

Statistical training as a Quality factor

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Abstract

In Spain, the National Statistics Institute (Spanish initials: INE) has a department called the Public Administration School of Statistics (Spanish initials: EEAP), whose mission is to provide training in statistical methods, techniques and products for civil servants from all public administration bodies, with the aim of being continuously adapted to the new trends in this field.

The intention is to showcase the positive experience of this arrangement, by which the training needs of the National Statistical System, incorporating public administration bodies from national to local level, can be met.

By means of this training unit, the changing needs and approaches required by the strategy behind national and international statistics can be addressed and put into practice.

The EEAP provides both face to face (in various formats) and online courses. This latter approach means more students can be reached.

This initiative provides a window through which products and processes can be correctly explained to users of statistics.

One of the main objectives is to promote the use of classifications and procedures in the production of official statistics.

Keywords: Continuum Learning, Governmental Institutions and Methodology.

1. Introduction

The Spanish Statistics Institute, known as INE has, among other functions, that of coordinating the Statistics System of this country (Article 26 of the Public Statistical Function Law), including the task of training public service employees, both inside and outside of INE, in official statistics and disciplines related to statistics production

Within the Organisation, there are two main Units which deal with staff training. One of them works solely on internal training within INE, while the other deals exclusively with statistics training. This is the Public Administration School of Statistics, and this body is the subject of this article.

The Public Administration School of Statistics (PASS) was created in 1993, although the first courses weren't given until 1995. It is tasked with the training and the further professional education in the area of statistics of INE employees along with those Public Administration workers, and workers of other groups and social organisations, who may demand such specialised training.

The activity of PASS is two-fold. On one level, PASS is responsible for internal training, but it also has a much wider remit, given that, as the name itself indicates, it must be able to offer statistics training to all Public Administration employees, and particularly to the statistics services of Ministerial Departments, Autonomous Community Bodies and other public entities (National Statistics System).

The activity of PASS is an important contribution to the coordination, coherence and quality of the statistics system, as when course programmes are developed priority is given to courses which deal with the description and analysis of new statistical operations, methodological changes and technological innovations applicable to current production. All this in order to achieve one of the overriding objectives of INE: quality, efficiency and institutional coordination.

From the outside, PASS provides a window on INE, allowing its products to be seen by means of the programming of dissemination and awareness courses, thus making the School a reference point to learn about new developments, excellence and best practice established by the Institute and other Bodies.

The School's training activities include classroom courses and seminars, online courses, technical sessions, educational visits to schools and universities, and other tailored programmes.

It also looks after the programme of collaboration with various Universities which involves internships in the Institute, as well as following up on the progress of recipients of postgraduate grants through INE's training grants plan.

The teaching staff is mainly made up of INE employees responsible for statistics production. This has the clear advantage of offering up-to-date and specialised teaching, especially considering their daily contact with existing problems and the methodology and techniques employed. Civil servants from various administrations and experienced professionals from the field of statistics in general collaborate in the programming of activities. Among these experts there are university lecturers who give – and receive – courses in the School.

As far as students are concerned, PASS's work is mainly focused at national level, and particularly on statistics training for INE staff and the rest of the players within the Statistics System.

PASS certifies attendance at its courses, but as achievement tests are not taken at the end of the courses, certificates of achievement or aptitude are not issued.

All courses organised by PASS include a feedback system to evaluate quality. At the end of each course an open questionnaire is distributed with questions about the degree of satisfaction, whether the initial objectives have been fulfilled, the students' opinion on the contents, methodology and pace of the course; the skill and knowledge of the teaching staff; the equipment and facilities of PASS; the teaching material handed out, punctuality and organisational aspects; and suggestions to improve the course in the future.

Courses organised by PASS are free for students (registration and course material), openly and publicly convened, and the information is made available on INE's web page:

(http://www.ine.es/ss/Satellite?L=es_ES&c=Page&cid=1254735801161&p=1254735801161&pagename=FormacionYEmpleo%2FINELayout).

PASS: Services available

2. Classroom courses

Classroom courses were initially 15 hours long on average, but since 2010, for budget reasons caused by the economic crisis on the one hand, and to make more effective use of time on the

other, the decision was taken to modify this format, reducing the number of hours and increasing the specialisation, applying the name “cursos píldora” (“bitesize” courses).

