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Artículos Científicos

Claroscuros en la formación de técnicos superiores universitarios. El fomento de las habilidades para la argumentación en el aula

Chiaroscuros of the Technical Higher Education. The Incentivizing of Argumentative Abilities in the Classroom

Claroscuros na formação de técnicos de universidades superiores. Promoção de habilidades de argumentação na sala de aula

Mónica Muñoz Muñoz

Universidad Autónoma de Zacatecas, Área Académica de Humanidades y Educación,
México

mmunozmunoz74@gmail.com

<https://orcid.org/0000-0002-3948-2815>

Ivonne Ibarra Peña

Universidad Autónoma de Zacatecas, Área Académica de Humanidades y Educación,
México

yvip78@yahoo.com.mx

<https://orcid.org/0000-0002-6168-0607>



Resumen

En el abanico de posibilidades de educación superior en México, existe un subsistema que pertenece a la Coordinación General de Universidades Tecnológicas y Politécnicas denominado *universidad tecnológica*, producto de las políticas educativas ligadas al sector productivo. Este trabajo es resultado de un estudio de caso sobre la realización de textos argumentativos en la Universidad Tecnológica del Norte de Aguascalientes, México; tiene como objetivo el análisis de la práctica de la argumentación escrita en los momentos en que se utiliza para la construcción del conocimiento. La metodología es de carácter mixto. Recogió datos cuantitativos y cualitativos que permitieron el abordaje del objeto de investigación de manera compleja. Durante dos meses se observó de manera pasiva el trabajo y la interacción en el aula entre alumnos y maestros; también se analizaron textos escritos por 60 estudiantes bajo la etiqueta de “argumentativos”. En cualquier tipo de educación superior, es indispensable concebir la escritura como un proceso que permita clarificar, organizar y compartir ideas, además de crear interrogantes y conclusiones, para que los estudiantes se puedan integrar al mercado laboral con las habilidades cognitivas propias del discurso argumentativo. Sin embargo, en la formación de técnicos superiores universitarios no se propicia el desarrollo de la argumentación desde la práctica educativa.

Palabras clave: argumentación, aprendizaje, lenguaje escrito, trabajos de clase.

Abstract

Within the range of options for higher education in Mexico, there is a subsystem belonging to the Coordinación General de Universidades Tecnológicas y Politécnicas called *Technological University*, product of the educational policies linked to the productive sector. This work is the result of a case study on the production of argumentative texts in the Universidad Tecnológica del Norte de Aguascalientes, in Mexico. Its objective is to analyse the practice of written argumentation when used in the construction of knowledge. The methodology is mixed. For two months the work and interaction in the classroom between students and teachers was passively observed. Texts written by 60 students under the label of “argumentative” were also analyzed. In any type of higher education, it is essential to conceive writing as a process that allows the clarifying, organizing and sharing of ideas, as well as creating questions and conclusions, so that students can integrate into the job market



with the cognitive skills of argumentative discourse. Nonetheless, there is no encouragement towards the development of argumentation in the educational practice used to train students of technical higher education.

Keywords: argumentation, learning, written language, classwork.

Resumo

No leque de possibilidades do ensino superior no México, existe um subsistema pertencente à Coordenação Geral de Universidades Tecnológicas e Politécnicas, denominado universidade tecnológica, produto de políticas educacionais vinculadas ao setor produtivo. Este trabalho é o resultado de um estudo de caso sobre a elaboração de textos argumentativos na Universidade Tecnológica do Norte de Aguascalientes, México; seu objetivo é a análise da prática da argumentação escrita nos momentos em que é utilizada para a construção do conhecimento. A metodologia é de natureza mista. Dados quantitativos e qualitativos coletados que permitiram a abordagem do objeto de pesquisa de maneira complexa. Durante dois meses, foi observado passivamente o trabalho em sala de aula e a interação entre alunos e professores; Também foram analisados textos escritos por 60 estudantes sob o rótulo de “argumentativo”. Em qualquer tipo de ensino superior, é essencial conceber a escrita como um processo que permita esclarecer, organizar e compartilhar idéias, além de criar perguntas e conclusões, para que os alunos possam se integrar ao mercado de trabalho com as habilidades cognitivas do discurso argumentativo. No entanto, no treinamento de técnicos de universidades superiores, o desenvolvimento da argumentação a partir da prática educacional não é incentivado.

Palavras-chave: argumentação, aprendizagem, linguagem escrita, trabalho de classe.

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Introduction

At almost any stage of school life, but especially at university, writing is a cross-cutting element of training; in any field of knowledge, it is the articulating axis of readings, reflections and new learning that allows the individual to put into words the transformation that they cognitively undergo. It is true, as Daniel Cassany (2012) argues, that writing is learned; writing can be used to better understand any topic. However, the repercussions of said competence go further if it is taken into account that it allows the progression of thought processes and, therefore, forges minds capable of facing the challenges of professional and daily life.

