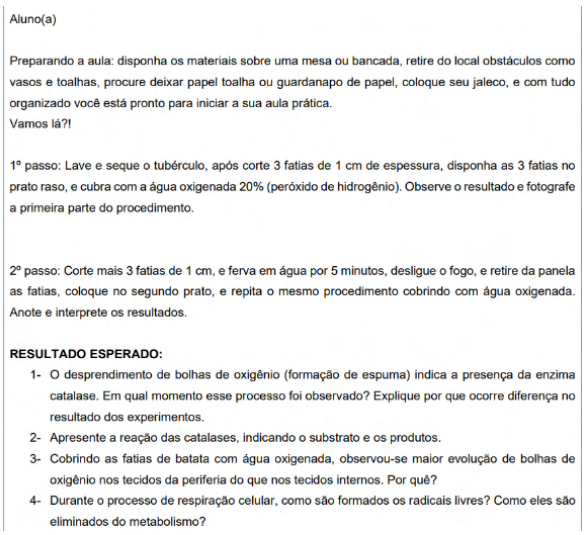
This way, in this pandemic context with the suspension of face-to-face practical classes, to meet legal requirements, the course, at first, adopted innovative strategies to provide students with the development of skills established in the practical components of each discipline. Thus, this work aims to report these strategies used to enable students to carry out adapted practical activities.

MATERIAL AND METHODS

In order to offer practical classes, in the 1st semester of 2021, technological resources were added, such as educational simulators, demonstrative and descriptive practical class scripts, with the use of demonstration and monitoring of experiments by professors-tutors in the Virtual Learning Environment (VLE) and opening of a specific thematic forum for debate of activities. It is noteworthy that the teaching plan of each subject was respected.

For a better understanding of the actions involving the adapted practical classes, follow the initiatives:

1- Demonstrative scripts: where the subjects of the class to be developed by the student in their residence are exposed, with a demonstration in tutorial/video, in these scripts are also found all the information regarding the step by step of the experiment, as well as its objective and expected result. For this strategy, simple experiments were designed that could be carried out in the student's home, without generating health risks (Figure 2).



Aluno(a)

Preparando a aula: disponha os materiais sobre uma mesa ou bancada, retire do local obstáculos como vasos e toalhas, procure deixar papel toalha ou guardanapo de papel, coloque seu jaleco, e com tudo organizado você está pronto para iniciar a sua aula prática.
Vamos lá?!

1º passo: Lave e seque o tubérculo, após corte 3 fatias de 1 cm de espessura, disponha as 3 fatias no prato raso, e cubra com a água oxigenada 20% (peróxido de hidrogênio). Observe o resultado e fotografe a primeira parte do procedimento.

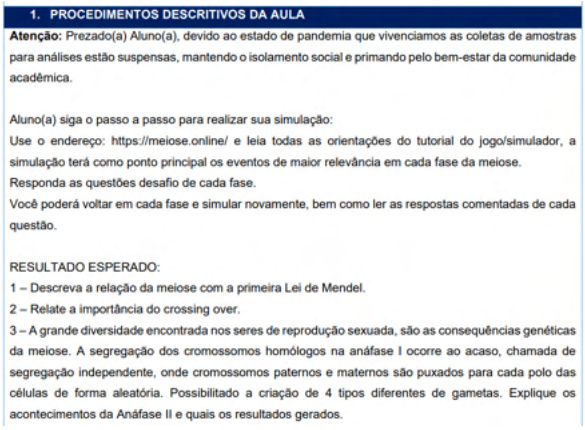
2º passo: Corte mais 3 fatias de 1 cm, e ferva em água por 5 minutos, desligue o fogo, e retire da panela as fatias, coloque no segundo prato, e repita o mesmo procedimento cobrindo com água oxigenada. Anote e interprete os resultados.

RESULTADO ESPERADO:

1- O desprendimento de bolhas de oxigênio (formação de espuma) indica a presença da enzima catalase. Em qual momento esse processo foi observado? Explique por que ocorre diferença no resultado dos experimentos.
2- Apresente a reação das catalases, indicando o substrato e os produtos.
3- Cobrindo as fatias de batata com água oxigenada, observou-se maior evolução de bolhas de oxigênio nos tecidos da periferia do que nos tecidos internos. Por quê?
4- Durante o processo de respiração celular, como são formados os radicais livres? Como eles são eliminados do metabolismo?

Figure 2 – Adapted practical class demonstration script template.

2- Itineraries with simulators: in this case the student will have an educational simulator available on the subject studied, being able to apply the theoretical knowledge studied, for this item we bring the innovation of virtual laboratories (Figure 3). This strategy is in line with the theme addressed by ICTs (Information and Communication Technology), exploring the great affinity of 21st century students with the digital appeal. According to Silva (2000) with the pandemic, it becomes unfeasible to carry out experiments, due to acquisition and the danger in handling some materials, [...] thus, simulators are more suitable instruments to be used in virtual classes, especially in activities that we need to transpose from face-to-face.



