

Clusters of ethical conceptions among Latin American university students

Sthefanny Gabriela Analuisa Aroca¹, Iván Alberto Analuisa Aroca², Ruth Paulina Solorzano Casco¹

1. Escuela Superior Politécnica de Chimborazo, Ecuador. 2. Universidad Técnica de Manabí, Ecuador.

Abstract

This text discusses perceptions of ethical values based on interactions across different social strata and academic fields. The aim was to group and evaluate students' perceptions of ethics in various Latin American countries using specific variables related to the topic. The social profile of members from different groups is described by shared characteristics and values. This cross-sectional study included 326 students from seven countries; 66.9% were women, and 66.7% were enrolled in public universities. The initial cluster in the dendrogram showed a similarity of 26; two main groups were later formed using Ward's method at a Euclidean distance of 15, generating several terminal subgroups of 16 and 14 at various similarity distances across the full sample. The findings highlight the importance of establishing ethical norms and values across all university settings in order to foster improved social habits.

Keywords: Education. Ethics. Professional training. Latin America.

Agrupamentos das concepções éticas em universitários latino-americanos

Resumo

Este documento promove uma reflexão sobre a percepção dos valores éticos a partir da convivência nos diferentes estratos e áreas de estudo. O objetivo foi agrupar e avaliar as percepções relacionadas à ética em estudantes de vários países latino-americanos com base em variáveis específicas relacionadas com a temática. O perfil social dos membros de vários coletivos é descrito por características e valores comuns. O estudo transversal considerou 326 estudantes de sete países; 66,9% são mulheres, 66,7% estudam em universidades públicas. O grupo inicial do dendrograma teve uma semelhança inicial de 26, posteriormente foram formados 2 grupos pelo método Ward a uma distância euclidiana de 15, formando vários subgrupos terminais de 16 e 14 a várias distâncias de semelhança do total do estudo. As conclusões evidenciam a importância de estabelecer normas e valores éticos em todos os âmbitos universitários para alcançar melhores hábitos sociais.

Palavras-chave: Educação. Ética. Capacitação profissional. América Latina.

Agrupaciones de las concepciones éticas en universitarios latinoamericanos

Resumen

Este documento reflexiona sobre la percepción de los valores éticos, a partir de la convivencia en los diferentes estratos y campos de estudios. El objetivo fue agrupar y evaluar las percepciones relacionadas con la ética en estudiantes de varios países latinoamericanos a partir de las variables particulares, relacionadas con la temática. El retrato social de los integrantes de varios colectivos se describe en características y valores en común. El estudio transversal consideró 326 estudiantes de siete países. El 66,9% son mujeres, el 66,7% estudian en universidades públicas. El grupo inicial del dendrograma tiene una similitud inicial de 26, posteriormente se conformaron 2 grupos por el método Ward, a una distancia euclidiana de 15, conformándose varios subgrupos terminales de 16 y 14 a varias distancias de similitud del total del estudio. Las conclusiones demuestran la importancia de establecer normas y valores éticos en todas las instancias universitarias para alcanzar mejores hábitos sociales.

Palabras clave: Educación. Ética. Capacitación profesional. América Latina.

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Integral education is essential for a complete educational experience and, within the academic environment, requires the integration of moral, scientific, and methodological dimensions. Thus, students are guided and motivated to develop and complement their personalities, preparing to become well-rounded professionals with values and ethical grounding¹. Moral actions linked to professional ethics demand a careful analysis in light of the requirements of each profession and the activities to be carried out in society in the future. The shared responsibility of higher education institutions (HEI) in fostering values increases daily with the demand for young people capable of assuming strategic roles with a high degree of responsibility and ethics².

The teaching of values among university students involves processes of personal formation through interactions and the ongoing transformation inherent in development for the elaboration of values. Socialization entails intellectual, moral, and psychological capacities, reflected in attitudes and behaviors of utmost importance^{3,4}.

