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Design of Time Lines Using the Free Software Chronos in University Students

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Abstract

The research aimed to: design the visual organizer: Time Lines in the chairs with students of the specialty of Bromatology and Human Nutrition using free software Cronos, within the chair of Pedagogy and Didactics applied to Nutrition in the Faculty of Industries Food of the UNAP in the city of Iquitos, in the year 2018.

The research was of experimental type and the design was the pre-experimental: Design of Static Comparison or Comparison of Groups only, the study population was conformed by the students of the specialty of Bromatology and Human Nutrition of the Faculty of Food Industries of the UNAP, who perform pre-professional practice and make a total of 40 and sample census type, ie 40 students.

The technique used to collect the data was the survey, the instrument was the questionnaire. For the verification of the main hypothesis, the student's parametric inferential statistical test t was used with $\propto = 0.01$; $gl = 2$ obtaining $t_c = 31.83$; $t_t = 1.89$; that is, $t_c > t_t$ the research hypothesis was accepted: "The design of the Time Lines is optimized, using the free software Cronos with the students of Bromatology and Human Nutrition in the School of Food Industries of the UNAP in the city of Iquitos in the year 2018."

Keywords: Visual Organizer, Timeline, System, Free Software

Introduction

When it comes to finding the why? of the low grades in university students, the focus is on faculty study plans, the overpopulation of students by classroom, the lack of economic resources of public universities and rarely the forms and teaching techniques they have. The teachers On the other hand, within the classroom, teachers look for an adequate methodology to teach their classes, and find that the low resources that can be provided are not enough to make important innovations, especially when it comes to being able to provide motivation desired to its students, which has several elements, such as: planning, objectives, methodology, technique and instruments, as well as feedback, that every student must know and understand. For students to succeed in their professional training, it is necessary that the entire university community do their part to achieve these final objectives since only with a good coordination of all entities can a quality product be achieved.

Many students accept the way in which the university directs their learning, but there is also a group that seeks a better innovation to achieve greater competitiveness when they leave the classroom of their alma mater, what they seek is educational quality and they expect that the university helps them to achieve it in their studies, but in reality most of the students maintain an attitude of accommodation with what the university offers, that is why it is important to provide the university with tools that help improve the educational processes that take place there. The best thing would be for all the students to enter the university with all the motivation to be able to capture the knowledge imparted to them by the teachers, but the reality is not always the case, until it can be said that some students find educational activities boring or unimportant. On the other hand, the teacher is the first to take into account how to make students active in their learning, that is, that there is an environment of motivation to learn; in this way, to make the teaching-learning process easier and optimize the resources that are easily available in the classrooms. Within what can be called the educational phenomenon, it is important to describe what is education and the teaching-learning process; Education is a broader term than teaching-learning, and it has a fundamental spiritual and moral sense, its object being the integral formation of the student, giving it in different ways and one of them is through the application of visual organizers. (GONZÁLEZ, 2009).

With all the aforementioned, it was possible to determine that it is important to propose the use of motivating means and forms for the students, and these in turn can optimize the learning that takes place in the classrooms, that is why it is essential to study technological tools that support pedagogy and that these are of low cost to be used in public universities, as teaching material. (MICHILENA, 2011).

One of the most common forms that can be applied is educational software and within them there is a gamma of free software that has zero license cost, which does not entail installation costs, only that you must be sure that these systems are already prepared can meet their objectives according to the reality where they are used. (VERGARA,

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2007). Free Argentine software Cronos to develop "Timelines", is very useful for teachers to work on topics that should show the simultaneity between some events and for students to understand the importance of capturing time in an image that facilitate awareness of the course of this; understand the succession as a temporary category that allows to locate facts, events or events in their order of appearance (organize and order events in time); understand that time is a continuum, that many things exist prior to the present (past) and that they will exist after this (future); recognize the coexistence of several events (happen at the same time) that can also be conditioned to each other (simultaneity: during, while and at the same time), among other factors; the installer is very light, only 453Kb, which facilitates downloading from the Internet; The program offers a manual that shows through images each of the steps for the different operations that must be carried out in the construction of a Timeline. (VIDURRIZAGA and HU, 2015; 48p).