Writing not only allows the registration and accumulation of knowledge, it also promotes a specific way of learning: a learning culture (Pozo, 2012, p. 92). In addition, it creates new cognitive possibilities, new capacities or competences that become concrete in critical and reflective thinking; learning to write is learning to think. The writing exercise prepares the student to face challenges in various situations and contexts.

To the extent that education is committed to the development of critical thinking in classrooms, students are able to argue and make their own judgments. It is the path of reasoning and reflection that culminates in the formation of democratic citizens, capable of carrying out mental processes that lead to argumentation, which is used in public and private spheres to refute, to achieve the interlocutor's adherence to forms of thought and action.

In addition to the possibility of intervention from the point of view of the listener, argumentation has other benefits for those who practice it. The mind wakes up and becomes flexible; There is an improvement of the individual that, through critical thinking, gives value to the judgments imposed by family, work and even religious life (Weston, 2016, p. 16).

The mastery of argumentative discourse by higher level students is a fundamental element of human and social development. "As a component of human interaction, argumentative competence, defined as the ability to produce arguments, in all cultures is a key factor in political, labor, community and family success" (Gómez, 2012, p. 103).

This article is the result of a case study on the handling of argumentative discourse by a group of students from the Universidad Tecnológica del Norte de Aguascalientes (UTNA), which had as its axis the analysis of the practice of argumentative discourse in the

culture of learning, that is, at the times when it is used in the construction of knowledge and academic development.

The case study was made from three moments of the research, with a quantitative-qualitative methodological approach: 1) non-participant observation, supported by the qualitative research methodology; 2) the survey, which allowed finding parameters of the use of argumentation through the student's perception, and c) the application of a written exercise, through which the written argumentative competence was evaluated.

Argumentative writing

The teaching of the mother tongue in the university environment does not have to conform to the grammatical domain, such a position implies the conception of the language as a mere code that has to be combined in acceptable sequences. It is necessary that, as Álvaro Díaz (2015) asserts in *The written argumentation*, in a text the words and sentences can acquire different connotations from those that could be assigned to them in isolation; More than the construction of sentences within the norm, argumentative competence implies the making of coherent texts, which exercise phenomena such as cohesion, inference, presupposition and the delimitation of intentions (Díaz, 2015, p. 35).

At the university level, the grammatical domain barrier must be overcome and demand that the communicative principle prevails. "Language teaching must contribute to the acquisition and mastery of the most common communication skills in people's lives: speaking, listening, reading, understanding and writing" (Lomas, 2017, p. 49).

Specifically, in addition to considering syntactic rules in the production of a text, the university student must have indispensable competences such as being able to design the plan of an explanatory text and use strategies that guarantee coherence, cohesion and relevance, characteristics of argumentative texts. .

In the West, argumentation is within the rhetorical tradition, the discipline considered as the quintessential political activity:

The basic form of human coexistence is linguistic and, therefore, the ability to critically manage language is fundamental in societies like ours.

In this perspective, Rhetoric is not simply a secondary discipline of linguistics; much less can it be considered a synonym for empty or manipulative discourse. Similarly, we consider it important to distinguish

between Rhetoric as the science and art of argumentation and Rhetoric (lowercase) as the ability or ability to deliberate about what is appropriate in a situation, that is, the ability to argue (Monzón, 2011, p. 42).

By Peña (2008, p. 4), The problems in the construction of argumentative texts by the students lie in the exposition of ideas in an isolated and schematic way, in the lack of a prior plan for the construction of the text and in the ignorance of the conventions of academic writing.

According to the results that we present here, writing in technological universities primarily fulfills an evaluative function. When this is not the case, the act of writing becomes a mechanical activity through dictation, copying of texts written on the blackboard or answering a questionnaire that requires textual responses. These are actions linked to a precise reproduction of the original texts and, unfortunately, far from the development of cognitive skills.

It is necessary to insist on the conception of writing as a communication process capable of explicitly clarifying, organizing and sharing ideas, in addition to creating and sharing questions about the content of learning. The previous actions provoke reflection at the time of writing and, therefore, the construction of knowledge in the student because they involve the use of the written word in the consolidation and development of ideas, having the possibility of returning to these to clarify them and , in due course, reaffirm or refute them.

At the university level, whatever the field of action of the future professional, “learning to write is at the same time learning to think critically and creatively. In other words, we better develop our ability to think critically as we learn to write academic texts (essays, reports, reviews, monographs)”(Díaz, 2015, p. 32).

Discourse in its different forms (exposition, description, narration and argumentation) has two separate purposes. Argumentation, a fundamental theme of this article, is an indispensable communicative element for university students to carry out reasoning typical of critical thinking.

