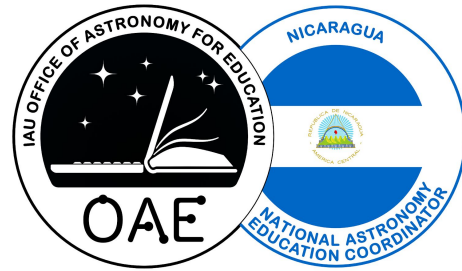


# Astronomy Education in Nicaragua



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This overview is part of the project "Astronomy Education Worldwide" of the International Astronomical Union's Office of Astronomy for Education.

More information: <https://astro4edu.org/worldwide>

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**Structure of education:** Nicaraguan education is structured in three stages: First, most of the children of 4-or 5-years old attend preschool (kindergarten). Second, children attend the primary school with ages between 6 until 11 years old. Third, secondary school with ages between 6 until 11 years old. School year starts each February and ends in November. The quality of schools in the country compared to the rest of the world is very low. In 2018 Nicaragua ranked 126th in the world on the Education Index, which compares the number of years a child has to study with how many years he/she actually studies, in this particular public schools face the greatest challenges.

Schools located in the rural areas of Nicaragua have particularly low performance. Within these rural communities, parents are responsible for paying maintenance and utility bills of the school building. This economic hardship for both parents and children living in these areas is tough. Nicaragua also has one of the highest dropout rates and lowest high school enrollments in all of Latin America. In 2019 only 53% of male and 45% of the female students enrolled in high school, according to statistics from UNICEF, it also performed poorly in worldwide standardized testing that the country stopped participating in global testing several years ago.

Public school education for elementary grades is free of charge and compulsory. However, families are sometimes expected to pay for books, uniforms, school dinners and transportation as well as additional fees. These schools are divided into two sessions, one in the morning and one in the afternoon. Most primary school children attend the first shift and the older students attend the afternoon shift. A normal school day begins at 7am and ends at noon.

Preschool: Many private schools offer classes from preschool through high school.

Primary school: It is used as a 100 point scale system to grade exams, with a range of classifications within this, from fail to excellent, when students graduate from primary school they receive a Diploma of Primary Education). The curriculum focusses mainly on math, science, reading and writing.

Secondary school: Secondary education consists of two parts: 3 years of el ciclo basico (lower secondary school) and 2 years of el ciclo diversificado (upper secondary school). Secondary schools also use the 100-point grading system, where 60 points equals a pass. Students can also choose to enroll in el ciclo diversificado (technical school) where students can take three-year technical courses.

**Education facilities:** Nicaraguan schools have typical classrooms with a number of students among 30 to 50 students. Most schools bring the basic services of electricity, water, toilets and specific sites where students may buy meals, drinks, snacks during their break times.

Private schools have better facilities conditions compared to publics, parents must pay monthly for the school services, this guarantees greater investments to bring material and facilities, IT classroom, as well as better trained teachers in accordance to demands of students, however the number of these schools is very limited in the country compared to public one.

On the other side, public schools depend on the national budget allocated to the Ministry of Education annually, however this budget is very limited to cover all needs of schools. Parents must not pay fees for the education of their kids. Public schools in urban areas have better facilities compared to rural areas, however, all of them have limitations regarding important tools such as IT classrooms, technology equipment, and well-trained teachers.

**Governance and organisation:** Nicaraguan education is run by the Ministry of Education among its basic functions are: propose the educational policy and approve the plans and projects aimed at its implementation; approve the study plans and programs and modalities and monitor their strict compliance; authorize the operation of private schools, and approve their fees, organize and guide the national system of education, training and improvement of the teaching and administrative personnel that serves the educational system and Organize the pedagogical, technical and administrative systems and sub-systems required by national education, except the higher education sub-system.

**Teacher Training:** The Ministry of Education applies the Pedagogical Inter-learning Encounters (EPI), which is held during the mornings of the last Friday of each month and must be attended by teachers and educational authorities of public and private schools. In accordance with the government authorities, these EPIs are conceived as spaces for reflection and recreation of the teachers' experiences, emphasizing classroom practices, rescuing good pedagogical practices and lessons learned, the exchange of experiences and updating of teachers is encouraged. However, some private schools also train their staff by implementing several programs in accordance to their policies and networks at local and international levels.

**Astronomy in the curriculum:** Astronomy is not taught as a proper subject; this means the specialized school courses in astronomy are not included within the school curricula. Instead astronomy content is included as part of the Natural Sciences subject both in primary and secondary school. In primary, students are prepared to study general terms based on the theories detailed in books, in secondary schools the study of astronomy is a bit more complex because physics is included within the curricula along with a more complex study of math, despite of this astronomy knowledge, because most of the teaching of astronomy both – primary and secondary – are based on theories and no practices such as use of software, data studies, observations with telescopes among others.

Additionally, there is lack of good training of astronomy for school teachers whose knowledge is very limited, in order to encourage the teaching of this science with their students and most of the time they are forced to teach several subjects to a single class, this means a huge time for lesson planning, teaching time, evaluations and scoring test. This situation is more visible in public schools.

This is a different panorama of the former teaching of Astronomy back in the 50's and 60's when it did have a strong presence in the educational curricula. Since that time to these days only 2 private schools have invested in the construction of an school observatory, one of them closed due to lack of maintenance and the second one mostly used as an advertisement to enroll new students.

**Astronomy education outside the classroom:** Outside the classroom, the formal teaching of astronomy is null. The methods through which a Nicaraguan student can access astronomy education are: on his own account, as well as television series, books and the Internet. However, access to all these tools is also limited. Examples: Television: In the national free VHF broadcasting channels there are no educational programs that talk about astronomy or its related subjects. National newspapers: there is no permanent scientific dissemination section. Internet: The Internet is the preferred and most used medium by the Nicaraguan population to inform themselves, in this case, young people from primary and secondary school have access to a number of sites, videos, and tools through which they can learn astronomy. Public Astronomy Talks and Observations: Another of the associations' strong astronomy dissemination methods has been the free public talks and observations on astronomy.

NASE: The Universidad Autónoma de Nicaragua, UNAN, hosted a small observatory, managed by the Physics Department, from which several NASE sessions were held to provide basic training to teachers from different public schools.

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