Only about one fly in 1,000,000 would, therefore, be expected to express the recessive visible mutation (*aa*). On the other hand, about one fly in 500 would be expected to be heterozygous (*Aa*). In this study we observed that about one to three flies in 80 carried a specific recessive visible mutation as a heterozygote. The reason(s) for this difference in frequencies of heterozygotes is unknown, although changes in *u* or *hs* could bring the two values closer.

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The *BLOG*: A new electronic resource for teaching in the XXIST century.

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Abstract

This paper describes the potential of a *blog* as a tool for curriculum innovation in the context of university attendance. It describes an experimental implementation of this service on the subject of Genetics in the career of Biology at the Faculty of Sciences, UNAM. The results indicate the contribution of this tool to improve the quality of teaching-learning process.

Introduction

Students all over the world today have access to the world wide web and thus many things are competing for their attention. As our students' world changes, so too must the methods by which we teach and engage our students (Lara, 2005; García-Manzano, 2006). In this article, we propose one way that teaching can be significantly enhanced by using one of these web services, the blogs.

Blogs, a contraction of the words *web* and *log*, is a type of website usually maintained by an individual with regular entries of commentaries or news of a particular subject based on the idea of a newspaper that collects texts and files in chronological order. They are regularly updated by its author or authors. Blogs provide the functionality that enables people to publish their thoughts and ideas easily online. One of the primary reasons for the rapid adoption of blogs is that they are quick to setup and easy to use, requiring absolutely no programming knowledge or HTML skills (Gallego-Torres, 2006).

Presenting that basic and supplementary content of a course in a blog, the information can be constantly updated in the same way the materials used in the classroom are available any time in a blog. Thus the documents, notes, presentations, images, videos, comments, among others represent the following advantages:

1. Synthesize, disseminate and update the contents of the course that is taught.
2. Encourage communication between teacher and students through comments and participation.
3. It's possible to know the interest of students on certain issues.
4. The analysis and discussion of certain subjects not covered in the syllabus.
5. Use the tools of Web 2.0 for spreading: collection of data, projects and papers of interest. It also is possible the access to specialized, certified and updated information complementary to that revised in the classroom.
6. Use strategies and cutting-edge electronic tools for teaching.

We teach in the Biology career, a course on Genetics in which we wanted to prove the effectiveness of a blog for teaching. We use the blog to emphasize the use of *Drosophila*. We have included a link in the blog to a laboratory manual of genetics which included twelve different interactive practices in which *Drosophila melanogaster* is used (Rodriguez-Arnaiz -coordinator- 2005).

Objectives

General

Try to know if a blog represents for both teachers and students a new way to transmit actualized information that complements, strengthens, and increases the classroom sessions from the collection of accumulated knowledge on the web in a dynamic, updated, efficient, and reliable form.

Particular

- Make use of available resources on the Web to attract the student's interest in a subject.
- Use attractive and original materials (animations, videos and pictures, among others) to cover all the issues seen in class.
- Promote in students the integrity of the subject with other related sciences.
- Encourage communication between teacher and students from discussions and comments generated by the information that is added to the blog.
- Strengthen communication, share and how to do skills.

Description of the Experience

We have investigated the relationship between the use of a blog and the student motivation over one semester, July-December 2009. Students were asked to try the blog, read about issues related to new literacy, and then make a proposal for potential uses or limitations of weblogging in education. We teach Genetics at the career of Biology, in the Faculty of Sciences of the Universidad Nacional Autónoma de México (UNAM). The group consists of 25 students.

Material and Methods

Create a Blog

For the development of the blog it is recommended the Google's Blogger service, which requires a Gmail account and facilitates the use of other resources offered by Google™. For its creation it must be considered the design by choosing a template that is visually appealing.

Moreover, the content is another aspect in which it should be considered the type of items to attach, such as links to websites and/or other blogs, RSS, gadgets[1], etc. (Gallego-Torres, 2006). Also, choose the information presented to the public, through the use of inputs, which can be pictures, articles, videos, and news coming from certified sites that are recognized for their veracity.

Updating the Blog

This can be done at least every five days, according to the frequency of sessions of the course.

Dissemination of the Blog

We spent quite a bit of time offering guidelines, tips and examples, including an explicit definition of blog, and the way of use it. Spread between students the blog URL web address and explain their characteristics and performance.

For example, when students enter to the blog (http://ciber-genetica.blogspot.com/), they can see in one of the inputs the link to the laboratory manual of Genetics. In this link there are practices in which there is a description of how to make the *Drosophila*'s medium, an anesthizer or flynap, and the crosses, among others. The screen in Insert 1 is seen once you enter to the blog.

