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New developments in optometric training in the United Kingdom

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ABSTRACT

With optometrists well placed to address the challenges and opportunities faced by contemporary eye care systems, it is ever more important to understand the genesis and development of the profession, so that optometrists can continue to build on this legacy for patient benefit. While the optometry profession of optometry in the United Kingdom can arguably trace its foundation back to 1629 and the Royal Charter gifted by Charles I to the Worshipful Company of Spectacle Makers to establish the 60th Livery Company of the City of London, the genesis of optometry as an independent profession (initially known as 'ophthalmic optics') can perhaps best be attributed to the formation of the British Optical Association in 1895. This paper reviews the current legal framework and recent changes that dictates how the optometry profession are trained and practice, along with clinical and educational innovations that are shaping the future role of the profession.

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History

Professional bodies

Whilst the profession of optometry in the United Kingdom can arguably trace its foundation back to 1629 and the Royal Charter gifted by Charles I to the Worshipful Company of Spectacle Makers to establish the 60th Livery Company of the City of London, the genesis of optometry as an independent profession (of ophthalmic optics as it was known then) can perhaps be best measured by the formation of the British Optical Association in 1895.

Fast forward over 80 years, in early 1979, after a lengthy period of negotiation and alignment of their respective examination formats, the British Optical Association, the Worshipful Company of Spectacle Makers and the Scottish Association of Opticians agreed to form a single institution named the British College of Ophthalmic Opticians, which came into existence on 1 March 1980. Under the foundation of the College, The British Optical Association and Scottish Association of Opticians were succeeded, and the Worshipful Company of Spectacle Makers passed to The College of Optometrists its role in conducting professional examinations for optometrists. In 1995, The College was granted a Royal Charter of Incorporation with the title The College of Optometrists. Its motto, *aequis oculis videre*, translates as '*to see with equal eyes*'.

Legal framework

Optometrists and Dispensing Opticians have sought legislation to establish and regulate the profession since the early 1900s. Early attempts failed due to the lack of consistency in training, and it was not until 1952 that a committee, set up following the introduction of the National Health Services Act of 1946, published a unanimous report recommending legislation should be passed setting up the General Optical Council (GOC) with a remit including organising inspections of optical examining bodies and of the optical training institutions. It took until 1958 for the Opticians Act to receive Royal Assent with the formation of the GOC thereafter. The Opticians Act was revised in 1989 placing much of the legislation relating the practice of optometry and dispensing optics in a single statute.[1]

Although the current legislature of the GOC has remained largely unchanged for over 30 years, in February 2024, the first stage of the programme of regulatory reform of the Department for Health and Social Care was approved by the House of Lords in the UK,[2] enabling the General Medical Council to regulate anaesthesia associates and physician associates from December 2024. These changes triggered subsequent work to reform legislative frameworks relating to the Nursing and Midwifery Council, and the Health and Care Professions Council.[3]

It therefore follows that these Section 60 orders will most likely precipitate future regulatory reform of other healthcare professions, including optometrists and dispensing opticians. In preparation for these putative changes, in 2022, the GOC issued a Call for Evidence[4] to gather information and views across the UK optical sector on issues unique to optical services, with a range of areas identified as opportunities for reform.

University courses

Whilst the advent of the Opticians Act and the formation of the GOC were catalysts for the growing recognition of the optometry profession in the UK, the metamorphosis of Colleges of Advanced Technology into universities in the 1960s and the inaugural degree courses exclusively in ophthalmic optics (now optometry) initially at the five higher education institutions of Aston, Bradford, Cardiff, City St George's and Manchester (with Glasgow Caledonian following in 1970), was equally as significant a milestone.[5]

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Previously, the Worshipful Company of Spectacle Makers oversaw an Honours distinction in 1928, which was superseded by a Higher Diploma in 1958, while the British Optical Association ran a Diploma in Orthoptics from 1944, a Higher Diploma from 1956, and a Diploma in Contact Lens Practice from 1961.[6] In these early years, Part 1 of the Diploma was set separately by the British Optical Association, Scottish Association of Opticians and the Worshipful Company of Spectacle Makers; however, these were harmonised and unified. First, in 1966, the British Optical Association and Worshipful Company of Spectacle Makers joined forces. This was swiftly followed by the incorporation of the assessments delivered by the Scottish Association of Opticians in 1971. Soon thereafter, the organisations also created a joint Part II examination. It was ultimately this harmonisation of examination roles between the three organisations that catalysed the formation of The College of Optometrists in 1980.