Argumentative texts are written that make it possible to create connections with other opinions and integrate knowledge from different sources of information until forging one's knowledge. In other words, "argumentation is a way of convincing or achieving adherence from a certain audience, relying on rational criteria" (Díaz, 2015, p. 5).

Arguing involves making comparisons through finding similarities or differences; make analogies; define terms, concepts and ideas; analyze causes and effects. The paragraphs of the argumentative writing have special purposes that allow the text to be ordered as a whole, frequently under the outline of an introduction followed by the development of the central idea with its respective premises and a concluding section.

If, as previously stated, the forms of discourse interact with each other, it is possible that in the argumentation narrations or descriptions are used as arguments. It is also possible that a single complex sentence maintains the structure of introduction, hypothesis, argumentation and conclusion, which in turn will belong to a larger argumentative structure characterized by a higher level of depth but made with the same procedure and structure; the argumentative text is in turn constructed by mini argumentative structures.

Critical thinking is the backdrop to the argumentative text, which is why it becomes a discourse that links the humanities with the rest of the areas of knowledge and a necessary tool for any professional to communicate, persuade or refute.

In addition, argumentative writing, by including coherence in the approach of ideas, supposes an organization or arrangement of paragraphs and sentences with a specific communicative purpose, where any argument can be modifiable, can be rethought and questioned because it serves as the basis for later arguments of both the author and his readers.

At university level, the elaboration of argumentative texts is essential, as confirmed by Cristián Santibáñez (2018), who in Origin and function of argumentation broadly explains one of his main theses: in academic contexts in which it is preserved, generates and disseminates knowledge through written documents, argumentation is an intrinsic condition of discourse that gives solidity to the writing and prestige to the author.

The technological university and writing

In the range of possibilities of higher education in Mexico, there is a subsystem that belongs to the General Coordination of Technological and Polytechnic Universities [CGUT] (2016) called technological university, which is the product of educational policies linked to the productive sector and which has mission to train higher university technicians. The UTNA, which belongs to the subsystem of technological universities, provides technical training under the management of science and technology

The UTNA began offering two-year courses to students graduated from upper secondary education in order to grant the title of University Superior Technician (TSU) and to incorporate their graduates into the productive field in a short time. The curriculum includes 30% theory and 70% applied or practical knowledge that includes visits to companies and projects (CGUT, 2016).

When analyzing the base documents of technological universities such as the curriculum, the professional profile and the matrix of professional competencies in relation to the promotion and development of writing, it was found that written competence is defined as "generic" , so it must be present throughout the student's training journey, but especially when evaluating the student's progress in each subject.

Thus, writing is an evaluative activity. Different types of texts are carried out in each subject, although the description predominates as a discursive form because the academic works, in their majority, are reports, logs, manuals, reports, inventories, master plans, checklists, procedures and checklists.

In addition, the study plan for the different UTNA careers includes the Oral and Written Expression didactic unit, which, due to its content and characteristics, is responsible for promoting linguistic competence in its different modalities and discursive forms. However, since writing is a generic competence, argumentation must also be promoted by the rest of the didactic units or subjects. To justify such a proposal, a strong argument can be the following:

Another risk of teaching to write and read in ad hoc curricular spaces is the potential irrelevance or lack of meaning that students may find in them (Myers Zawacki and Taliaferro Williams, 2001). Students who have chosen Sociology or Physics as a career, for example, often wonder why they should take a general writing and / or reading workshop. On the other hand, if the

Sociology teacher were to spend class time discussing the text he gives for reading and collectively reviewing part of what they have written, they would probably feel guided in what they chose to train. Likewise, if in the communication workshop—in charge of a Physics teacher and a writing teacher—a writing project was agreed and guided to participate in a specialty congress, the students would feel called. (Carlino, 2013, párr. 28).

To the extent that teachers use writing as an instrument of learning rather than as an opportunity for assessment, young people may stop feeling threatened by the words they write, by the texts they shyly write, as well as by those who write mechanically where the source texts are to be repeated; They have implicitly learned that they do not need to demonstrate a position and argue it.

Regarding the importance of argumentative skills we know the following:

Argumentation cannot be associated with or will depend only on a written text, because more than a type of text or discourse, argumentation is an attitude towards science, a way of looking at the production of scientific knowledge and of communicating it, a way of do well to influence and persuade from what we say, but also from what we do and are (Zambrano, Orozco y Caro, 2016, p. 53).

Therefore, the promotion and possibility of developing argumentative skills cannot be ignored, regardless of whether the educational profile is technological or not, regardless of the school level, whether it is university or not.

Methodology

This article is the product of the case study carried out at the UTNA during the 2017-2018 school year with the students of the fourth semester of the Industrial Maintenance degree, one of the races with the longest standing and demand within this subsystem of technological universities.