Once in the laboratory manual link the student can choose from the index the practice of interest. For example, if the student goes to the link of practice #3, the student can obtain the information needed to construct an anesthizer for *Drosophila*.

There are also links to other laboratory manuals (in English), web sites about Genetics, news, journals, and images, among others.

Results

The blog "Ciber-genética" has been developed and evaluated. The survey had 16 questions that pertain answering several questions about which weblog motivate students for studying. The set of questions relevant to this paper are included in an appendix.

We asked open-ended follow-up questions to a number of the closed, discrete questions, and the responses to those questions were coded by the principal investigator into categorical responses. An example will be explained below. While the coding is obviously interpretive and not validated by outside readers, the open-ended questions did generate responses that we would not have anticipated, and, therefore, this particular strategy was appropriate for this exploratory study.

Assessment of the Blog

Number of individuals in the test (evaluators).

The analysis of the blog was done by 22 undergraduate students of genetics.

Conditions under which the test was conducted

Each evaluator was provided with an evaluation sheet which included the following items

A link to:

a) They were asked to carefully review the blog and record their answers. An evaluation sheet was provided.
b) During two hours the students reviewed and filled the evaluation.

Observed results

We have done two evaluations of the blog during the semester, one at the middle and the other at the end. The following results are shown: *Blog's objective* (Figure 1), *Visual materials and complementary* (Figure 2), and *Integration with the classes of the course* (Figure 3).

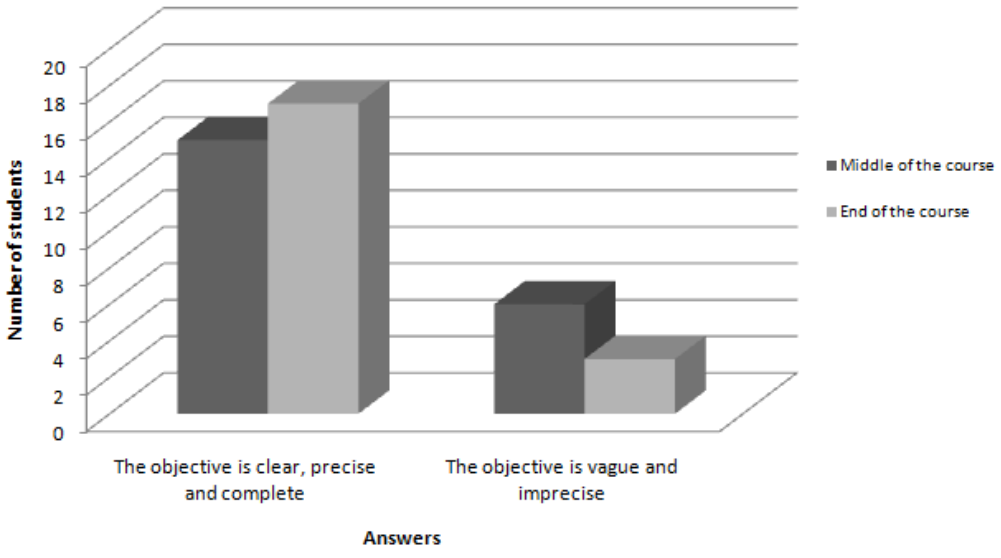

Figure 1. The Blog's objective.

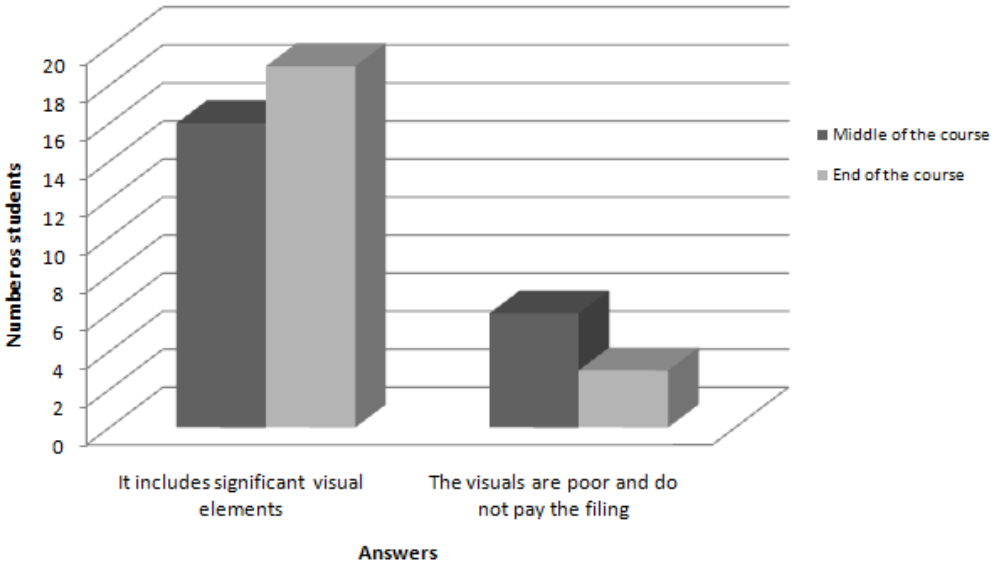

Figure 2. Visual materials and complementary.