Materials and Methods

The research was of experimental type, because the free software Cronos was used in the students of the Chair of Pedagogy and Didactics applied to Nutrition in the School of Food Industries of the UNAP and the appreciation of its usefulness in the design was identified of the lines of time.

The population of the present investigation was made up of all the students of the specialty of Bromatology and Human Nutrition that study the subject of Pedagogy and Didactics applied to Nutrition in the Food Industries Faculty of the UNAP in the city of Iquitos, being a total of 40 students, and the sample was in census form, that is to say 40 students of the specialty of Bromatology and Human Nutrition of the School of Food Industries of the UNAP, of which 20 students formed the control group and 20 students formed the group experimental.

The technique that was used was that the survey and the instrument for collecting the information was the questionnaire. (ACHAERANDIO, 1998).

Results and Discussion

When performing the analysis of the distribution of the timeline design indicators in students of Bromatology and Human Nutrition at the School of Food Industries of the UNAP in the city of Iquitos, during the year 2018, in the Control Group, found that of 20 (100%) students, who thought about the design of the timelines, 56.3% of respondents thought it was deficient, this is because students take a dedication to be able to design of the visual organizer, with the specifications of the teacher during the class. As important information, in the Control Group that could be found, that of the 20 (100%) students, who gave their opinion on the question:

How do you consider that is the time that the group takes in the design of the timeline ?.

10 (50.0%) students thought that it is regular, since doing the design of the timeline using paper or a conventional computer program does not help them to speed up the work and is sometimes done even more complicated.

on the question:

How do you consider the level of facility to add or correct information to the timelines already designed ?.

13 (65.0%) students thought it is poor, because when they have the organizer Visual culmination when wanting to add or modify data represents an additional task that is difficult to arrange so that it is correctly aligned, and making patches with paper takes away the presentation of the work.

on the question:

How do you consider how to distribute the lines of time that were designed in class to be seen by other groups outside the classroom?.

12 (60.0%) students thought it was deficient, and the only way to distribute it to other groups of students is by delivering the original that there is no other copy to be able to handle it and how they worked on paper is not feasible to want to photocopy it.

on the question:

How do you consider the clarity and objectivity that the time line created in the classroom has ?.

10 (50.0 %) students thought that it is regular, this is because depending on the way the group works the visual organizer will be clear and objective but this is a task that must be done with care in order to maintain the quality of the presentation.

on the question:

How do you consider how to send the time line created, using electronic means ?.

16 (80.0%) students thought it was deficient, since for them the only way to digitize the visual organizer is taking photography with their cell phones, and these do not always have the quality to show all the information that is detailed there.

on the question:

How do you consider the use of images in the timeline that has been created ?.

17 (85.0%) students thought that it is deficient, since the way to have images in a timeline is placing cutouts to be placed next to the texts, that is why not all the images are always the appropriate size for the work that is done.

on the question:

How do you consider the visualization of the time line created in class ?.

11 (55.0%) students thought it is fair, because they consider that visualization is a factor that depends of the type of work that each group performs when designing the timeline.

on the question:

How do you consider the class to be developed using the timelines?.

9 (45.0%) students thought it was fair , already that they indicate that this visual organizer is the right one to indicate the types of diets that people must follow throughout their lives, for which they separate it into a group of ages. These results coincide with Cueva, G., Mallqui, R. (2014), in their study: Use of the educational software Pipo in the learning of mathematics in the students of the fifth grade of primary of the I.E. "Juvenal Soto Causso", where it verifies that the lack of use of educational software in students causes the teaching-learning process to take place more slowly, as opposed to if these systems were applied in the classes.

Table 1: Visual Organizer Design: Time Lines, in the Control Group

Indicators	Good		Regular		Deficient		Total	
	N	%	N	%	N	%	N	%
1. How do you consider the time the group takes in the design of the timeline?	1	5·0%	10	50·0%	9	45·0%	20	100
2. How do you consider the level of facility to add or correct information to the already designed timelines?	0	0·0%	7	35·0%	13	65·0%	20	100
3. How do you consider how to distribute the time lines that were designed in class to be seen by other groups outside the classroom?	1	5·0%	7	35·0%	12	60·0%	20	100
4. How do you consider the clarity and objectivity of the time line created in the classroom?	2	10·0%	10	50·0%	8	40·0%	20	100
5. How do you consider the way to send the time line created, using electronic means?	0	0·0%	4	20·0%	16	80·0%	20	100
6. How do you consider the use of images in the timeline that has been created?	0	0·0%	3	15·0%	17	85·0%	20	100
7. How do you see the visualization of the time line created in class?	2	10·0%	11	55·0%	7	35·0%	20	100
8. In general: How do you think the class develops using the timelines?	3	15·0%	9	45·0%	8	40·0%	20	100
Average	**1·1**	**5·6%**	**7·6**	**38·1%**	**11·3**	**53·3%**	**20·0**	**100·0**