Classroom courses are now 8 hours long on average, and seminars last 4 hours. Basically, three types of courses are offered: on official statistics production, on statistical specialisation and on statistical computing. The first group deal with statistical operations, new developments, changes in methodology, or aspects relevant to the correct use, application, interpretation and analysis of the data. The second group involves advanced scientific content on methodological aspects and statistical techniques, and the third includes courses on statistics programs in support of production.

2.1. Statistical computing courses.

In 2011 the need to train technical staff in statistical computing, especially in SAS, was detected. To this end, a training plan was established for all affected staff, and in 2016 this plan has been successfully concluded, with reinforcement programmed for any new staff intake in the Institution.

In 2015 a new cycle of training in Excel on tables and dynamic graphs was commenced, as a need was detected for this.

Given the need for computing in the field of statistics, PASS is currently carrying out a specific evaluation of the impact of this training in the workplace.

3. Online courses.

The online course programme began in 2013 so that training could reach those groups who could not attend classroom courses, thanks to the collaboration and financing of the Institute of Fiscal Studies (IFS, or Spanish initials: IEF).

These courses have complemented the loss of training as a consequence of the economic crisis, and today, with the new teaching material now available, longer courses can be given, compensating for this loss.

N° of courses by teaching category.

Year	Classroom-based	Online/IFS
2010	22	
2011	30	
2012	26	
2013	30	9
2014	32	3
2015	29	7

This table shows the number of courses per year in the period 2010-2015, the period analysed by this report. It is worth noting that, despite the economic crisis, the number of courses has been maintained or even increased (more specialised “bitesize” courses)

The table below shows the number of students by year and teaching category, in which an increase in the number of students since the introduction of online courses can be observed, despite the fact that the number of these courses offered has been limited to date.

N° of students by course and teaching category.

Year	Classroom-based	Online/IFS
2010	554	
2011	749	
2012	731	
2013	845	418
2014	757	129
2015	786	282

The following tables indicate the length of the courses by teaching category. The reduction in the number of hours per course after 2012 can be observed.

Average length courses per year.

Year	Average length in hours Classroom-based	Average length in weeks Online
2010	13,45	
2011	14,13	
2012	10,08	
2013	7,33	1,33
2014	7,19	2,33
2015	5,50	2,50

It can be observed that although the average length of classroom based courses has fallen, as we have already pointed out, as a result of offering more specialised courses, the length of the online courses is increasing due to improvements in the teaching material as a consequence of greater experience in this field.

The final table includes a breakdown of the number of students attending classroom courses by provenance. This shows the diversification of students and highlights the training role of PASS for the whole of the National Statistics System.

Distribution of students by provenance and year in classroom based courses

Year	Total students	INE	National Admin.	Autonomous Community	Local Admin.	Others
2010	554	290	85	102	14	63
2011	749	473	111	92	13	60
2012	731	438	162	71	6	54
2013	845	580	173	53	7	32
2014	757	409	164	103	10	71
2015	786	478	155	85	5	63

4. Technical Sessions

In 2010, a new space was created designed to offer statisticians whose work was related to the Official Statistics System a forum for contact and debate on topics of interest in the field of official statistics.

This activity was given the name Technical Sessions, and consists of lectures or presentations of a maximum of one and a half hours followed by complementary debate. The speakers are mainly experts in the National Statistics System, although on occasion the presenter has come from other international bodies.

These sessions are used to present new developments in the field of statistics, both internal and external, and research carried out within the Official Statistics framework.

They take place once every two weeks, and are very well received by all sectors of the Administration.

N° of Technical Sessions per year and n° of attendees

Year	N° sessions	N° attendees
2010	18	955
2011	15	636
2012	14	568
2013	15	731
2014	16	603
2015	19	847

5. Selection courses and information seminars on public selection process exams.

Among the activities carried out by PASS it is worth highlighting the organisation of Selection Courses for the new civil servants in INE. The aim of these courses is to improve the training of the new civil servants and ease the process of integration in the working environment of the Institution and their adaptation to applied statistics in the public sector.

Additionally, with a view to divulging and publicising the selection processes for incorporation to the State Statisticians Corps, PASS holds various informative seminars annually to aid the preparation for the selection process exams to these bodies, at both higher and technical level, once the call to said exams has been published in the Official State Bulletin. The aim of these seminars is to provide an overview of the Programmes for the exams, along with support bibliography to help in the preparation of the various topics. Information about the work carried out by the civil servants of the Bodies of State Statisticians in INE is also provided.