The case study methodology is based on a mixed research approach, that is, it has a phase of quantitative data collection and another based on non-participant observation that involves the collection of qualitative data. Humanistic and educational research allows the establishment of relationships between quantitative and qualitative methods; the former

involve the accumulation and statistical reading of data, while the latter are relevant to analyze the particularities of the object to be investigated.

As Javier Núñez (2017, p. 245) explains, both research methods can be opposed or complementary. In this last position is the mixed method, which is governed under the principle of feedback between quantitative and qualitative observations to achieve a better understanding of the investigated object, that is, a complex approach, enriched according to the proposal of Edgar Morin (2008).

In addition, in educational research, the mixed approach is recommended because it allows registering the point of view of the participants, in this case, the UTNA students, whose gaze and position becomes part of the research by also including the performance of teachers and the description of the school climate.

The approach of a mixed method design for the approach to study themes in the pedagogical field is viable, especially when there is an evident intention of the researcher to give voice to the participants and to the participants; In this sense, when not only is the numerical data obtained, but the participant's most intimate vision is also sought, qualitative data plays a relevant role. (Pereira, 2011, p. 27).

The case study has as one of its virtues the direct approach with the center of every educational institution, the students, who are the ones who directly experience the moments in which the institution and the teachers promote writing. The mixed approach, therefore, is justified to meet the research objectives.

The informants, 60 students from the Industrial Maintenance degree at UTNA, were 18 to 20 years old at the time the data was obtained. Although they were pursuing their university studies in Aguascalientes, they were originally from municipalities belonging to the state of Zacatecas (Cd. Cuauhtémoc, Luis Moya, Loreto, Luis Moya and Villa García) and others from the same hydro-warm state (Cosío, Pabellón de Arteaga, Rincón de Romos, Asientos, San Francisco and Tepezalá). Despite being able to belong to different political entities, the informants shared cultural traits determined by the rural context, although they had a genuine interest in the technical advance promoted by the technological university.

Based on Núñez's (2017, p. 644) proposal for a mixed methodology, the methodological phases were four and are described below.

Phase one. Quantitative

During the month of September 2017, the data was obtained through the application to the 60 informants of a written exercise based on the Fonseca proposal (2011, p. 296). Students had to write a text with a basic argumentation structure: a premise sustained and developed through arguments until reaching a conclusion. It was essential that the texts were built with cohesion and coherence, however, formal elements such as the type of links used and lexical precision were also taken into account in their evaluation.

Phase two. Development mode

The data obtained in phase one were statistically analyzed, from which a questionnaire was prepared that allowed obtaining qualitative and quantitative data. At this stage, the main objective was to investigate the student's exercise and perception regarding their academic performance through writing, that is, to know how students conceive writing and what importance they give in the construction of knowledge to argumentation. The questions were the following:

- 1) What are the jobs you do most often as a UTNA student, such as the report, the essay, the summary, the synthesis, the questionnaire or other? List them based on frequency of use.
- 2) When preparing a written work, do you follow any procedure? If so, describe it.
- 3) What are your strengths and weaknesses in writing?
- 4) Do you like to write? Why?
- 5) Why is writing more important? To carry out work, academic, interpersonal or professional activities?
- 6) Do you consider it important that a TSU have good written competence?
- 7) What elements of argumentative writing do you consider necessary to carry out your profession?
- 8) Do you think that UTNA has contributed to improving your writing?

Phase three. Qualitative

Through non-participant observation, the object of the investigation was contacted in a multidimensional way, since the investigation in situ allowed observing contexts, reactions, teacher-student interaction and diverse situations. During the months of October and November 2017, the activities in the classroom of the fourth semester students and teachers of the Industrial Maintenance career at UTNA were observed. In total, 26 sessions of 50 minutes each were observed, belonging to the nine subjects that are part of the study plan. The observation process involved recording, with the help of a blog, the attitudes, moments, purposes and contexts in which the students used writing, putting special detail in argumentative writing, to indicate what, voluntarily or involuntarily, visible or hidden, has an impact on students' writing practice.

Phase four. Complementarity mode

The results obtained in the preceding phases were compared, understanding the results of the quantitative and qualitative phases as two types of data of a different nature that reflect, from opposite and complementary perspectives, the same object of study.

Results and Discussion

In phase one, the elaboration of an argumentative text quantitatively had negative results. Of the 60 students who made up the sample, only 11.7% produced an argumentative text with the basic structure: premise or hypothesis, argument and conclusion, that is, only seven informants. The rest of the texts produced had a structure much closer to the description: actions and attributes of a theme that were freely chosen were named; in the best of cases, opinions were given that were not supported by arguments.

The previous results made it difficult to deepen the analysis of argumentative discourse. Table 1 presents general characteristics of the texts produced by UTNA students. It was carried out based on the argumentative texts produced in the first stage of the investigation.