According to United Nation's (UNESCO) criteria for achieving the Sustainable Development Goal⁴ on Quality Education, a high level of coherence must be established between the ethical framework, infrastructure, and culture, so as to contribute to social equity and quality of life for the entire population, while also instituting processes of innovation, relevance, and communication for the advancement of research⁵⁻⁷. The complement to quality education lies in the interaction of technological and scientific development, effective administration, transformational leadership, and ethical management. Education shapes the sociability historically required; thus, no society develops solely from an isolated event, but rather from the level of its civilizational development, grounded in a value system^{8,9}. The engagement of HEIs is a fundamental factor in instilling values and motivating students to take part in activities that allow them to strengthen their ethical orientation, and it should serve as the impetus for performing future professional functions with both responsibility and integrity. The quality of motivation is, therefore, central to the formation of values among university students².

Within the context of research ethics, it is conceived as an intellectual and experimental procedure employing a multiplicity of methods, systematically applied, with the goal of investigating a theme or problem, while also expanding and developing knowledge of scientific, social, humanistic, or technological relevance¹⁰. Professional ethics also encompasses the qualities that distinguish meaningful engagement in the university context; and issues such as inappropriate behavior, indifference toward student concerns, negative attitudes, or the failure to uphold norms and individual rights are all part of the learning environment, collectively shaping the emotional climate and later replicated by students in their field of work¹¹.

Furthermore, it must be acknowledged that every professional is bound by professional, technical, and ethical commitments so that, when making decisions, their conduct is guided by values that benefit society^{12,13}.

In scientific literature, the perception of ethics is identified as the way individuals interpret ethical principles and define correct and incorrect conduct. Ethical perception is studied across multiple countries and contexts¹⁴, and it is often observed that ethical instruction originates within the family environment, where principles and values are first learned, while educational institutions serve as a reference to reinforce them. The motivational formation of personality must meet the needs of students responsibly and foster in them the sense of acting responsibly³. Ethics is regarded as a reflection of morality, encompassing the values and beliefs of daily life; while ethics seeks to justify such decisions¹⁵.

Given this context, this article sought to group and evaluate perceptions related to ethics among university students from various Latin American countries. To this end, the document was divided into the following sections: first, a theoretical framework on values and ethics among university students is presented, based on previous research by other authors, documents, and primary data on the characterization of interviewees related to the topic. Next, the methodology of multidimensional statistical grouping is presented, followed by a

detailed account of the participants' responses to the proposed questions used to characterize the profile under study, and, finally, the results obtained and the concluding considerations of the research are presented.

Theoretical framework

"Ethics" is understood as a reflective philosophical exercise on morality. While morality covers values and beliefs that define daily duties, ethics seeks to justify such decisions¹⁵. In this sense, ethics constitutes a set of institutional values, norms, and regulations that guide the enhancement of sound scientific practices and principles in research¹⁶. Meanwhile, "professional ethics" refers to ethical behavior rooted in autonomous values, responsibility, and professional competence¹².

Higher education institutions are called upon to foster cooperation and interaction between business, government, and academia to encourage creativity, innovation, and ethics directed toward improving quality of life through research. These studies seek to promote social well-being in their surroundings¹⁷.

Ethical values among university students

The development of ethical values is a continuous process of strengthening and improvement, both individual and collective, within society. The most common values associated with ethics in higher education are honesty, objectivity, openness, respect, responsibility, integrity, and impartiality¹⁸. In the context of scientific integration, ethical reflection on the use and preservation of data, analysis, research techniques, and communication becomes particularly relevant, along with the need for formal environments established by the institution^{4,18}. Higher education institutions can foster a shift in ways of thinking and appreciating one's own life model, thereby influencing ethical choices and behaviors across personal and professional domains, in every format^{19,20}.

General profile of interviewees

Gender and age

The study sample consisted of 326 participants. Of this total, 67% were women and 33% men. Participants' ages ranged from 17 to over 30 years old. In descending order, the subgroups were: 21–25 years old (53%), over 30 years old (17%), under 20 years old (1.3%), and, lastly, 26–30 years old (14.2%).

Relevance to the university system

According to Jiménez, Herrero, and Nolasco¹⁹, the academic sector requires new alternatives in competencies, marked by continuous evolution. At this stage, the participating HEIs are key actors in driving the permanent change that stems from teaching skills, research, and engagement with the community.