Optometry education within London began in 1896 with the incorporation of optometry teaching from Finsbury Technical College, which had started 10 years earlier. Optometry at the Northampton Institute developed further in 1898 when the Worshipful Company of Spectacle Makers offered to pay the salary of an instructor in visual optics, but it was several years later in 1903 with the foundation of the Technical Optics department that the Northampton Institute (itself founded nine years earlier) developed a significant presence in the area.

In 1927, the Institute built on this foundation with the establishment of the now Department of Optometry and Visual Sciences, subsequently becoming one of the first establishments in the world to educate optometrists – something which remains to this day as City St George's, University of London is still the only institution in London to offer a BSc/MOptom in Optometry.[7]

The course at the Northampton Institute was followed in 1920 by courses at Manchester College of Technology and at Bradford Technical College (now the University of Bradford). A course at Birmingham Technical School (now Aston University) followed in 1926 and Cardiff Technical College (now Cardiff University) in 1935. In 1975 the University of Wales Institute of Science and Technology changed the departmental name to 'Department of Optometry' the first official use of the term in the UK.[8]

During the years 2000 to 2017, there has been an approximately 75% increase in the number of registered optometrists (from 8,646 to 15,151), compared to a population growth of about 12% over the same period. This (unrestricted) expansion of registrants from existing universities was accompanied by an increase in the number of university undergraduate optometry courses from eight (the long established seven of Aston University, the University of Bradford, Cardiff University, City St George's – University of London, Glasgow Caledonian University and the University of Manchester (formerly University of Manchester, Institute of Science and Technology), with the addition of Anglia Ruskin University in 1995) to 12 (and 15 higher education institutions in 2024).

This expansion has presented the challenges of large group teaching, the need for more appropriately qualified academic posts to be filled and an increasing demand for clinical placements for the Scheme for Registration of the College of Optometrists (period of around 15 months of supervised practice and professional examinations), now being replaced by the four (five in Scotland) year integrated Masters-level optometry degree. There are also concerns about the potential lowering of academic standards to fill places and the possible impact on future graduate salaries making it a less attractive profession for the most able students.[9]

Quality assurance

The GOC is responsible for setting UK optometry education and training standards. The Professional Standards Association protects the public by overseeing the regulation and registration of healthcare professionals (so, for optometry, it is effectively the regulator of the GOC). In 2011, the GOC published a 'handbook' including a list of core competencies that all students must evidence during their 3 year (4 years in Scotland) undergraduate degree. These competencies were generally accepted as appropriate to the level of skill required.[10]

In 2016 the GOC launched their Education Strategic Review. One of the outputs of the Education Strategic Review was a move to an outcomes focussed approach, with all supervised clinical experience embedded within a 4 year (5 year in Scotland) Masters level degree. Hence, the traditional core competencies were replaced with outcomes for registration. These outcomes were drafted by the GOC with input from an expert advisory group. Each outcome was also assigned a level on Miller's pyramid.[11] A review of the draft outcomes using a modified Delphi method, suggest a high level of consensus that almost all of the draft GOC learning outcomes for optometry are considered essential.

Compared to the World Council of Optometry competency framework[12] the current and past curriculum covers all of the elements of: (1) 'Refractive error: assessment and management'; (2) 'Visual function assessment and management'; (3) 'Ocular health and ocular disease assessment and management'; (4) 'Public health'; and (5) 'Professional practice'. For section (3), all elements of the World Council of Optometry competency framework are included in the new GOC outcomes for registration except element 3.5 ('Prescribed pharmacological and other regimens to treat ocular disease and injury') where students must 'use common ophthalmic drugs safely to facilitate optometric examination and the diagnosis/treatment of ocular disease'. However, this does not include prescription only medicines, where only certain drugs can be used in clinical practice (such as anaesthetics and dilating agents) and they can only be used in an emergency. The GOC also approve additional supply, supplemental prescribing and independent prescribing qualifications, but these are usually completed post-registration as an optometrist.[13] Currently it is not clear whether some universities will include the qualification within the undergraduate curriculum, other than those in Scotland where it will be a service requirement of the national government.

