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Original article

Students' opinions about the subject *Work in Function of Degree Project*, taught in Google-Meet

Criterios del alumnado sobre la asignatura *Trabajo en Función de Proyecto de Grado*, impartida en Google-Meet

Opiniões do corpo estudantil sobre a disciplina *Trabalho em Função do Projeto de Grau*, ministrada em Google-Meet

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ABSTRACT

The abrupt change of educational paradigms entails qualitative and quantitative analyses of consideration, delimiting scopes and limitations in the subjects that make up a university career to describe and analyze concrete actions that allow perfecting the teaching-educational process. The objective of the research consisted in determining the criteria of the students of the Physical Activity and Sports Sciences career of the University of the Armed Forces ESPE about the subject *Work in function of the degree project*, taught in Google-Meet. The work is of a descriptive-correlational type of

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qualitative order and students in Pedagogy of Physical Activity and Sport (47 of both genders) were taken as population, applying a questionnaire with seven analysis indicators. The students' criteria on the referred subject evidenced indicators with a high level of accessibility ($\square 4.21$: high) and effectiveness ($\square 4.06$: high), a medium-high level in the affordability indicator ($\square 3.7$: medium-high) and indicators with a low-medium level such as individualization ($\square 2.68$: low-medium) and the possibility of error correction ($\square 2.94$: low-medium). The quality indicator between the online course mentioned and Integrating Project III (Classroom) reached a medium level on average, with no significant differences ($p=0.324$). It is considered that teaching the subject under analysis through virtual platforms can be satisfactory in the opinion of the students studied.

Keywords: Students' criteria, *Work in Function of Degree Project*; Google-Meet.

RESUMEN

El cambio brusco de paradigmas educativos conlleva análisis cualitativos y cuantitativos de consideración, delimitando alcances y limitaciones en las asignaturas que conforman una carrera universitaria para describir y analizar acciones concretas que permitan perfeccionar el proceso docente-educativo. El objetivo de la investigación consistió en determinar los criterios de los alumnos de la carrera en Ciencias de la Actividad Física y el Deporte de la Universidad de las Fuerzas Armadas ESPE sobre la asignatura *Trabajo en Función de Proyecto de Grado*, impartida en Google-Meet. El trabajo es de tipo descriptivo-correlacional de orden cualitativo y se tomaron como población alumnos en Pedagogía de la Actividad Física y el Deporte (47 de ambos géneros), aplicando un cuestionario con siete indicadores de análisis. El criterio del alumnado sobre la asignatura en cuestión evidencia indicadores con un nivel alto de accesibilidad ($\square 4.21$: alto) y efectividad ($\square 4.06$: alto), un nivel medio-alto en el indicador asequibilidad ($\square 3.7$: medio-alto) e indicadores con un nivel bajo-medio como la individualización ($\square 2.68$: bajo-medio) y la posibilidad de una corrección de errores ($\square 2.94$: bajo-medio). El indicador de calidad entre la asignatura online mencionada y *Proyecto integrador III* (Presencial) alcanzaron un nivel medio como promedio, no existiendo diferencias significativas ($p=0.324$). Se considera que, impartir la asignatura objeto de análisis a través de plataformas virtuales, puede ser satisfactoria a criterio del alumnado estudiado.

Palabras clave: Criterios del alumnado; Trabajo en Función de Proyecto de Grado; Google-Meet.

RESUMO

A mudança abrupta dos paradigmas educacionais implica análises qualitativas e quantitativas de consideração, delimitando âmbitos e limitações nas disciplinas que compõem uma carreira universitária para descrever e analisar ações concretas que permitam aperfeiçoar o processo ensino-educacional. O objetivo da investigação consistiu em determinar os critérios dos estudantes da carreira em Ciências da Atividade Física e Desporto da Universidade das Forças Armadas ESPE sobre o tema Trabalho em função do projecto de licenciatura, leccionado no Google-Meet. O trabalho é do tipo descritivo-correlacional de ordem qualitativa e os estudantes em Pedagogia da Atividade Física e Desporto (47 de ambos os sexos) foram tomados como população, aplicando um questionário com sete indicadores de análise. Os critérios dos estudantes sobre a matéria em questão mostram indicadores com um elevado nível de de acessibilidade