Therefore, this study details participation by country as follows: in Ecuador — Escuela Superior Politécnica de Chimborazo, Universidad Técnica de Manabí, Universidad de Guayaquil, Escuela Superior Politécnica Agropecuaria de Manabí, Escuela Superior Politécnica del Ejército, Instituto Superior Tecnológico Tungurahua, Universidad Estatal de Bolívar, Universidad Católica de Cuenca, Universidad San Gregorio de Portoviejo, Universidad Técnica de Ambato, Instituto Superior Pablo Emilio Macías, and Instituto Superior Técnico Babahoyo; in Argentina — Universidad Siglo XXI; in Colombia — Universidad Sergio Arboleda and Fundación Universitaria San José; in Chile — Universidad de Chile; in Mexico — Universidad Autónoma de Zacatecas and Universidad del Centro del Bajío (UNICEBA); in Paraguay — Universidad Autónoma de Encarnación (UNAE) and Universidad Nacional de Itapúa; in Peru — Universidad César Vallejo and Universidad Mayor de San Simón; and in Venezuela — Universidad Central de Venezuela, Universidad Pedagógica Experimental Libertador, Universidad Nacional Experimental de los Llanos Occidentales Ezequiel Zamora (Unellez), Universidad Nacional Abierta, and Universidad Nacional Experimental Politécnica (UNEXPO).

Of the total number of higher education institutions, 67% are public, while the remaining 33% are private.

Method

This is a cross-sectional descriptive research study, based on a descriptive data source²⁰, with a sample of 326 students from different countries representing various Latin American universities. Students from the following countries participated: Ecuador, Argentina, Colombia, Chile, Mexico, Paraguay, Peru, and Venezuela.

For data collection, a questionnaire consisting of 30 multiple-choice questions was administered. Respondents were previously informed about the purpose of the research, which was carried out virtually through the Google Forms tool, under the supervision of a designated coordinator in each country, ensuring that all participants provided free and informed consent and that the confidentiality of the information was preserved²¹.

Several academic programs were included in the sample, namely: administration, economics, medicine, psychology, veterinary medicine, law, agronomy, basic education, and international relations.

From multiple dimensions, cluster analysis enables the grouping of heterogeneous variables into smaller groups, which internally allows for the observation of homogeneous values based on the similarity of the characteristics of their members. One of the features of the model is the choice of the metric or “distance” used to establish the characteristics of similarity between individuals²². This hierarchical method is defined by considering the objects and the distance between each group. The “nearest neighbor” dendrogram employs a complete connection²³. Ward’s linkage method sequentially groups observations according to their degree of similarity; in addition, the Manhattan or likelihood distance measure assumes the independence of variables²³⁻²⁵.

The records were compiled in Microsoft Excel, and statistical analysis was then performed using Google Colab. In addition, the Voyant-Tools platform was used for word association analysis.

Procedure

First, random samples were collected from participants in different fields of study; then, each participant completed the electronic survey characterizing the university’s ethical environment. Based on the results, analyses were conducted to determine the variables that predominated within the participants’ ethical domain. It is important to manage and organize data analysis by thoroughly specifying the processes to be carried out, including a quality control scheme to verify the correlation between the information collected in the field and the processed data²⁶.

Results

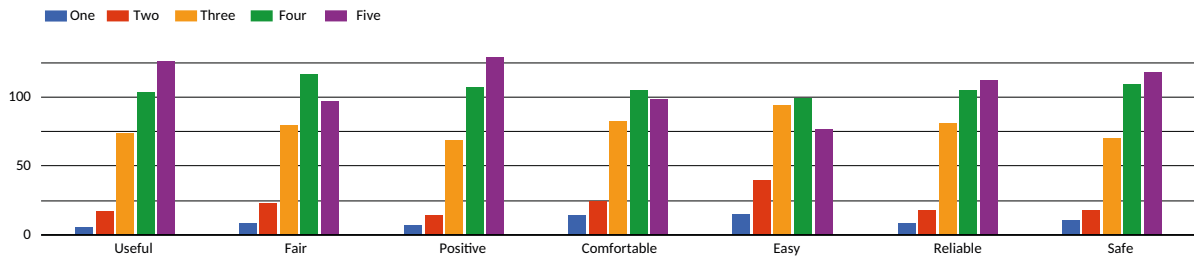
Of the 326 participants in the study, 218 were women and 108 were men, most of them aged 21 to 25 years (52%). With regard to level of study, 24.2% were enrolled in the seventh semester, followed by 13.2% in the third semester, while the lowest percentage was in the second semester, with 2.8%.