Tabla 1. Análisis cualitativo de textos argumentativos construidos por alumnos de la
UTNA

Estructura	Coherencia	Cohesión	Elementos gramaticales
<p>Los párrafos están contruidos por oraciones aisladas.</p> <p>El contenido semántico de las oraciones es repetitivo.</p> <p>Se enlistan características del tema en lugar de argumentos.</p> <p>Las oraciones introductorias son muy extensas, se construyen con adjetivos como <i>importante e interesante</i> sin llegar a plantear una premisa.</p> <p>Se registran oraciones cuya relación con el tema no se explica.</p> <p>Se utilizan afirmaciones como argumentos.</p>	<p>Se registran contradicciones en las ideas que constituyen un párrafo.</p> <p>Predominan las oraciones con un solo núcleo verbal, lo que dificulta la conexión de y el desarrollo ideas.</p> <p>Se detectan vocablos imprecisos semánticamente.</p> <p>No existe ni una organización deductiva ni inductiva en la exposición de ideas.</p>	<p>Se utilizan conectores causales característicos de la argumentación tales como <i>porque, pues, puesto que</i>.</p> <p>No se registran <i>dado que, ya que, por el hecho de que, en virtud de que</i>.</p> <p>No se utilizan otros conectores argumentativos tales como los de certeza (<i>es evidente que, es indudable que, en realidad</i>) y los de condición,</p>	<p>Se registraron errores básicos de puntuación y ortografía, de manera específica en el uso de las letras <i>z, s, c; b y v</i>.</p> <p>No se dominan las reglas de acentuación.</p> <p>Se utilizan coloquialismos.</p>

		<p><i>si, con tal de que, cuando.</i></p> <p>Entre los textos que sí se consideraron con estructura argumentativa predominaron conectores de consecuencia, (<i>luego, entonces, por eso</i>) y de oposición (<i>pero, aunque</i>).</p>	
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Fuente: Elaboración propia

As reflected in Table 1, the linguistic structures present in the argumentative opinions made by the students are not complete paragraphs; Most of the informants made one or two sentences in which they frequently repeated the same idea, in addition to simply listing or describing instead of arguing. They made no concrete claims and there was a significant production of sentences totally deviant from the topic.

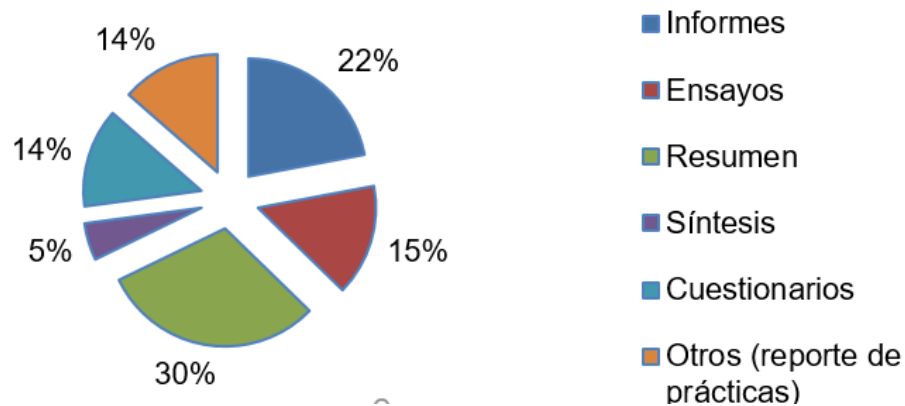
When some students wrote a complete paragraph, the coherence in their approaches was reviewed, thus contradictions were found in the different sentences elaborated. In addition, the sentences did not reach to be linked by the semantic content, only the grammatical, since it passed from one topic to another indiscriminately. Semantic inaccuracies also occurred at the lexical level.

Regarding the cohesion of the sentences, inappropriate links were used for the linguistic context and a significant presence of crutches, which appeared to be conjunctions such as because, but, and, grammatically unnecessary and foreign to the linguistic context

In phase two, regarding the most recurrent type of work where writing is used, the young people answered what can be seen in figure 1.