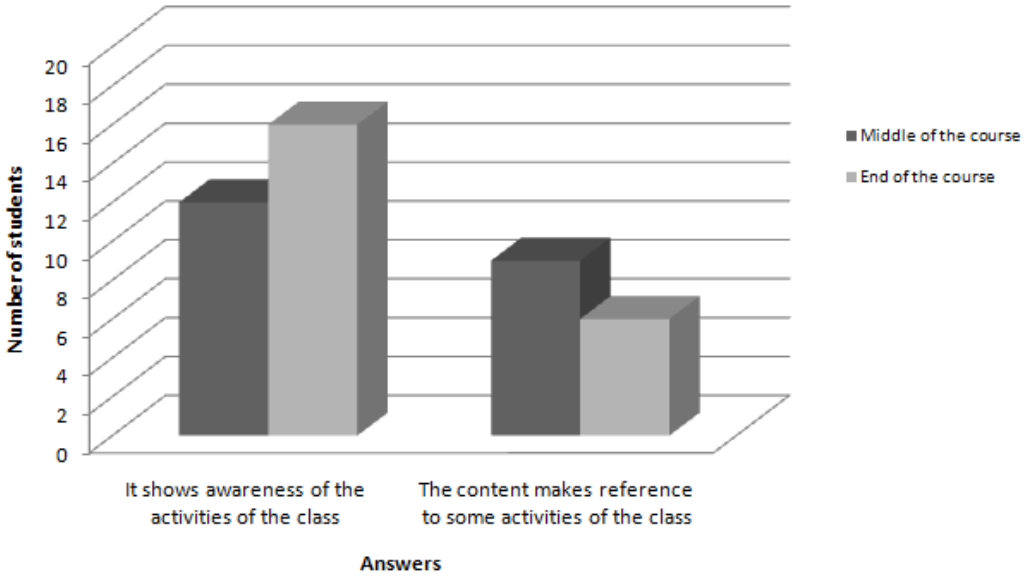

Figure 3. Content integration with the classes of the course.

In the figures it can be seen that the students showed more interest and satisfaction in each item as the course advanced. Also it was mentioned that the blog is a resource that they would like to use in other courses. About the written comments we gathered, the students notice that the blog resulted to be very useful and significant in the study of Genetics.

Discussion

Based on the results, we conclude that, overall, the blog proved to be a useful and valuable tool that helped to enrich and enhance the education offered, as well as an excellent opportunity to obtain a kind of information on *Drosophila melanogaster*, a model species used in many current and classic genetic studies. According to the results, we can say that the students felt that the blog allows them to reinforce the knowledge presented in class through the extension of this knowledge based on

the information in the blog. Furthermore, the expansion of communication facilities and the extension of spatial and temporal boundaries allowed the students to focus their learning on an individual basis. Finally, students particularly appreciated the blog for the novel contributions with respect to the visual material that was available in an organized, easy and permanent shape.

Footnote: [1]They are small programs that are tasked to submit certain information and can be attached to any page on the network.

Acknowledgments: This project is conducted with funding from DGAPA, UNAM. Project PAPIME PE 201509.

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APPENDIX: Evaluation Form

Evaluation of the Genetics Group's Blog
Title: Ciber-Genética

Design: Dra. Rosario Rodríguez Arnaiz
Dra. América Nitxin Castañeda Sortibrán
Maintenance: Marco Antonio Carballo Ontiveros
Advice: Dra. Laylla Michán Aguirre

Evaluator's name:

_____

Age:_____ **Gender: W / M** **Date of application:**_____

This evaluation is important to provide a better service and to update the students, so we ask you to respond in the most authentic possible way.