As for the characteristics of ethics in the various research projects conducted in HEIs, students expressed positive evaluations, describing them as useful, positive, reliable, and safe, as well as fair, comfortable, and easy, and the classifications associated with different assignments, activities, or tasks within each level of academic instruction. It should be noted, however, that the results obtained do not necessarily reflect the institutional ethical formation of university students as part of the teaching-learning process.

Among the aspects identified, the importance of knowing how to write a research project (96% responded affirmatively) and using proper writing techniques to avoid plagiarism and textual overlap stands out.

Another point of interest is the institutional functioning of the Ethics Committee. Regarding the provisions, activities, and regulations of the Institutional Ethics Committee, 56.7% of students reported being unaware of its functions. Additionally, 78.8% of them believed that responsibility is one of the values associated with the behavior of students, faculty, administrators, and other university actors.

Figure 1. Similarity characteristics of ethical principles in research projects

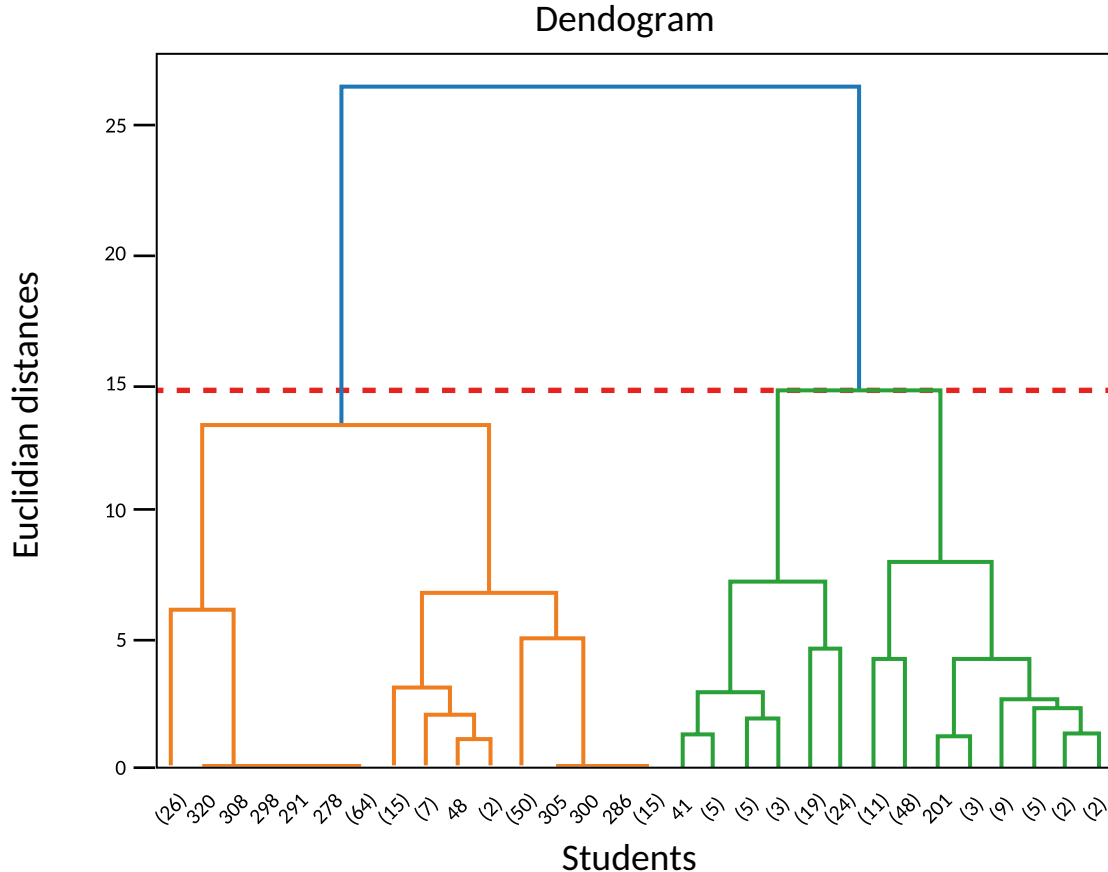


In Figure 2, the solution of two clusters represents the minimum level of heterogeneity. The dendrogram suggests a partition of observations into groups that share greater similarity beginning at point 26 of origin, where two groups are formed.