Source: Obtained by the authors

Figure 1: Visual Organizer Design: Time Lines, in the Control Group
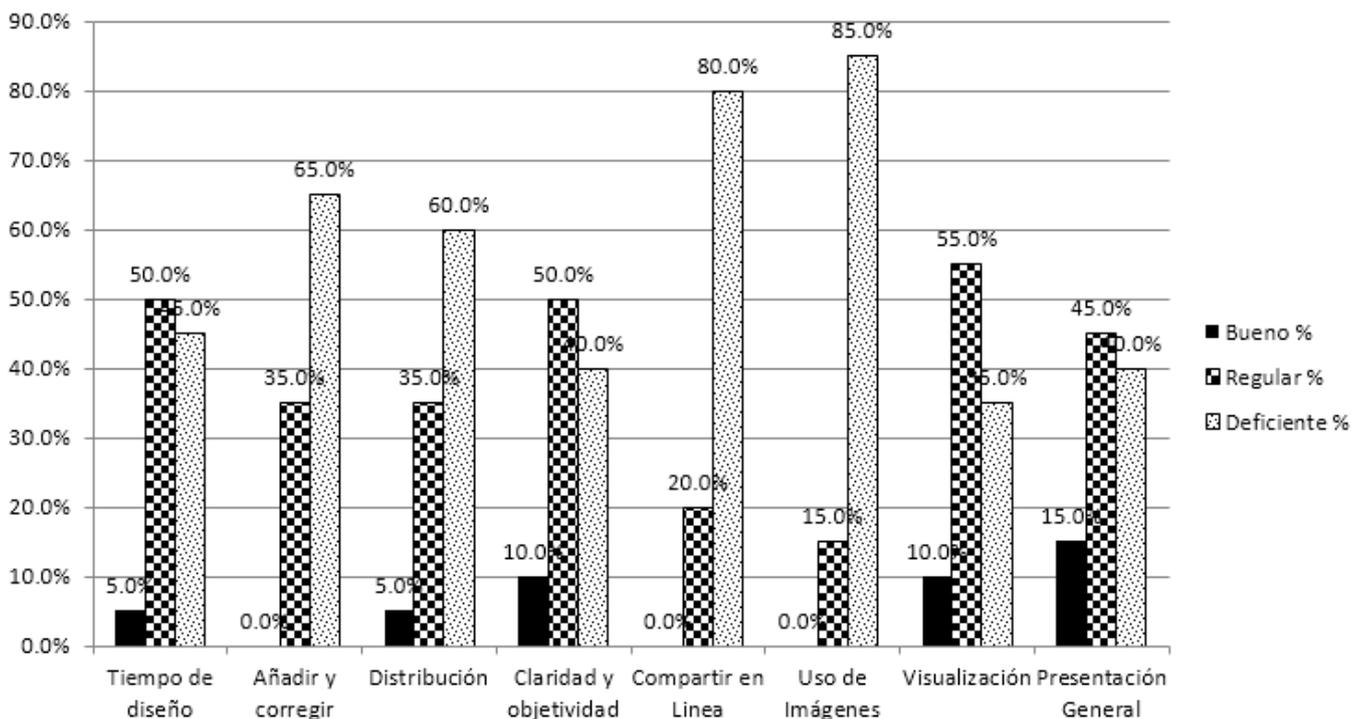
Source: Table 1

When performing the analysis of the distribution of the timeline design indicators in students of Bromatology and Human Nutrition at the School of Food Industries of the UNAP in the city of Iquitos, during the year 2018, in the Experimental Group, it was found that of 20 (100%) students, who thought about the design of the timelines, 94.4% of respondents thought it was good, this is because the students found that the design of the visual organizer: Time is very easy to work using free software chronos and can innovate by adding various tools that the system has.