The new standards are framed around[14]: (1) Patient care; (2) Communication; (3) Clinical practice; (4) Ethics and standards; (5) Risk; (6) Leadership and management; and (7) Lifelong learning. The need to redesign programmes of study and the move to an outcomes focussed approach has afforded course providers the opportunity to be innovative with course design. This could include greater use of simulation and artificial intelligence, as well as the greater involvement of real patients.[15] Alternative approaches could also

include 'entrustable professional activities', which are being potentially developed by the University of Manchester.[16]

Providers of GOC approved optical qualifications are required to submit annual monitoring reports to the GOC detailing key changes, events and risks associated with their programmes as well as data linked to admissions, student progression and achievement, and equality, diversity and inclusion. Analysis of the subsequent sector level reports of the GOC from 2017–18 onwards (Table 1) indicates buoyancy in UK optometry undergraduate education. Since 2018–19, there has been overall growth of approximately 22% in both the number of optometry students nationwide, and the number of students in stage 1 of optometry qualifications, with all providers operating near to, or slightly above, their GOC caps on student numbers.[17]

Despite this growth, there remains significant competition for places on optometry programmes, with the mean proportion of applicants admitted nationwide being between 20.1% and 22.9% of those applying from 2017–18 to 2021–22. Where providers have reported accepting high proportions of applicants, this has been attributed to small programmes and/or new providers having a short window for recruitment following programme approval. The size of individual Optometry cohorts varies substantially, e.g. in 2021–22, Year 1 cohorts ranged from 8 to 177 students.[18]

Overall, providers are maintaining high academic criteria for offering places on their programmes, with the mean UCAS points offer for all years since 2018–19 being approximately equivalent to AAB at A-level, down slightly from 2017–18 when it was approximately equivalent to AAA. It is worth noting that the actual grades achieved by entrants will frequently be slightly lower than their offers, although students are performing well following admission, with 84.5–96.4% of first years progressing to their next stage of study each year and over 95% of final awards being at the level required to progress towards registring as an optometrist, with a lower second class level or better.

The dip in first year progression since 2019–20 may be attributed to a range of factors including withdrawal for non-academic reasons, for example, due to growing mental health problems amongst UK students,[19] and factors linked to the pandemic such as returning to conventional assessments or the impact of teacher-assessed A-level grades.[20]

In September 2023, eight providers commenced delivery of their adapted Masters level optometry programmes to meet the new education and training requirements of the GOC, published in spring 2021,[21] with the majority of the remainder starting in 2024–25. Most providers have opted to collaborate with the College of Optometrists to facilitate 44 weeks of the 48 required weeks of patient-facing clinical experience (Clinical Learning in Practice, CLiP) required by the education and training requirements, and assess a range of Outcomes for Registration.[22] Students will use the new Clinical Learning in Practice portal of the College to apply for College-facilitated placements, with the first long Clinical Learning in Practice placements starting during or at the end of the 2025–26 academic year.

The new placements will have some similarities with the existing Scheme for Registration, such as students working under supervision in a clinical setting, College assessors visiting and assessing students both remotely and in-person, and students being required to apply for and secure their placements (for which the students are paid by the practice, although the amount(s) is not yet known). The 48 weeks of patient-facing clinical experience is expected to be integrated throughout the course, so education providers can choose when it will take place and the duration of the placement blocks.

There will be a number of years of overlap between the new Clinical Learning in Practice placements and the pre-existing Scheme for Registration, which is expected to run until at least 2030 as students on legacy BSc programmes complete their studies.[22]

Cross-university collaboration

The British Universities Committee on Optometry was renamed the Optometry Schools Council in 2018. Its aim is to represent the collective views of UK Optometry Schools. https://www.opticianonline.net/content/features/the-optometry-schools-council/In conjunction with Optometry Schools Council three sub speciality groups were also formed: Low Vision Educators, Clinical (representing patient facing clinical activity in an undergraduate setting), and Technical.