6. University placement programmes

Since 2012 a university placement scheme has been in place with the aim of promoting internships in a public administration or private sector work environment, in order to encourage the employment of future professionals, foster their entrepreneurship, creativity and innovation skills, and respond to a commitment to economic transformation based on the knowledge society.

INE considers that training in statistics is important to prepare future statistics producers and users, so any means of promoting knowledge is beneficial to this Institute. To date, INE has

signed 29 Collaboration Agreements with the universities that have applied, permitting their students to fulfil work placements in INE.

This programme is running both in Central Services and in Provincial Delegations, and is coordinated from PASS.

In 2015, INE participated in the Autonomous Community of Madrid in a programme of work placements at secondary school level, receiving 5 students

7. On demand activities

In addition to PASS's formal programme of courses, other courses are organised on demand, such as taking part in University Open Days, or tailor made courses for Public Bodies, etc.

Through this type of activities and collaboration, PASS encourages the growth of a statistical culture in society, and an awareness of the importance of statistical information and the appropriate interpretation of same for decision making. To this end, specific courses have been organised for secondary school teachers in the Autonomous Community of Madrid on the Use of Statistics in the Classroom, a pilot scheme due to be rolled out nationwide in the near future.

N° of tailor-made activities per year and n° of attendees

Year	N° activities	N° attendees
2010	9	336
2011	12	390
2012	1	16
2013	6	130
2014	10	468
2015	10	509

The tables below indicate other activities especially designed to promote Statistical Culture:

Specific course for the Mass Media		Courses for secondary school students	
Year	Attendees	Year	Attendees
2010	20	2014	52
2011	22	2015	39
2014	20		

8. Educational Visits

This programme is designed to show groups of University or Secondary Education students what INE actually does, within the framework of Dissemination of Statistical Culture. This activity is carried out both at Central Services and in Provincial Delegations.

Educational Visits

Academic year	Nº Visits	Total students	Total teachers
2010-2011	141	3408	16
2011-2012	50	924	71
2012-2013	63	1561	100
2013-2014	134	3550	225
2014-2015	127	2963	242

9. INE Training Grants

The National Statistics Institute has developed a programme of directly awarded grants with a view to promoting statistical research and the development and implementation of statistical processes via post-graduate level training.

The experience acquired over the last few years in this area demonstrates that this awarding of grants provides the National Statistics Institute with access to excellent professionals, who, after succeeding in the pertinent selection process, can become part of the organisation itself.

PASS takes an active role in this programme, carrying out various specific training activities with the recipients of said grants.

10. International training activities

INE employees also benefit from international training through attendance at courses, lectures and seminars organised within the framework of the international statistics system. PASS collaborates in the coordination of these international activities with INE's International Relations Unit.

Moreover, INE has a long tradition of organising training in Latin America. Currently, this training is imparted in two ways:

- Online courses through the CEDDET Foundation (CEDDET, in Spanish initials, stands for Distance Learning Centre for Economic and Technological Development). In 2015, 8 courses were organised with a total of 237 students.
- Classroom learning organised with the collaboration of the Spanish Agency for International Development Cooperation (Spanish initials: AECID).

PASS: Challenges for the future

Training in this subject is a key element in assuring that Spanish Statistics is capable of facing the new challenges posed by society, and capable of training specialists in statistics production according to international strategy (e.g. Vision2020).

To this end, the future challenges to be faced are:

- Maintaining statistics training as an element of Quality, including all new developments in the training programmes as they arise.
- Measuring the impact of training. It is important to monitor the effects of training and evaluate its impact and any possible multiplying effects in the employees and production of the Statistics System, especially in INE.
- Increasing collaboration to promote statistical culture, encouraging the dissemination of, and the correct use of, information, providing training sessions for Secondary School teachers to include statistics in the Classroom and for Mass Media professionals.
- Improving the quality of online training, with greater student-trainer interaction.
- Continuing to collaborate in the European Master in Official Statistics (EMOS), awarded by the Complutense University of Madrid, as part of the Monitoring Committee of the project in Spain, and as provider of work placements for the Master's degree.