As important information, in the Experimental Group that could be found, that of the 20 (100%) students, who gave their opinion on the question:

How do you consider that is the time that the group takes in the design of the timeline ?.

19 (95.0%) students thought it was good, this is because the use of free software Cronos, helps them to prepare more quickly the lines of time left by the teacher as work.

on the question:

How do you consider the level of facility to add or correct information to the timelines already designed ?.

20 (100.0%) students thought it was good, because by using free software Cronos, It is very easy to make some kind of arrangement, whether small or large to the work that is being done.

on the question:

How do you consider how to distribute the time lines that were designed in class to be seen by other groups outside of the classroom? .

19 (95.0%) students opined that It is good, since it is very easy for them to share the work done, since it is in a digital format and it is easily shared with other students from other groups that belong to it.

on the question:

How do you consider the clarity and objectivity that has the line of time created in the classroom ?.

18 (90.0%) students thought it was good, because the visualization level for the presentation of the timeline is using the multimedia projector and this way the time line created is impeccable at the time of the exhibition in class.
on the question:

How do you consider the way to send the time line created, using electronic means ?.

20 (100.0%) students They thought that it is good, since this new way of working using the free software Cronos allows to create a file that can be easily sent by electronic means and through social networks in a very simple way.

on the question:

How do you consider the use of images in the timeline that has been created ?.

19 (95.0%) students thought it was good, since students can search for images online using the internet and easily include them within the free software Cronos to be part of the work requested by the teacher.

on the question:

How do you consider the visualization of the time line created in class?

18 (90.0%) students thought it was good, because the visualization is perfect at the moment of the exhibition since it does not present arrangements or patches as it happens when things are done in the traditional way.

on the question:

How do you consider the class to be developed using the time lines?

18 (90.0%) students thought it was good, because they have noticed that the use of free software Cronos is very effective for the design of the timelines, thus giving a good performance in time and eliminating the negative aspects of the Traditional presentations on paper and down and using the multimedia projector. These results coincide with Fallas, J., Chavarría, J. (2009), in their study: Validation of educational software Poliestudio 1.0, where it analyzes and identifies that the use of educational software has a positive effect on student learning, by which affirms that the application of these systems are very good for the development of the classes in any level of studies since they bring motivation and enthusiasm to the students.

Table 2: Visual Organizer Design: Time Lines, in the Experimental

Indicators	Good		Regular		Deficient		Total	
	N	%	N	%	N	%	N	%
1. How do you consider the time the group takes in the design of the timeline?	19	95.0%	1	5·0%	0	0·0%	20	100
2. How do you consider the level of facility to add or correct information to the already designed timelines?	20	100.0%	0	0·0%	0	0·0%	20	100
3. How do you consider how to distribute the time lines that were designed in class to be seen by other groups outside the classroom?	19	95.0%	1	5·0%	0	0·0%	20	100

4. How do you consider the clarity and objectivity of the time line created in the classroom?	18	90.0%	2	10·0%	0	0·0%	20	100
5. How do you consider the way to send the time line created, using electronic means?	20	100.0%	0	0·0%	0	0·0%	20	100
6. How do you consider the use of images in the timeline that has been created?	19	95.0%	1	5·0%	0	0·0%	20	100
7. How do you see the visualization of the time line created in class?	18	90.0%	2	10·0%	0	0·0%	20	100
8. In general: How do you think the class develops using the timelines?	18	90.0%	2	10·0%	0	0·0%	20	100
Average	**18·9**	**94·4%**	**1·1**	**5·6%**	**0·0**	**0·0%**	**2·0**	**100**

