

## Professional Accreditation and Continuing Professional Development

Roeland Beerten  
Royal Statistical Society, United Kingdom  
e-mail [r.beerten@rss.org.uk](mailto:r.beerten@rss.org.uk)

### Abstract

The Royal Statistical Society (RSS) has been at the forefront of professional accreditation for statisticians for more than twenty years. Over time the RSS has developed a coherent framework for professional standards through its international examinations and qualifications, which form the basis of our accreditation approach. In recent years an increased focus on continuing professional development (CPD) has meant some changes were introduced in this framework to take into account the importance of ongoing learning for professional statisticians.

This paper provides an overview of the general principles underlying the accreditation process for statisticians, and look at processes, standards and benchmarks used in the UK. It will consider the benefits of accreditation for those working in the field of statistics, especially for statisticians at the beginning of their career. Finally the paper will consider the increasingly important role of CPD in the accreditation process for statisticians, with a specific focus on a number of innovative initiatives in general professional accreditation in the UK.

**Key Words:** Professional accreditation, professional standards, continuing professional development, career development.

### 1. Introduction

The Royal Statistical Society (RSS) is the UK professional body for statisticians, a learned society and a charity to promote the importance of statistics for the public good. The Society was established in 1834 and is one of the oldest statistical societies in the world, with a membership of about 6500 in the UK and internationally.

Following a merger with the Institute of Statisticians (IoS) in 1993, the RSS took on the functions of a professional body to provide support for professional statisticians, and created the professional qualification of Chartered Statistician, based on the existing professional qualifications of the IoS.

At the time of the 20th anniversary of the creation of the Chartered Statistician qualification this paper gives an overview of the overall accreditation framework, and discusses the benefits and requirements to retain accreditation.

## **2. The professional accreditation framework**

### ***2.1. The qualification benchmarks***

As a professional body and a learned Society the RSS has a keen interest in building and maintaining statistical skills in the UK and abroad. To support this aim, the Society has a number of statistical qualifications which can be achieved through the RSS Examinations, which are offered on an annual basis, and are structured at three different levels<sup>1</sup>.

The Ordinary Certificate is the entry level of the Society's professional examinations. Its aim is to provide a sound grounding in the principles and practice of statistics, with emphasis on practical data collection, presentation and interpretation. In terms of level, it is pitched between GCSE and A-level standard in the English school system, but the nature of the syllabus is very different because of the emphasis on practical statistical work. The Ordinary Certificate has a modular structure and consists of two independent modules that may be taken separately or together.

The second level, the Higher Certificate, is the intermediate level of the professional examinations. It is intended both as an end in itself in respect of being a qualification in statistics more advanced than that of the Ordinary Certificate, and as a basis for further work in statistics up to the highest undergraduate level. It contains some work at the equivalent of A-level in the English school system, but most of its material is similar to what would be found in the first year of a typical university course in statistics. It gives a thorough introduction to statistical theory and inference at this level, stressing the importance of practical applications. The full Higher Certificate consists of eight modules.

The Graduate Diploma is the highest level of the RSS professional examinations. It is of a standard equivalent to that of a good UK Honours Degree in Statistics, giving a thorough and wide-ranging treatment of theoretical and applied statistics at final-year undergraduate level. It is widely recognised and respected, nationally and internationally, by employers in the public and private sectors. It is also recognised by many universities for entry to postgraduate study in statistics. The modular structure consists of 5 modules; as with the other levels candidates may enter for modules individually or in any combination. Each module is separately certificated, and candidates who pass in all 5 modules are awarded the Graduate Diploma in Statistics. It is not necessary to pass all 5 modules at the same sitting.

### ***2.2. The RSS professional accreditations***

Building on the highest level of the statistical qualifications described in the previous section, the Graduate Diploma, the RSS has two professional awards: Graduate Statistician and Chartered Statistician.

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<sup>1</sup> A more detailed description of the content of the three qualifications can be found at <http://www.rss.org.uk/exams>

### *2.2.1. Graduate Statistician*

The first level of the RSS professional awards is the Graduate Statistician accreditation. In order to gain this accreditation candidates submit an application which is considered by the Professional Affairs Committee which has the responsibility for conferral of accreditations as set out in the RSS Royal Charter.

The requirements to be eligible for the Graduate Statistician award is to provide evidence for any of the following:

1. A good UK Honours degree (Class I or II) and/or an appropriate Higher Degree in Statistics or a subject containing substantial coverage of statistical theory, methods and practice; or
2. An appropriate overseas degree in Statistics or a subject containing substantial coverage of statistical theory, methods and practice; or
3. The Graduate Diploma of the Royal Statistical Society.

In essence this professional accreditation is a recognition of the educational qualification of the applicant; no further evidence is required. For (1) and (2), the Professional Affairs Committee will assess the contents of the educational qualification against the benchmark of the Graduate Diploma syllabus; the qualifications need to demonstrate the same breadth and depth as the Graduate Diploma.

At the end of 2012 there were 454 registered Graduate Statisticians.

### *2.2.2. Chartered Statistician*

The highest level of the RSS professional awards is the Chartered Statistician (CStat) accreditation. It provides formal recognition of an individual's statistical qualifications and professional training and experience. In order to gain this accreditation candidates again submit an application which is considered by the Professional Affairs Committee.

The general requirement for Chartered Statistician accreditation is an approved degree (or equivalent) and approved professional training and experience for at least five years. The qualification requirement is equal to the Graduate Statistician requirement, and holders of the Graduate Statistician award are supported and encouraged to work towards the chartered professional accreditation (see section 2.2.3. below).