The first cluster (far left) is composed of sixteen observations (26, 320, 308, 298, 291, 278, 64, 15, 7, 48, 2, 50, 305, 300, 286, 15). The second cluster, immediately to the right, with its first cut near

distance 15, consists of two subgroups on each side, which in turn branch into several subgroups at different Euclidean distances, showing a greater diversity until reaching zero. This cluster reveals more homogeneous similarities than the first, in which fourteen subgroups (41, 5, 5, 3, 19, 24, 11, 48, 201, 3, 9, 5, 2, 2) are observed. If the dendrogram's cut-off point were set higher, there would be fewer final groups, but the level of similarity would be considerably lower.

Figure 2. Dendrogram from the Ward method for the observed variables



Given the results, the graphical analysis of the dendrogram appears to indicate a significant trend of similarity with respect to university values related to responsibility. Based on the base distance close to 26, students from HEIs in different countries, semesters, and social, cultural, and research contexts may have been significantly influenced by the moral and ethical values that shape their surrounding development. However, to deepen the discussion, it is necessary to

consider some conclusions and recommendations based on the research findings.

Finally, the most frequent words currently associated with research among university students were identified, leading to the grouping of the following terms: “trust,” “dignity,” “privacy,” “respect,” “autonomy,” and “obligation” (Figure 3). In fact, with respect to these words shared by all university students, consistent references were found to ethics and values.

Figure 3. Frequent words



Source: Voyant Tools.

From studies related to specific courses such as pedagogy, efforts are directed toward explaining and improving education and academic practices that involve the ethical and axiological transformation of HEIs and the integral contribution of individuals. Teaching tools encourage self-directed learning, ethical discussions, meetings with professionals, and teaching-learning processes using electronic resources.

Regarding corporate social responsibility (CSR), connections are established with business models and with internal, external, social, and commercial management practices, in accordance with the

social and environmental criteria of enterprises, as well as gender equality in corporate policies and in the value chain^{27,28}.

In the teaching of medicine and health-related fields, ethics undergoes a process of transformation and must be continuously reassessed in specialization courses, with the aim of strengthening professional practice and maintaining up-to-date skills, thereby ensuring quality care grounded in moral responsibility^{12,29}. Beyond this, it reinforces leadership, professional identity, and moral values in accordance with deontological principles³⁰⁻³³.

The education of university students contributes to vocational training through a commitment to problem-solving and to ethical and professional performance. In accounting and finance, professional ethics constitutes the foundation of graduates' future labor conduct^{34,35}. These areas ensure that core curriculum subjects are aligned with ethical formation in the chosen field^{32,36}. In sum, ethics is applied in various ways according to the objectives identified for professional training and serves as the foundation for undertaking didactic renewal in higher education institutions^{34,37}, enabling the transmission of knowledge and the dissemination of theoretical perspectives on moral values as a motivating force for future professionals.

It is necessary to take into account conceptions of ethics at different university levels and among the actors involved. Thus, virtue ethics, ethics of care, discourse ethics, Aristotelian ethics, justice, and Kantian ethics form a semantic network of conceptions of relevance. In contrast, inconsistency in performance and attitudes within the classroom, as well as in behaviors inside and outside the classroom, represent the opposite³⁸. In this sense, ethics is understood as a philosophical exercise of reflection on morals; it encompasses values and beliefs grounded in everyday decisions and duties. Ethics seeks to justify our decisions¹⁵.

In continuing education, it is essential to understand the Sustainable Development Goals (SDG) and the common indicators for education—based on enrollment rates, gender parity, and the student-teacher ratio—in order to measure the role of the state in education and its commitments to gratuity, equity, and equality, as well as to assess the quality of learning outcomes³⁹.

Regarding sociodemographic conditions, it is worth noting the findings of a study with nursing students, where 87% of the sample consisted of women³¹. It is important to improve common practices so as to increase ethical, social, environmental, and cultural awareness. Furthermore, the formation of interdisciplinary groups in diverse settings fosters empathy toward actions and attitudes that involve different ways of conceptualizing knowledge and overcoming barriers across disciplines in environments of trust and creativity.