Source: Obtained by the authors

Figure 2: Visual Organizer Design: Time Lines, in the Experimental Group
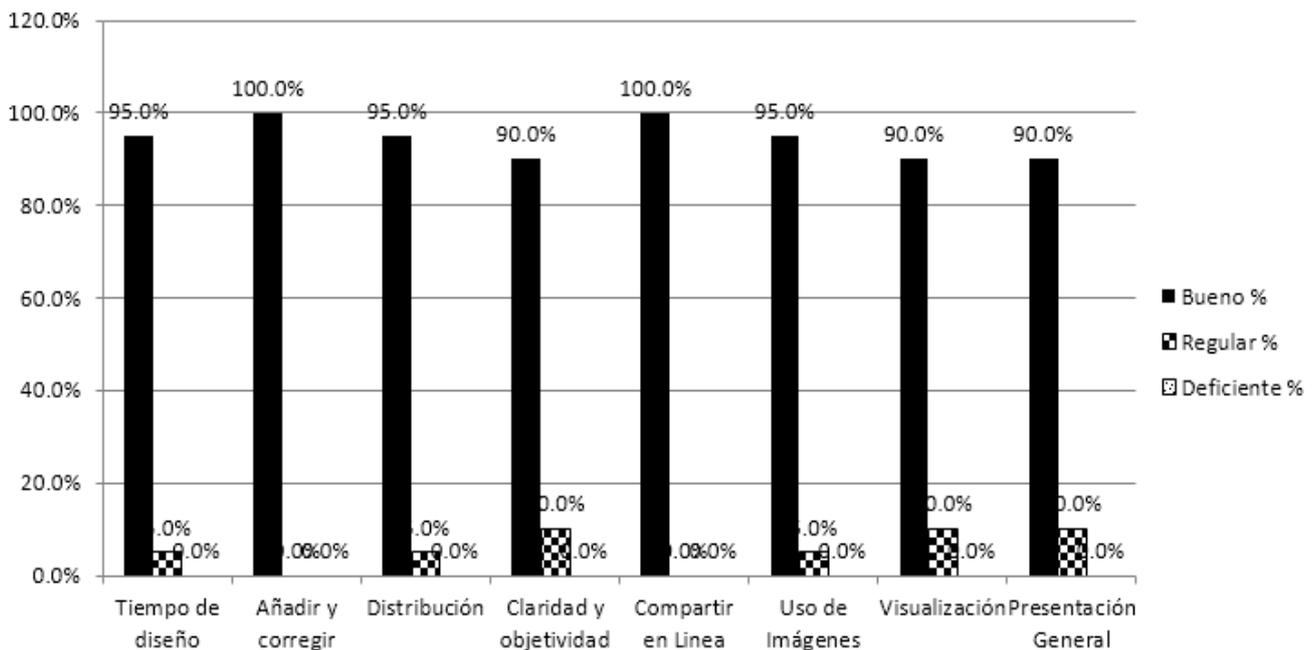
Source: Table 1

When analyzing the distribution of questions about the use of Cronos Free Software for the design of timelines in students of Bromatology and Human Nutrition of the School of Food Industries of the UNAP in the city of Iquitos, during the year 2018 , in the Experimental Group, we obtained: that of 20 (100%) students, who expressed their opinion about the question:

Was it easy to install free software Cronos ?.

19 (95.0%) students said that "Yes ", Since the students achieved almost in their entirety a perfect installation of free software Cronos on the computer they were working on without having to need the intervention of the teacher.

on the question:

Did the computer you were using have enough requirements to install the Cronos free software ?.

19 (95.0%) students said that "Yes", since Cronos free software is installable in various platforms of operating systems such as Windows X P, Windows 7, Windows 8 and Windows 10 in both 32-bit and 64-bit versions, that's why it does not present any difficulty to use it in almost all the equipment that you can have to carry out the work.
on the question:

Is the legal use of free software Cronos accessible, for students ?.

20 (100.0%) students said that "Yes", since as its own name says it is "free software" and this allows it to be installed and distribute free of charge and without prejudice to third parties, thus providing a tool for pedagogical use that does not generate costs for the institution and for students.

on the question:

Is Cronos free software portable for distribution among students?

18 (90.0%) students said that "Yes", since it is a system that your installer does not occupy much space to be carried in

portable units such as USB drives, that is why copying it to students does not mean time and work and can be installed without major problem, on the question:

Is Cronos free software an easy system to use for users with basic computer knowledge ?.

19 (95.0%) students thought "Yes", since it is a very simple system to use, with few complicated options and that any user with basic knowledge of computer science can use it

with only some indications of the teacher and in some cases almost without the intervention of the same.

These results coincide with what was reported by VIDURRIZAGA and HU (2015), in their research: Application of the Cronos software in the use of timelines in students of the Faculty of Education, where it indicates that the computer package is very accepted by students and which in turn provides a motivating effect to the teaching-learning sessions held with the students.