(□4.21: alto) e efectividade (□4.06: alto), um nível médio-alto no indicador asequibilidade (□3.7: médio-alto) e indicadores com um nível baixo-médio, como a individualização (□2,68: baixo-médio) e a possibilidade de correção de erros (□2.94: baixo-médio). O indicador de qualidade entre o curso em linha mencionado e o Projecto Integrador III (presencial) atingiu um nível médio, sem diferenças significativas ($p=0,324$). Considera-se que o ensino da matéria em análise através de plataformas virtuais pode ser satisfatório segundo os critérios do corpo estudantil representado.

Palavras-chave: Critérios do corpo estudantil; Trabalho de projecto de graduação; Google-Meet.

INTRODUCTION

One way to measure the quality of education is to carry out a correct conception and structuring of the designs of a career and the subjects that compose it, in its macro and micro curriculum. This task is of utmost necessity to control the scope and limitations of a sudden change of paradigm, teaching-learning method or application of unusual techniques and technologies, as currently observed by the pandemic caused by Covid-19 and the online teaching of most of the classroom subjects in Ecuadorian universities, including the sciences of physical activity and sport, for which some authors such as [Palacios, & Fuertes \(2020\)](#) have already made an analysis of the impact on higher education.

To education, in each historical period, corresponds certain objectives and its implementation requires a whole process of planning and development of curricular design ([Pérez & Graus, 2017](#)), including the essential feedback that starts from the control of the teaching-educational process in an integral way, ([Pérez Pino, Enrique Clavero, Carbó Ayala, & González Falcón, 2017](#)).

Online education is a teaching-learning model that pursues a purpose of guiding and contributing to education through various strategies and technological tools ([Schwartzman, Tarasow, & Trech, 2019](#)), the latter belonging to the new information and communication technologies, promoting individual knowledge of society in general.

Online education, even, is an alternative for Physical Education teachers, a subject that, although eminently practical, can establish actions that individually or in conjunction with the family could respond positively to the development of physical capacities and skills. [Yáñez-Figueroa \(2015\)](#) emphasizes the importance of teacher training from the primary level of education, including the application of questionnaires to collect information of interest, related to the perceptions of the impact of academic achievement in the classroom, being such perceptions mechanisms of prospective improvement of the contents, methods, procedures and techniques of knowledge transmission, an aspect that justifies, to a large extent, the general objective of this research.

The present pandemic caused by the Covid-19 virus has implied substantial modifications from the praxis, in the way in which diverse contents are taught from the face-to-face classes to the relative new format of online education ([Andrade, Espinal, & Giraldo, 2020](#)), initiating, according to authors such as [Mendiola \(2020\)](#), a profound change in everything that teachers do, where online education is a relatively effective response to the crisis generated ([Abreu, 2020](#)).



Within the curriculum taught in various Ecuadorian universities, for any university career, the design of graduation profile models is a methodological step that allows, among other aspects, to guide the student and teacher-evaluators, to delimit the scientific actions to solve a research problem, This is the case of the subject *Work in function of the degree project*, used in all university careers taught at the University of the Armed Forces ESPE, a subject that guides the student in three units to form a graduation profile, based on the contributions already acquired from various precursor subjects, such as Research Methodology and Integrative Projects.

In the abrupt change of the educational paradigm, measuring the impacts on the students of this subject, through the description and correlation of some personal criteria, will make possible a classification of certain scopes and limitations of the online education modality, aspects that could be taken advantage of and corrected, improving in the future the advantages of the distance education system, if necessary, aspects that give this research pertinence, in relation to the objective of the Master in Education: Mention in Educational Technology and Innovation of the National University of Chimborazo.

In the evaluation of the scope and limitations of a subject in higher education, an objective of improving the curriculum and educational institutions is evident, being an essential input to start the process of improving educational quality, (Salas Perea, 2016) as a design that anticipates the action and that allows guiding or conducting a process.