Figura 1. Trabajos escritos de alumnos de TSU

Trabajos que realizan los estudiantes de TSU en MI con mayor frecuencia dentro de su formación académica



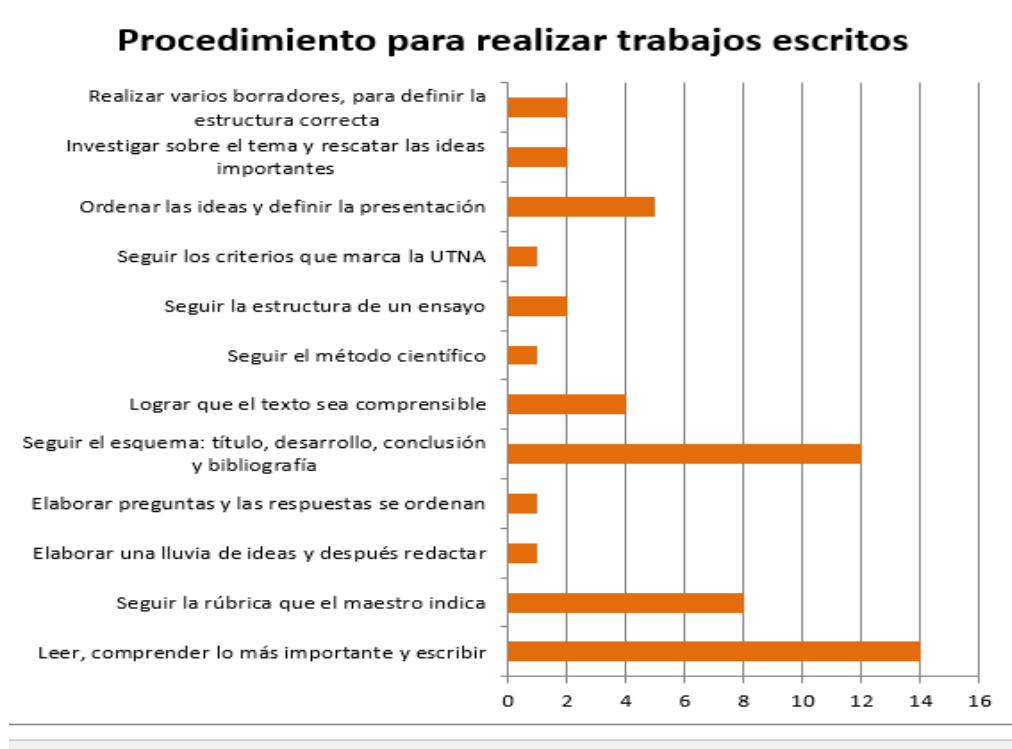
Fuente: Elaboración propia

As it can be seen, according to the opinion of the students, the summary constitutes a daily activity at UTNA, it obtained 30% of mentions, it was followed by the report with 22%; the trial was recorded with 15% and the questionnaire with 14%; Synthesis appeared last, with 5%. If this result is contrasted with what was observed in phase three, the non-participant observation, it can be concluded that the students have been benevolent in judging the moments when they judged their writing, since in situ it was found that the frequency of academic work follows the following order: summary, report and questionnaire; the trial simply did not run even though it appears third in the figure above. Undoubtedly, there is a predominance of enunciative activities within the formation of TSU. And with the same data, it is corroborated that critical thinking is not attended to, insofar as argumentation is not promoted.

The essay constitutes a personal writing where the point of view, opinion or position on a given topic is argued. Being able to carry out an argumentative essay is seen by Anthony

Weston (2016, p. 92) as conclusive proof of the mastery of such discourse. However, as we have seen, it is not a priority job at UTNA, despite the fact that it is a university level. Regarding the item “When preparing a written work, do you follow any procedure? If so, describe it”, the responses are shown graphically in figure 2.

Figura 2. Pasos seguidos en la realización de trabajos escritos



Fuente: Elaboración propia

In figure 2 it is possible to notice that of the 60 informants who participated in this investigation, only 43 admit to following a procedure at the time of writing papers; 70%. Figure 2 also demonstrates that only 12 of the 60 students follow a procedure similar to the structure of argumentative texts: they choose a title, develop ideas and reach conclusions, but they do not need, however, that they should write a hypothesis even when it is implicit in the title. The relative majority (14) is limited to reading, understanding the most important and writing.

In phase three, of a qualitative nature, non-participant observation allowed to explain some of the data obtained in the first methodological step of this research. The teachers' work consists, predominantly, in transmitting information that the students copy from the blackboard to the notebook. When there is some critical judgment on the part of the teacher,

the students do not give feedback to the communication. As a form of evaluation, the notebook in which the student has captured what the teacher indicated is usually reviewed. As a task, summaries of readings predominate. In planning their jobs, only two informants say they follow the structure of an argumentative essay.

All of the above determines that the presence of the essay —considered as a little recurrent in students— in the various subjects is not enough to develop an argument in the students or, failing that, to elaborate an opinion, since the majority of the students they only produce isolated sentences devoid of fundamental elements such as cohesion and textual coherence.

From the case study at UTNA, it was identified that students use writing mechanically, transcribe concepts, diagrams, take dictation and solve questionnaires. At the end of a session it is common for the teacher to request the students' writings to sign them, however, there is no feedback or revision; the teacher only provides a rubric.

According to the results of this research, writing as a process of construction of knowledge is not present during the development of classes; It seems only a media execution to record data and information provided by the teacher.