Table 3: Use of Cronos Free Software for the design of Time Lines in the Experimental Group

Indicators	Yes		No		Total	
	N	%	N	%	N	%
1. Was it easy to install Cronos free software correctly?	19	95%	1	5%	20	100.0%
2. Did the computer you were using have sufficient requirements to install the free software Cronos?	19	95%	1	5%	20	100.0%
3. Is the legal use of Cronos free software accessible to students?	20	100%	0	0%	20	100.0%
4. Is Cronos free software portable for distribution to students?	18	90%	2	10%	20	100.0%
5. Is Cronos free software an easy-to-use system for users with basic computer skills?	19	95%	1	5%	20	100.0%
Average	**19·0**	**95·0%**	**1·0**	**5·0%**	**20·0**	**100.0%**

Source: Obtained by the authors

Figure 3: Use of Cronos Free Software for the design of Time Lines in the Experimental Group
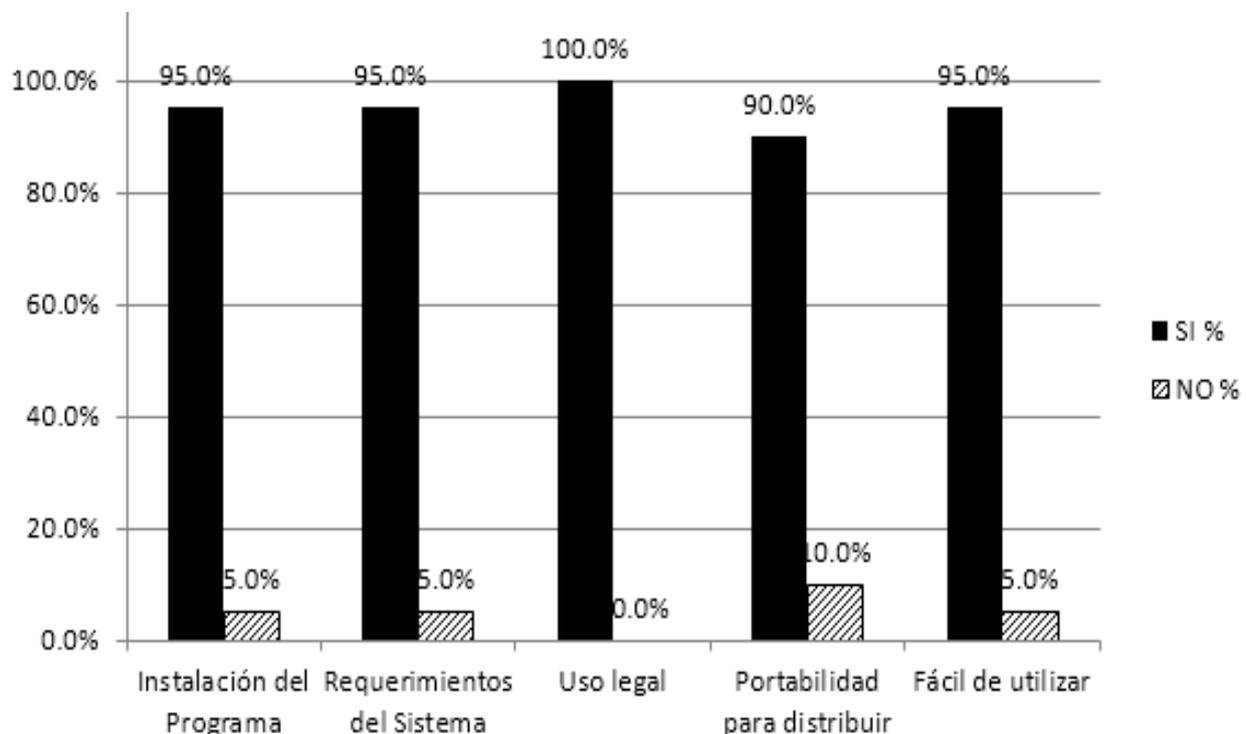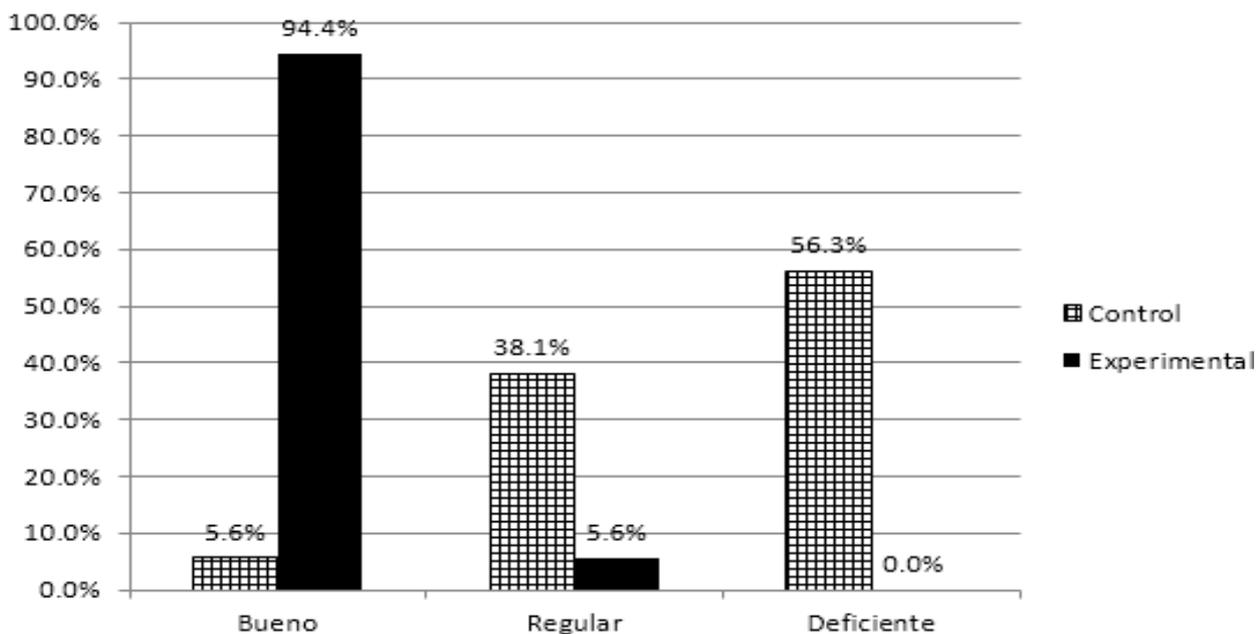