Evaluation is a pedagogical category that reflects one of the components of the teaching-educational process, (Rodríguez, et al., 2015; Pérez Pueyo, López Pastor, Hortigüela Alcalá, & Gutiérrez García, 2017) of great importance in the pedagogical field, involving teachers and students as protagonists. Its approach is integrative because it is based on the unity of the cognitive and the affective in the formation of the personality; it includes a value judgment of the fulfillment of the proposed objectives, so it is qualitative in essence and has different dimensions because it covers the evaluation of learning, the evaluation of pedagogical work or teacher performance, institutional evaluation and curricular evaluation.

In this sense, any curricular design and evaluation process should consider the perception of the student body (López, San Martín, Villalobos, & Ponce, 2016; Vidergor & Ben-Amram, 2020; Pricinote, et al., 2020) in order to evaluate the impacts that can be modified in the future, with the purpose of establishing the pertinent improvements.

From the preliminary analysis carried out by the students of Physical Activity and Sports at the University of the Armed Forces ESPE and from the personal experience of the author of this work, this project will try to evaluate the subject *Work in Function of Degree Project*. This subject was taught for the first time in the last semester (Course May 1 to September 20, 2020), from the virtual platform Google-Meet; this was promptly remodeled in function of virtual education, given the confinement caused by Covid-19. In this context, some components are modified, such as the didactic conception, in relation to the face-to-face modality previously taught. It is, therefore, a necessity to have the pertinence assessments issued by the students of the scope and limitations in the teaching of this subject, with respect to the face-to-face education model that preceded it, which is the main thematic axis of the research.

This work arises from the need to promptly modify a face-to-face teaching model to a virtual model, as has been the case of the subject *Work in Function of Degree Project*. This subject was taught to future graduates in Physical Activity, Sports and Recreation;



it urges the need to determine the impacts of this distance learning modality by the students themselves. In this objective, a scientific problem has been posed to be solved, which derived in the purpose of the present research and that will be to determine the criteria of the students of the career in Sciences of Physical Activity and Sport of the University of the Armed Forces ESPE on the subject Work in Function of Degree Project, taught in Google-Meet.

MATERIALS AND METHODS

The criteria of the population were studied, of students in Pedagogy of Physical Activity and Sport of the University of the Armed Forces ESPE who took the subject "*Work in Function of Degree Project*" (TFPG in Spanish) of eighth semester, virtually (May 1 to September 20, 2020), amounting to 37 students of the group CHUM - 43069 (NRC: 5174) and 10 students of the group CHUM -43069 (NRC: 9431), for a total of 47 students of both genders.

A questionnaire with various indicators of analysis was applied after the conclusion of the subject studied in the month of October 2019. The analysis indicators are described below:

1. Effectiveness (Ef): refers to the fact that the course taught online has the capacity to achieve its purpose, in terms of acquiring the knowledge inherent to it.
2. Affordability (As): refers to its affordability in order to correctly acquire the knowledge being taught.
3. Error correction (EC): refers to the possibilities that the online teaching modality has for the correction of errors made by the students in the subject taught.
4. Individualization (In): refers to the capacity to carry out individualized work, using the online teaching-learning modality.
5. Accessibility (Ac): refers to the possibility that the students have in terms of having the essential technological resources to achieve an effective online education in that subject.
6. Quality (Ca): refers to an integral indicator used to characterize the positive teaching-learning potentialities between the subject studied (online) and the subject Integrating Project III (face-to-face), with similar purposes.

A comparison of the Quality indicator, described above, will be made between the subject *Work in Function of Degree Project* (TFPG: 8th level) and the subject Integrating Project III (PI3: 6th level). This subject has been taught to all the students studied, with a view to correlating the theoretical level provided by the students of the first subject taught in the online mode and the second subject taught in the face-to-face mode. The Integrating Project III course was chosen for this comparison since it was taught by the professor who directed the subject studied, reducing the margins of errors since the professional had the didactic norms of teaching-learning established and the same model of control-direction, in addition to both subjects having complementary contents.