Regarding the rest of the academic works such as practice reports, exhibitions, reports, projects, tasks, stories, mental maps, dialogues, interviews and other didactic activities, it is important to mention the students towards the exhibition as a way of presenting the contents with the help of the discursive form of the argumentation, despite the fact that in this case the oral code predominates.

Essays and presentations, as they require argumentative elements, are activities that are carried out infrequently at UTNA. Something similar happens with the synthesis, which is the one that ranked lowest according to the results presented in figure 1. The difficulty of making a synthesis by the students is related to their little exercise in the elaboration of argued opinions .

Regarding the elaboration of their written works, students maintain two positions: there are those who point out that it is a reflective process and there are those who say that they only follow the teacher's instructions without appropriating what they are writing.

Within the first position, responses such as:

- I make several drafts to define the correct structure.
- I research the topic and rescue the important ideas.
- I order the ideas and define the presentation.
- I make the text understandable.
- I create questions or brainstorm.
- I read, I understand and then I write.

In the second position there are answers like:

- I follow the rubric that the teacher indicates.
- I follow the procedure established by the UTNA.
- I follow the structure of an essay.
- I continue with a presentation scheme.

As can be seen, there are those who have the purpose of using writing to understand and communicate the learning content and those who say they limit themselves to following an outline or work plan, depending on the elements previously defined by the teacher or the institution.

Since, as our results show, writing is not conceived as a procedure, the time devoted to it is very limited; Students during their classes do not take notes, unless it is indicated by the teacher and the works they present as part of the exhibitions are only transcripts of the content.

As part of phase four of the research, which reiterates the complementarity of quantitative and qualitative data, it can be stated that writing work in students is scarce, because during class the teacher is the protagonist, it is he who resorts to the expository technique regularly using resources such as a slide show. In this context, the students refer to copying concepts that the teacher has on the pintarrón, in the course of the class the copying process continues and in some cases it is interspersed with the dictation, so that they do not make argumentation a habit .

As Álvaro Díaz (2015) said, unfortunately for the Latin American countries, educational systems do not include in the curriculum or the development of all subjects enough activities in which the student has to read critically and write academic texts very frequently - especially essays— on various subjects. In some cases, because the teacher has not received appropriate training to carry out this activity, and in the worst case, because he

has not understood the importance of writing for the development of critical thinking operations.

According to López (2018), critical thinking is a conscious, systematic and deliberate ability, the product of analysis and assessment. Although every student makes and makes judgments, school training for critical thinking will make him use enough information, weighing the arguments and unraveling the premises that support them.

However, the data that this research collected shows that far from analyzing or constructing an argument and, therefore, developing critical thinking, UTNA students limit themselves to listening to the teacher and waiting for his indication to take notes, moving the process away of writing the construction of the argumentative discourse itself.

From the data presented, it is valid to say that writing fulfills an evaluative function, it is used to obtain a grade through the fulfillment of tasks, the answering of exams or the mechanical recording of notes directed by the teacher. It is written to deliver a product that allows obtaining a signature without attending to a planning of the text or an evaluation of the rhetorical content.

In the article by Bañales, Vega, Araujo, Reyna and Rodríguez (2015), it is proposed that written argumentation has a variety of forms, so that in university contexts, educational interventions must be in accordance with the training needs in textual genres. , the tasks and argumentative competences of specific disciplines.

However, the data collected shows that, to the extent that writing of essays or argumentative texts is not required or encouraged, the only textual genre that is promoted is the description through brief reports and practice reports.

Conclusions

Wrongly, writing can be considered as a code acquired in elementary school that in the future will serve for the expression and communication of the individual during daily life. However, it is necessary that it be seen further, as a way of appropriating culture, as an indispensable element in the construction of knowledge and as an irreplaceable tool in the development, transformation and valuation of learning. Before making argumentative texts, the apprentice must develop critical thinking through analysis, comparison and ranking, among other thinking skills.

The mixed methodological approach under which this research was carried out allowed the collection of concrete data. Only 11.7% of the students were able to elaborate an argumentative text with a basic structure. According to the perception of the students, the essay occupies the third place in the frequency of preparation of academic works (the first has the abstract, with 30%; the second, the reports with 22%). In obtaining qualitative data, the low presence of any work related to writing was verified, therefore, it is understandable that the essay is only 15% made, according to student perception.

In the UTNA context, it has been corroborated that the development of argumentative writing in TSU students is determined by the characteristics of the subsystem itself, that is, by the implicit agreement that the students will become industrial technicians, for which they do not they need to have developed critical thinking.

UTNA is recognized as an institution characterized by providing an education that tends to the use and mastery of technology. Furthermore, it belongs to a subsystem directed towards the rural population or marginalized urban areas. The educational service provided by UTNA has advantages such as the access of its graduates to a classified mid-level job within the industry. It has become a viable option for a population that previously did not have the possibility to study a profession.