The British & Irish University and College Contact Lens Educators (formerly the British Universities Committee of Contact Lens Educators, using the same acronym BUCCLE) was formed in 1980 to advance contact lens education by the promotion of collaboration and dissemination of knowledge and information among those involved in the academic teaching of this subject in the United Kingdom and The Republic of Ireland. https://www.bcla.org.uk/Public/Public/About/BUCLLE.aspx. In more recent years the British & Irish University and College Contact Lens Educators has undertaken a series of education informing reviews (history and

Table 1. Summary data pertaining to optometry qualifications, from GOC annual monitoring sector reports 2017–18 onwards.

Reporting period	Mean proportion of applicants admitted (range)	Mean UCAS points offer (range)	Mean first year progression (range)	Degree – 2:2 or better (range)	Number of optometry students in stage 1 in UK	Number of optometry students in UK*
2017–18	20.1% (4.1–64.6%)	146.1 (110.0–196.0)	89.2% (65.0–100.0%)	96.9% (85.7–100.0%)	905	#
2018–19	20.1% (9.8–64.6%)	135.6 (116.5–162.0)	92.3% (77.0–100.0%)	95.6% (83.5–100.0%)	885	2641
2019–20	22.9% (9.8–77.8%)	134.5 (112.3–147.0)	96.4% (87.6–100.0%)	98.1% (85.5–100.0%)	996	2826
2020–21	21.3% (10.0–53.6%)	136.3 (129.3–147.0)	88.5% (64.3–100.0%)	96.8% (89.0–100.0%)	1089	3154
2021–22	21.5% (11.8–69.6%)	134.0 (118.6–147.0)	84.5% (69.0–95.5%)	95.8% (83.0–100.0%)	1169	3270
2022–23	#	#	#	#	1111	3233

# indicates sector data not (or, not yet) available at the time of writing.
*excludes those on the Scheme for Registration of the College of Optometrists

symptom taking, anterior eye health recording)[23,24] and student involving research to inform clinical education.[25–27]

The British Contact Lens Association is the longest established contact lens society and has education as a key part of its remit. This goes beyond the UK, running both national and international conferences located in the UK and Asia and also evidence based academic reports to inform education and practice.[28–38]

Innovations

A scoping systematic review on the extent, nature and quality of evidence underlying eyecare practitioner education identified 255 relevant studies in 2017, of which 81 were a description of innovations and 14 were randomised controlled trials, all involving medical students or post-graduate medical trainees rather than optometrists.[39]

Traditional core modules have been energised such as a first-year functional anatomy course at the University of Manchester; interactive sessions lasting 20 minutes each were introduced to reinforce knowledge during the two-hour lecture sessions; this took the form of playing games such as anatomy bingo and solving anatomical anagrams. In addition, five e-learning modules were also introduced for students to complete in their own time, positively increasing examination results.[40] However, a New Zealand study revealed that despite student preference for using an interactive website (compared to a static version) for teaching ocular anatomy and physiology with quizzes and self-assessment activities, the approach had no impact on exam success.[41] Other traditional core topics such as optics may now not be central to learning in the new MOptom programme due to the increased focus on patient centred care.[42]

It has been argued Optometrists are well placed to deliver smoking cessation interventions to otherwise healthy smokers due to its well-established risk to a number of eye health conditions including age-related macular degeneration, cataracts and thyroid eye disease. However, despite smoking cessation interventions being demonstrated to be highly cost-effective when delivered by a range of healthcare professionals, a study of university curricula and the professional bodies handbook concluded that there are substantial gaps in the current curricula of UK optometry training, particularly regarding practical skills for supporting smoking cessation.[43] In addition to smoking cessation other preventative eye care and healthy living initiatives could be included in an optometric examination including blood pressure,[44] discussions relating to weight, diet and alcohol, mental wellbeing,[45] ultraviolet radiation protection and risk of falls.[46] A key issue for optometry service in UK (and worldwide) is the need for optometric involvement at a higher level of community eye care to relieve overstretched hospital services and to better direct hospital referrals.

A review concluded that patients are suffering preventable harm due to delays in accessing health service, particularly those with chronic conditions, leading to permanently reduced vision.[47] This finding is a call for community optometry to play a greater role in the health of the nation with appropriately commissioned and funded patient pathways. The impact of the new GOC curriculum to underpin this aspiration will take a few years to become evident.