No.	Question	Answer				
1 $^{\Omega}$	Does the title match the content?	In its entirety	Mostly	Partially	Almost no	Not applicable, because: _____ _____ _____ _____ _____ _____
2 $^{\pi}$	The blog's colours are suitable?	In its entirety	Mostly	Partially	Almost no	No

3 π	The organization of the content (tags, links, images, etc) is suitable?	Excellent	Very good	Good	Deficient	Very deficient
4 π	How do you perceive the grammar and the spelling of the blog?	They are almost always correct.		Includes some grammatical errors, also with the spelling.	It has grammatical errors and also errors with the spelling.	
5 Ω	Blog's Objective	It offers clear, accurate and complete information about the purpose of the blog.		Provides information about the objective but it is vague and imprecise.	There is no information about the objective.	
6 Ω	How often the blog is updated?	The information is published frequently.		It publishes information 1 or 2 times a week.	Few information is published.	
7 π	Number of links	Includes a significant number of links.		Includes an average number of links.	Includes very few links.	
8 π	Quality of the links	All links are from reliable and relevant resources.		Over 50% of the links are from reliable and relevant resources.	The links are not from reliable and relevant resources.	
9 π	Visual materials and complementary	It includes significant visual elements (charts, illustrations, graphics and multimedia). They are relevant to the topic of the blog.		The visual elements are por. The images are randomly selected, are of poor quality and distract the reader.	Does not include visual elements.	
10 π	Copyright	Sources are cited appropriately. It includes elements of public domain or with permission.		Sources are cited but elements are used without permission.	The blog does not include the sources from which information is retrieved.	
11 Ω	Blog's degree of integration with the material discussed in class.	The elements of the blog are aware of the activities of the class (with the concepts, themes, etc).		The elements of the blog make some reference to the matters mentioned in the activities of the class.	The elements of the blog do not refer to the matters covered in the activities of the class.	
12 Ω	Quality of the articles cited (comprehension)	Adequate information is presented and enjoyable to understand.		It hinders the comprehension of the information presented.	The information presented is not understandable.	
13 Ω	The presence of articles enriches the themes seen in class.	Most of them enriche the information viewed in class.		In half of the cases yes.	Not at all	
14 Ω	Does the blog's content help in understanding the subject?	Okay, because: _____ _____ _____		Indifferent, because: _____ _____ _____	Disagree, because: _____ _____ _____	
15 Ω	Is the blog an element that improves the quality of the course?	Okay, because: _____ _____ _____ _____		Indifferent, because: _____ _____ _____ _____	Disagree, because: _____ _____ _____ _____	
16 Ω	Is it convenient to use blogs on other subjects?	Yes, because: _____ _____ _____		No, because: _____ _____ _____	Not know, because: _____ _____ _____	

Ω : Evaluation of background, π: Evaluation of form.

Comments and observations

_____
_____
_____
_____
_____
_____
_____

Thanks for your help!

Guide to Authors

Drosophila Information Service prints short research, technique, and teaching articles, descriptions of new mutations, and other material of general interest to *Drosophila* researchers. The current publication schedule for regular issues is annually, with the official publication date being December. The annual issue will include material submitted during the calendar year. To help us meet this target date, we request that submissions be sent by 15 December, but articles are accepted at any time. A receipt deadline of 31 December is a firm deadline, due to printer submission schedules. Electronic submissions are encouraged, and may be required for lengthy or complex articles.

Manuscripts, orders, and inquiries concerning the regular annual DIS issue should be sent to James Thompson, Department of Zoology, University of Oklahoma, Norman, OK 73019. Telephone (405)-325-4821; email jthompson@ou.edu; FAX (405)-325-7560.

Submission: Articles should be submitted electronically, if possible. Alternatively, we ask that a diskette be included with an article mailed to us. MS Word or Rich Text Formats are preferred. To help minimize editorial costs, proofs will not be sent to authors unless there is some question that needs to be clarified or they are specifically requested by the authors at the time of submission. The editor reserves the right to make minor grammatical, spelling, and stylistic changes if necessary to conform to DIS format. If the article contains tables, complex line figures, or half tones, we may ask that a printed copy be mailed to us after seeing the electronic version if we have questions about content or presentation. Color illustrations will appear black and white in the printed version but will be in color in the electronically-accessible version on our web site (www.ou.edu/journals/dis).

Citation of References: Citation should be by name and date in the text of an article (Smith, 1989; Jin and Brown, 1990; Waters *et al*., 1990). At the end of the article, references should be listed **alphabetically** by senior author, listing all authors with initials, date, journal, volume and page numbers. Titles will not be included except for books, unpublished theses, and articles in press. An example format is:

Green, R.L., 1998, Heredity 121: 430-442.
Waters, R.L., J.T. Smith, and R.R. Brown 1990, J. Genet. 47: 123-134.

Note the initials are before each name except for the senior author.