For this reason, it is not possible, in the context of higher education, to consider training a student to perform a job as the sole criterion; the goal of education, regardless of educational level, should be the exercise of critical thinking coupled with creative thinking, only in this way can communicative emancipation, also called expressive and comprehensive de-alienation, be achieved, with which it is possible to create classrooms and, therefore, democratic societies.

Due to the characteristics of its students, UTNA must carry out a curricular adaptation where the educational model considers the academic needs and expectations of young people. The documents that institutionally govern the UTNA raise the disposition of learning in a practical way, however, in teachers, when teaching classes, the theoretical exposition of content predominates, which results in students resorting to memorization and leaving aside, the strengthening of linguistic, argumentative and cognitive competences.

Regarding the development of argumentation as a product of written work, it is concluded that although at UTNA writing is described as a generic competence, as a transversal activity,

it is only executed as a product of an order to evaluate the learning of the students. contained in the different subjects.

Although writing in the students should involve more practical hours, an unbalanced preference for the theoretical knowledge of any subject was detected. It is written to develop descriptive works such as the report, the report, the inventory, the manual and the master plan.

Argumentative writing is approached only from the subject of Oral and Written Expression, which is interpreted as responsible for promoting the elaboration of texts with a correct grammatical structure, but not for promoting the making of texts that will be used to support or refute a concrete point of view, and to fulfill communicative and self-realizing objectives.

From the above, it can be asserted that writing is raised as a necessary but not fundamental trait for the learning of TSU students. This linguistic ability is officially intended to be a transversal competence, however, it was confirmed that no attention is devoted to the act of writing. Students do not make notes or texts in different discursive forms, they only transcribe or listen to the teacher's presentation.

Teachers use writing to evaluate learning content, but not for the development of learning, that is, there are no accompaniments or consultations in the writing process that have an impact on cognitive processes.

Therefore, it is pertinent to point out that, in the context of the mother tongue class at the university level, in addition to the supervision of the final text that includes the grammatical domain reflected in aspects such as spelling, syntax and punctuation, it delves into lexical precision, in the rhetorical aspects of the text and, as it was said in the first pages of this article, in coherence and cohesion.

With regard to discursive forms, the results of this research show that enunciative activities predominate in UTNA, then descriptive ones and argumentative ones with a lower rank of appearance.

Often the writing is reduced to orthographic terms and, at best, syntactic. However, if it is understood from the functional and communicative levels, its scope is much greater. You can no longer pretend to learn to write at university using a traditional memory method that detracts from the cognitive process.

The lack of a reflective and critical process in the development of writing prevents higher education in Mexico from becoming, in turn, the formation of critical minds capable of developing in any academic, investigative and work context.

It is convenient to consider that this research took into account the development in the UTNA of students who frequently come from precarious academic and social fields, given that the nature of said institution is to incorporate young people from rural areas into the industry, that is, surely the results They do not reflect the reality that Mexico yearns for from the work of higher education institutions because the bases of school performance are weak in the population that made up the sample.

It is also necessary to warn the reader that argumentative texts were not analyzed with the depth that such discourse implies, for example, the type of arguments (generalizations, analogies, causes, deductions), because the UTNA school activity does not even allow its generation, that is to say, it would have been necessary and comforting for those who sign this work to analyze the level of argumentation of the students if said discursive form were part of the concrete reality they face and not only of the good intentions set out in the base documents of the institution.

From the research described here, it is argued that the different discursive forms should be present in the learning strategies carried out by the students; It is common for students to carry out descriptive work, however, a higher education with a technical aspect requires a participatory and critical pronouncement in the face of technological progress, its social repercussion and its ethical purpose, for which it is essential that the technological university take as a challenge to train their students in argumentation.

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Rol de Contribución	Autor (es)
Conceptualización	Mónica Muñoz Muñoz
Metodología	Mónica Muñoz Muñoz
Software	No Aplica
Validación	Mónica Muñoz Muñoz (Principal) / Yvonne Ibarra Peña (Secundario)
Análisis Formal	Yvonne Ibarra Peña
Investigación	Yvonne Ibarra Peña
Recursos	Yvonne Ibarra Peña
Curación de datos	Yvonne Ibarra Peña
Escritura - Preparación del borrador original	Mónica Muñoz Muñoz (Principal) Yvonne Ibarra (Secundario)
Escritura - Revisión y edición	Mónica Muñoz Muñoz
Visualización	Mónica Muñoz Muñoz
Supervisión	Mónica Muñoz Muñoz
Administración de Proyectos	Mónica Muñoz Muñoz
Adquisición de fondos	Mónica Muñoz Muñoz