In addition to the qualification requirement however, applicants for Chartered Statistician status have to demonstrate professional development consisting of appropriate refereed professional statistical training and experience. It is acceptable for the training to be partly or wholly experiential, i.e. on-the-job. At least five years of a statistical career will be required to complete the necessary overall professional development. Applications should therefore

normally be based on a five-year (full-time equivalent) history of professional statistical training and experience, normally since the date of the first academic award which would have qualified the applicant for Graduate Statistician status. Applicants must show that sufficient training and experience, in line with the Society's continuing professional development policy, have been acquired.

At the end of 2012 there were 1265 registered Chartered Statisticians.

### *2.2.3. Support and Progression*

As mentioned in the previous section, the Graduate Statistician award satisfies the qualification requirement for the Chartered Statistician accreditation. In order to support holders of the Graduate Statistician award in their development towards chartered status, the RSS provides two support mechanisms: mentoring and mid-term assessments.

In the mentoring scheme, GradStats can request to be linked to a mentor who would be the holder of a CStat award. The mentoring scheme provides the opportunity for career guidance and is therefore of great help to young statisticians at the start of their careers. This is a free service and although in itself not a guarantee for eligibility for the chartered award, it is of great help in developing a well thought-through career path early on in a statistical career.

The second support mechanism the Society offers is the mid-term assessment, in which a Graduate Statistician can request a review of his or her career after about 2 or three years, to see if their career develops in line with expectations for the achievement of the chartered status.

### *2.2.4. Requirements for holders of the professional accreditations*

Chartered Statisticians are required to comply with the Society's code of conduct. They are also expected to adhere to the Society's continuing professional development policy. At the end of 2011 the Professional Affairs Committee, which manages the professional awards, decided to introduce revalidation for the award (see section 3.2. below).

Both professional awards are available only to members of the RSS so membership is a condition of the award. In addition, there is a professional membership fee payable over and above the regular RSS membership fee.

### *2.4. Benefits of professional accreditation*

The RSS chartered accreditation for professional members brings value both to members of the profession and to those who benefit from the work of professional statisticians.

Viewed from the profession, accreditation testifies that there is a body of knowledge known as statistics, that accredited practitioners of statistics must be well versed in that knowledge at an advanced level, and must have applied it competently and ethically through practice for several years. And as rapidly as the theory and practice of statistics evolves, so must professional statisticians continually stay abreast of new developments in their areas of expertise.

The reason why this is important is that many issues that have an impact on our daily lives, such as our health and safety, our work, our standard of living, and the policies of our governments are crucially influenced by statistics - the collection, analysis, presentation and interpretation of quantitative data in the presence of uncertainty.

Accredited statisticians have been recognized by their peers as combining education, experience, competence, and commitment to ethics at a level that labels them as professionals. Accreditation therefore provides a measure of assurance to employers, contractors and collaborators of statisticians, and a mark of accomplishment to society at large.

### **3. The role of Continuing Professional Development**

#### ***3.1. Continuing Professional Development: why it is important***

As set out in section 2.2.4. one requirement for the holders of a professional accreditation is adherence to the Continuing Professional Development (CPD) policy of the RSS<sup>2</sup>.

An active interest in CPD is now common practice for all professionals and the RSS believes CPD activities in statistics are for the entire RSS membership to engage with. Professionally accredited fellows are formally obliged to do so, under the terms of the code of conduct.

The scope of activities that count as CPD is wide and cover 5 categories: Work based learning, Professional activity, Formal/educational, Self-directed learning and "Other". In order to facilitate the recording of CPD activities the RSS has an online CPD recording system which is freely available to members.

#### ***3.2. Revalidation of the Chartered Statistician award***

After a period of consideration, consultation and discussion, the RSS decided to introduce revalidation for the Chartered Statistician (CStat) award on a five-yearly basis from 2014 onwards. Before this decision, the Chartered Statistician award was basically 'for life', and only conditional on the annual payment of the extra professional membership fee.

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<sup>2</sup> [http://www.rss.org.uk/uploadedfiles/userfiles/files/CPD\\_-\\_policy\\_2009\\_update\\_Feb2012\(2\).pdf](http://www.rss.org.uk/uploadedfiles/userfiles/files/CPD_-_policy_2009_update_Feb2012(2).pdf)

Since the introduction of the Chartered Statistician award in 1993, adherence to the Society's code of conduct has been mandatory for CStat holders. One aspect of the code is the requirement to '...seek to upgrade their professional knowledge and skill ...' which was formalized in the Society's continuing professional development (CPD) policy which was implemented in January 2004 and revised in October 2009.

The revalidation process will therefore not place any additional requirements on Chartered Statisticians apart from the need to provide confirmation and/or evidence of being professionally active and complying with the Society's code of conduct and CPD policy. The introduction of revalidation will enable the RSS to fulfill its obligations under the Charter and bye-laws to maintain the CStat award as a professional award of high standing.

In order to support professional members in developing a reflective approach to CPD the RSS is providing a number of examples, based on (anonymised) real CPD recording profiles, for a number of different types of professional statisticians<sup>3</sup>. These profiles provide a guide to the standard of recording required to successfully pass the re-accreditation process.

It is clear, from discussions with other organizations, that the revalidation of professional awards based on maintenance and development of relevant knowledge and skills through professional development activities, is being introduced in a wide range of learned societies and professional bodies.

The principal reason for the introduction of revalidation at the RSS is therefore to reflect current best practice for professional awards. This will increase the value of the award for the Chartered Statisticians themselves and also for the beneficiaries of the statistical services provided by Chartered Statisticians: clients, employers and society at large.

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<sup>3</sup> See <http://www.rss.org.uk/cpdprofiles>