In the evaluation of the indicators studied, a Likert-type scale of five levels (level 1: very low; level 2: low; level 3: medium; level 4: high; level 5: very high) was applied, according to the criteria of the students consulted. The Mann-Whitney U ($p \leq 0.05$) was applied to compare the results obtained in the theoretical evaluation issued by the respondents, as there was no normal distribution of the data obtained.

RESULTS AND DISCUSSION

The objective results of the study of the indicators (Table 1) determined that the highest average score was achieved in the "accessibility" variable ($\bar{x}4.21$: high) and the lowest average score in the "individualization" variable or indicator ($\bar{x}2.68$: low-medium), while the "CE" variable ($\bar{x}2.94$: low-medium), the "As" variable ($\bar{x}3.7$: medium-high) and the "Ef" variable ($\bar{x}4.06$: high) obtained qualitative results between a low and high level.

Table 1. - Results obtained from the study of the indicators

No	INDICATORS				
	Ef	As	CE	In	Ac
1	3	3	2	2	3
2	4	3	3	2	4
3	4	4	3	2	3
4	5	3	3	3	4
5	3	4	2	2	3
6	4	4	3	3	2
7	5	4	3	2	3
8	5	3	3	3	4
9	4	4	4	3	3
10	5	3	3	3	4
11	5	3	4	2	5
12	4	3	5	3	5
13	5	4	3	2	5
14	3	4	3	3	5
15	4	4	3	1	3
16	3	3	3	1	3
17	4	4	4	3	4
18	4	3	3	2	5
19	4	3	2	3	4
20	2	3	2	2	4
21	5	4	3	3	4
22	4	4	3	2	5
23	4	5	2	3	4
24	5	5	3	3	5
25	5	4	3	4	4



26	3	4	3	3	5
27	4	3	2	2	5
28	5	3	3	3	5
29	4	3	4	2	5
30	5	3	3	3	5
31	4	3	2	2	4
32	4	4	3	2	5
33	3	3	4	2	4
34	4	4	3	3	3
35	3	3	4	3	4
36	3	4	3	2	5
37	4	4	2	3	5
38	4	3	2	2	5
39	4	4	1	3	4
40	5	4	2	3	5
41	4	4	3	3	4
42	4	4	4	4	5
43	5	5	3	5	5
44	5	5	2	5	5
45	4	5	3	3	4
46	3	4	4	3	4
47	4	4	3	3	4
□	4,06	3,70	2,94	2,68	4,21

In terms of accessibility to the technologies that make it possible to correctly implement the contents of the subject Work in Function of Degree Project, the surveyed students issued favorable criteria, which makes it affordable for its implementation, an indicator related to the possibilities of electronic and technological acquisition, according to **Ponce (2018)**. It is shown that this is the online teaching-learning model feasible for the material and technological resources existing in the student body of the University of the Armed Forces ESPE, in the career of Pedagogy of Physical Activity and Sport.

On the other hand, the indicator with the lowest score obtained (Individualization) evidences a problem that, apparently, is inherent to online education. This is demonstrated in the average score obtained by the students surveyed (□2.68) that distance education has problems in applying the principle of educational individualization, given the lower student-teacher interaction. In this context, the ideas of **Pedró (2020)**, that quality education implies an individualized follow-up in unison with the academic rhythm, thus avoiding school dropout, are kept in mind. This aspect is a significant indicator, especially in vulnerable students, a limited aspect in distance education.



On the other hand, and related to the aforementioned indicator, the correction of errors as an indispensable method in educational evaluation, (Quintana, Alpízar, & Herrera, 2017; Morales & González, 2014) is valued at the students' criteria, with a relatively poor level, reaching a qualitative average of Low-Medium, indicating that the online education modality has certain shortcoming that is usually relatively results in face-to-face education. In the case of the "affordability" indicator, the students' criteria showed an acceptable qualitative rating (medium-high), in relation to the possibility of correctly acquiring the knowledge taught in the online modality, although as a recommendation it would be appropriate to carry out a future comparison with the face-to-face modality.