While in countries where optometry is a relatively new profession compared to a large and established profession of ophthalmology, there is often conflict over overlapping scopes of practice. In the United Kingdom, past tensions have largely transformed to facilitate cooperation for patient benefit.[48]

In terms of educational innovations, a study at City St George's University demonstrated that unannounced standardised (intensively trained) patients provided more comments and comments of higher quality/depth on the communication skills on an eye examination delivered by final year optometry students compared to clinical visiting tutors.[49] However, the cost of such an approach is high and trained patients cannot replace the tutor as they are not qualified in other aspects of the eye examination, so they are not generally used in current UK optometry education beyond station examinations. However, one current UK provider (Hertfordshire) uses surrogate patients for all patient facing activity as part of the programme; this allows the programme team to exert some control over the breadth of experience each student receives. Standardised patients have also been used to show discrepancies in clinical record keeping by qualified optometrists in the UK; it was found that 15–25% of the criterion reported by the standardised patient were not documented on the record and 3–4% of the information recorded on the record card was not mentioned by the patient,[50] highlighting a key area for enhanced education.

At least at one UK optometry teaching university, the majority of optometry students have balanced learning styles (so there was no need to adjust teaching towards a particular style) and academic performance was not influenced by gender, but enrolment status (international students with a pre-enrolling undergraduate degree outperforming all but 'home' students in a similar situation) did have an effect.[51]

Postgraduate training

Management of eye conditions by UK optometrists, particularly blepharitis and dry eye, are common by recommending over the counter therapeutics.[52] As the optometry qualifying degree is at undergraduate level in the UK, areas of enhanced practice such as in glaucoma, medical retina and independent prescribing are currently postgraduate courses run by universities. Independent prescribing is a General Optical Council accredited course whereas the other certificate/diplomas are endorsed by the College of Optometrists against their curriculum.

A review commissioned by the GOC in 2021 concluded that there was limited impact of the current prescribing registration scheme within enhanced services in community and acute settings and significant barriers were evident[53]; this was accompanied an by updated requirement for a single qualification provider (i.e. not a combination of a university course followed by a College of Optometrist overseen placement and common final assessment), removing the need to have been practicing for two-years before undertaking the qualification and allowing independent prescribing optometrists to supervise the approximately 90 hours of learning and experience in practice.[54]

Higher Qualifications of the The College of Optometrists are sometimes used as benchmarks for delivering specialist services. For example, in Wales practitioners wanting to offer funded low vision services 'WGOS3' must achieve the

Professional Certificate in Low Vision of the College of Optometrists.

Interest by optometrists in managing stable primary open angle glaucoma cases to ease the burden on the National Health Service has been found to be high, although barriers including appropriate remuneration and training were identified.[55] Core undergraduate practical competencies relating to glaucoma were found to be insufficient in 9–23% of practicing optometrists applying to take part in a glaucoma referral filtering and patient monitoring pathway and this was not related to the length of time since qualification.[56] While there was shown to be an increased knowledge of key optic disc information following a didactic 3-day MSc module in glaucoma compared to a control cohort, concerningly this did not translate to improved diagnosis and clinical decision making in an examination setting.[57]

Continuing professional development of optometrists is a requirement of remaining registered as an optometrist in the UK. A case-based peer discussion is mandated as part of each three-year requirement cycle to address the risk posed by professional isolation. Case-based peer discussions were reported by registrants as an acceptable method of learning, with many preferring it to distance-learning; they have been shown to improve self-confidence across all key learning areas and result in self-reported implementation of changes to practice on three-quarters of attendees.[58] However, continuing professional development seemed to make no difference to the quality of glaucoma referrals, which decreased in number, but also in quality, with time since qualification.[59]

Conclusion

The optometry profession in the UK is well established and changes in the undergraduate programme structure allow an opportunity to revise the education and aspiration of optometry graduates to meet the growing demand for eyecare services in the National Health Service to support the identification and management of eye disease.

Disclosure statement

JM and LND are trustees of the College of Optometrists. LD is a member of The Court of The Worshipful Company of Spectacle Makers. All the authors are employed by UK higher education institutes.

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