Source: Table 3

When performing the inferential analysis by applying the parametric inferential statistical test t-student (t) tc = 31.83, tt = 1.89, df = 2, $\propto$ = 1% ie tc> tt accepting the hypothesis was obtained : The design of the Time Lines is optimized, using the free software Cronos with the students of Bromatology and Human Nutrition at the School of Food

Industries of the UNAP in the city of Iquitos in the year 2018., result that coincides reported by: Vidurrizaga, M., Hu, B. (2015), in his research on timelines that had as objective: to apply the Cronos software in the use of timelines in students of the Faculty of Education in the year 2015.

Table 4: Results of the Design of Time Lines in the Control and Experimental Group

Use of the Time Lines	Results of the Evaluation			
	Control Group		Experimental Group	
	N	%	N	%
Good	1.1	5.6%	18.9	94.4%
Regular	7.6	38.1%	1.1	5.6%
Deficient	11.3	56.3%	0·0	0·0%
Total	**20·0**	**100%**	**20·0**	**100%**

Source: Table 1 and 2

Figure 4: Comparison of the Design of Time Lines in the Control and Experimental Group

Source: Table 4

Conclusions

The students in the specialty of Bromatology and Human Nutrition of the School of Food Industries of the UNAP in 2018 indicated that it is very good to use the computer programs in the classes since it helps to improve and optimize the learning process of students , these educational programs that are freely licensed, are of importance in this stage of university education, where information and communication technologies (ICT) are a challenge for university higher education, for this teachers must be always trained in these technologies.

On the other hand, there are many programs that can be applied in the classes and it is the teachers' job to test them to be able to measure their true effectiveness in their subjects, as the free software Cronos was tested and in this way it was verified that it is a viable alternative for use in the Faculty of Food Industries.

The research showed that the use of free software Cronos is a learning tool that allows: optimize time for design, improve distribution, improve clarity, objectivity and share over the internet and place images, to the lines of time created in class by the students in the Faculty of Food Industries.

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