Among the fundamental principles that accounting professionals must follow are integrity, objectivity, professional competence, confidentiality, and professional conduct. Such aspects are emphasized from the earliest levels of study in Cuban higher education institutions¹³. Similar results were reported in a study on training in Ecuador with accounting, auditing, and business administration students, in which friendship, tolerance, solidarity, responsibility, cooperation, and ethical and moral values were identified as the essence of human and interpersonal relations⁴⁰. In addition to engagement and the willingness to learn, dialogue, cooperation, knowledge, and innovation are qualities that faculty members acquire through their sustained involvement in HEIs, thereby strengthening their academic profile⁴¹.

As a didactic strategy used in classrooms in Peru, teachers promote debates on national and international news, case studies, the exploration of topics of interest, film screenings, discussions, project development, and other activities, with the aim of reinforcing values such as equality and respect in ethical formation⁴². Teachers are regarded as reference figures whose role and relationships reflect institutional identity, encompassing both learning outcomes and academic conduct in future professional practice^{43,44}.

In scientific terms, plagiarism is the improper appropriation of intellectual ideas or property, constituting an act of scientific misconduct. The Committee on Publication Ethics (COPE) establishes standards for ethical practices in research. Within the university environment, curricular or extracurricular training on publication ethics provides students with the knowledge to respect the ideas of other authors and to understand the types of conduct to be avoided^{43,44}. In research activities, there is the need to use anti-plagiarism software as a technological tool for self-training in scientific conduct when preparing manuscripts^{45,46}.

Beyond quality education, content sharing among students, teachers, and professionals on various social media platforms must also be considered, as it promotes local and regional development through projects that foster integration and collaboration with society.

Teachers should reflect on and evaluate curricular content with moral strength, ethics, and values that contribute to effective planning. By integrating epistemological attributes fundamental to an ethical stance, teaching achieves its purpose: transmitting knowledge generated on the basis of ethical and moral principles.

In Mexico¹¹, priority protocols addressing gender-based violence, ethical guidelines, and operational mechanisms within a regulatory framework are being implemented as part of the international education agenda for 2030, in line with UNESCO's 2016 proposal.

Final considerations

The results obtained, along with the testimony of university students, demonstrate the practice of ethical and moral values, which strengthen behavior, patterns of conduct, and personality, serving as determining factors in attitudes and in facing everyday situations. It is unquestionable that the construction of ethical values begins within the family core and from an early age. However, the broader social dimension in which

individuals live and interact is also responsible for shaping these values. When discussing ethical values, it is essential to raise awareness about putting them into practice in order to train professionals with strong ethical commitments, since the impact they have on each individual is equally significant.

Values and ethics are multifactorial phenomena; therefore, it is necessary to foster appropriate formation that positively influences moral and ethical aspects—shaped within the family, reinforced by the various activities of HEIs, and constituting the integral foundation of individuals.

The strengthening of values should be incorporated into academic activities through the use of teaching materials that promote socialization and integration, as well as through effective practices for disseminating positive values. Alongside the development of ethical evaluation instruments for university actors, it is also necessary to consider institutional processes that assess ethical performance within the institution. In practice, it is essential to raise awareness among university students and future professionals about the importance of training grounded in values and sound ethical principles.

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Sthefanny Gabriela Analuisa Aroca – PhD – sthefanny.analuisa@esPOCH.edu.ec

 0009-0002-1827-2517

Iván Alberto Analuisa Aroca – PhD – ivan.analuisa@utm.edu.ec

 0000-0002-3798-3122

Ruth Paulina Solórzano Casco – Master – rsolorzano@esPOCH.edu.ec

 0009-0006-3979-9368

Correspondence

Sthefanny Gabriela Analuisa Aroca – Casa #2, 23 de Abril y Av. Eliza Mariño, Barrio El Terminal, ECO20150, Guaranda, Bolívar-Ecuador.

Participation of the authors

Sthefanny Gabriela Analuisa Aroca contributed to the dissemination of the questionnaire, drafting of the manuscript, theoretical framework, final considerations, and approval of the final version. Iván Alberto Analuisa Aroca collaborated in the research, project design, data analysis and interpretation, drafting of the manuscript, methodology, results, and approval of the final version. Ruth Paulina Solórzano Casco participated in the project design, critical review, conclusions, and approval of the final version. All authors take responsibility for the accuracy and integrity of this work.

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