1. PROCEDIMENTOS DESCRITIVOS DA AULA

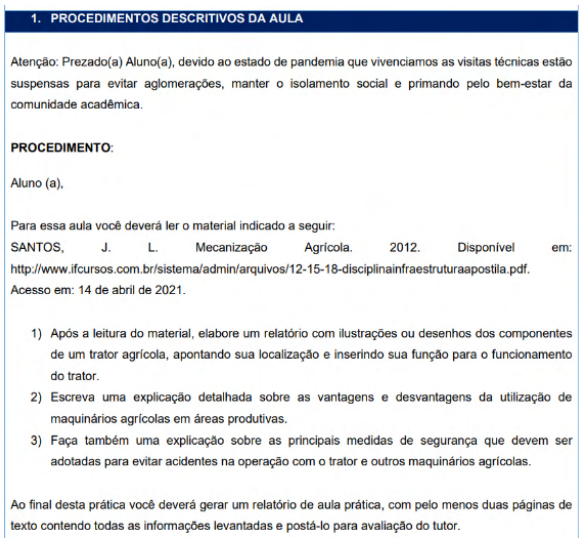
Atenção: Prezado(a) Aluno(a), devido ao estado de pandemia que vivenciamos as coletas de amostras para análises estão suspensas, mantendo o isolamento social e primando pelo bem-estar da comunidade acadêmica.

Aluno(a) siga o passo a passo para realizar sua simulação:
Use o endereço: https://meiose.online/ e leia todas as orientações do tutorial do jogo/simulador, a simulação terá como ponto principal os eventos de maior relevância em cada fase da meiose.
Responda as questões desafio de cada fase.
Você poderá voltar em cada fase e simular novamente, bem como ler as respostas comentadas de cada questão.

RESULTADO ESPERADO:
1 – Descreva a relação da meiose com a primeira Lei de Mendel.
2 – Relate a importância do crossing over.
3 – A grande diversidade encontrada nos seres de reprodução sexuada, são as consequências genéticas da meiose. A segregação dos cromossomos homólogos na anáfase I ocorre ao acaso, chamada de segregação independente, onde cromossomos paternos e maternos são puxados para cada polo das células de forma aleatória. Possibilitado a criação de 4 tipos diferentes de gametas. Explique os acontecimentos da Anáfase II e quais os resultados gerados.

Figure 3 – Model of an adapted practical class script using a virtual simulator.

3-Descriptive script: they present the entire description of the practical class with the support of articles and videos, as shown in Figure 4. After studying the procedures, the student must prepare a report as a learning result.



1. PROCEDIMENTOS DESCRITIVOS DA AULA

Atenção: Prezado(a) Aluno(a), devido ao estado de pandemia que vivenciamos as visitas técnicas estão suspensas para evitar aglomerações, manter o isolamento social e primando pelo bem-estar da comunidade acadêmica.

PROCEDIMENTO:

Aluno (a),

Para essa aula você deverá ler o material indicado a seguir:
SANTOS, J. L. Mecanização Agrícola. 2012. Disponível em: http://www.ifcursos.com.br/sistema/admin/arquivos/12-15-18-disciplinainfraestruturaapostila.pdf. Acesso em: 14 de abril de 2021.

1) Após a leitura do material, elabore um relatório com ilustrações ou desenhos dos componentes de um trator agrícola, apontando sua localização e inserindo sua função para o funcionamento do trator.
2) Escreva uma explicação detalhada sobre as vantagens e desvantagens da utilização de maquinários agrícolas em áreas produtivas.
3) Faça também uma explicação sobre as principais medidas de segurança que devem ser adotadas para evitar acidentes na operação com o trator e outros maquinários agrícolas.

Ao final desta prática você deverá gerar um relatório de aula prática, com pelo menos duas páginas de texto contendo todas as informações levantadas e postá-lo para avaliação do tutor.

Figure 4 – Model of a demonstration script for an adapted practical class.

The three formats of practical classes rely on the delivery by the student of the descriptive demonstrative report, that is, where the student must detail his activity and prove it with images, and this characterizes the report as a learning result. The reports are sent via the AVA platform, so that the tutor can evaluate and generate a concept (met / not answered).

All strategies implemented seek to enable students to continue their studies in this pandemic scenario, respecting the guidelines of the National Education Council.

RESULTS AND DISCUSSION

In the first moment of application of this strategy, the delivery of reports did not compute grades to compose the student's final average, as it was understood that it would follow as a pilot strategy, and if the results were promising, with students' adherence and full development of skills, it could be adopted as a standard model in case of permanence of social isolation, and in this case the model could be applied in order to compose the final grade of the discipline.

It was observed that students did not have high participation in the discussions proposed in the forums of practical classes.

For the demonstration scripts that proposed carrying out experiments, there was a smaller number of students who delivered the report. This was also observed in the itineraries with simulators. In relation to the descriptive scripts, a greater participation and delivery of reports by the students was observed by the tutors. However, it is noteworthy that the number of students in each discipline and the number of scripts for each model were heterogeneous.

CONCLUSION

The use of strategies for using scripts of practical classes adapted due to the COVID-19 pandemic in the models of demonstrative activities, with virtual and descriptive simulators proved to be a relevant tool to be adopted as long as it is aligned with greater student engagement.

REFERENCES

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