In the case of the effectiveness indicator, the students' criteria did evidence a positive score, reaching a qualified average rating of High; it is deduced that one of the most tangible aspects that distance education possesses, in many cases, a variable used to control more comprehensive indicators such as educational quality, as can be evidenced in Contreras Maradey & Gómez Zermeño (2017).

On the other hand, the indicator "quality", related to other indicators implicit in it, such as the effectiveness of the teaching-educational process itself, was subjected to a comparison between the subject under analysis and the subject Integrating Project III (Table 2), evidencing the theoretical results obtained with the criteria issued by the students participating in the study.

Table 2 shows a similar mean or average achieved in the quality indicator, measured by the students, where the theoretical quality obtained in the online course "Work in Function of Degree Project" reaches an average score of 3.28 (medium level), slightly higher than the average score achieved by the theoretical quality evaluated (□3.09: medium level).

Table 2. - Results of the "Quality" indicator between the subjects *Work in Function of Degree Project* and *Integrating Project III*

No	QUALITY	
	PI3	TFPG
1	3	4
2	4	4
3	4	4
4	3	4
5	4	3
6	3	4
7	4	4
8	3	4
9	4	3
10	3	4



11	4	4
12	4	4
13	4	4
14	3	3
15	4	3
16	2	3
17	3	3
18	4	4
19	4	4
20	3	3
21	2	2
22	2	3
23	3	3
24	3	3
25	2	3
26	2	3
27	3	2
28	4	4
29	3	3
30	4	3
31	3	3
32	2	2
33	2	2
34	2	2
35	2	3
36	3	4
37	3	3
38	4	4
39	5	4



40	3	3
41	4	4
42	2	3
43	3	3
44	1	3
45	1	2
46	4	4
47	3	3
<input type="checkbox"/>	3,09	3,28

When statistically comparing both grades obtained in the "quality" indicator for the correlated subjects, the Mann-Whitney U test did not show significant differences ($p=0.324$), indicating, according to the students surveyed, that both subjects taught by different modalities have similarly the same quality (integrally speaking), although the average ranks obtained with the statistic are higher in "TFPG" (50.09) than in "PI3" (44.91), showing a slightly higher quality in the subject taught in the distance mode. 09) than in "PI3" (44.91), showing a slightly higher quality in the subject taught in the distance mode, an aspect that should be studied in depth to demonstrate, through the scientific method, the causes and effects of said evaluative process.

In accordance with what was described in the introduction, the teaching-learning process must be monitored at all times by each of those involved in it, including the students (López, San Martín, Villalobos, & Ponce, 2016; Vidergor & Ben-Amram, 2020; Pricinote, et al., 2020; Barroso, Calero, & Sánchez, 2015) which will allow to check integrally and at all times the achievement of the objectives proposed by an educational system, constantly detecting the external and internal variables that help or hinder a facilitating effort of the learning process.

This research will benefit the teaching staff of the aforementioned subject and others, such as Research Methodology and Integrating Project III, which have direct and indirect contributions. The benefits to the teaching staff are fundamentally framed in being able to know some perceptions that the students have about the new way of acquiring knowledge, establishing a comparison with the face-to-face education modality, for which the scopes and limitations of the teaching-educational process detected could be corrected or improved in the new semesters to come, including the face-to-face ones.

CONCLUSIONS

In conclusion, it is summarized that the subject *Work in Function of Degree Project*, taught through Google-Meet, in the opinion of the students surveyed, shows indicators with a high level of accessibility and effectiveness, a medium-high level in the affordability indicator, a medium level in the integral quality indicator and indicators with a low-medium level such as individualization and the possibility of error



correction. In this sense, it is considered that teaching the subject under analysis through virtual platforms can be satisfactory in the opinion of the students studied.

The scopes and limitations in this project show a clear development to know in which conditions it was possible to evaluate the students and to know the criteria in a clear and precise way.

The research did not interfere in the time spent by the students when their study hours were executed, a clear support to carry out this procedure is evidenced and a clear interest is appreciated.

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The authors declare not to have any interest conflicts.

Authors' contribution:

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