Perceptions and experiences of employers and mentors of graduate optometrists' practice readiness in South Africa

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Background. Optometry graduates are a key source of new recruits for private practice employers, the largest employer of South African (SA) optometry graduates. Universities should ensure that graduates are employable to compete in the labour market and to practise.
Objective. To gain an understanding of the practice readiness of optometry graduates who qualified from SA institutions between 2016 and 2020, from the perspective of private practice employers and mentors (EMs).
Methods. Using non-probability convenience sampling, private optometry EMs of recent graduates were invited to complete an online questionnaire designed around the core competencies for health professionals in SA. Quantitative data retrieved from a five-point Likert scale were analysed employing SPSS software, using the one-sample *t*-test, factor analysis and Cronbach's alpha**.**
Results. EMs (*N*=28) felt that graduates showed satisfactory competence in theoretical knowledge, communication, collaboration and professional skills, but weaknesses in aspects of clinical skills, leadership and management skills, and health-advocacy skills. The specific areas of weaknesses identified were dispensing skills, leadership, handling of criticism, handling of stress, implementing processes to improve services, industry awareness and practice management. All questions, except two questions for scholarly and professional skills, had an acceptable level of reliability.
Conclusion. Practice readiness was viewed favourably by EMs for optometry graduates, but the specific weaknesses identified in the curriculum include stakeholder involvement from private employers. Increasing the diversity of clinical hours, including rotations in private practices, as well as facilitating and promoting work-based learning may strengthen practice readiness.

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Optometry graduates are expected to have a level of technical and discipline-related competencies upon graduation. However, employers require graduates to demonstrate a broader range of soft skills and attributes, including team-working, communication, leadership, critical thinking, problem-solving and managerial abilities.[1] Hard skills are occupation specific and well defined, whereas soft skills are transferable between occupations. In addition to developing discipline-based knowledge, there is a need to develop soft skills at universities.[2]

Evidence from non-healthcare fields identifies the attributes and characteristics that define employability skills. Few studies have focused on employability skills or practice readiness within the health sector. The Health Professions Council of South Africa (HPCSA) adopted the CanMEDS Physicians Competency Framework to formulate seven core competencies for undergraduate students in clinically associated, dentistry and medical teaching and learning programmes in South Africa (SA) in 2014. Therefore, to assess the practice readiness of optometry graduates, these seven core competencies, including being a healthcare practitioner, communicator, collaborator, leader and manager, health advocate, scholar and professional, were used.[3] Whether graduate optometrists meet these competencies has not been evaluated.

Optometry sectors (private v. public) have different contexts and job demands; however, these revolve around the central function of providing quality eye care.[2] This study focused on optometry in the private sector, as the majority of SA optometry graduates are employed by private practitioners.[2] Engaging with private practice employers and mentors (EMs) helps to align academic programmes with the employers' needs so that graduates may secure employment, while ensuring better patient health outcomes.[4]

To date, no research has been conducted to examine the views of EMs who guide and play an oversight role in the graduate optometrist's transition from university to the real world. The aim of the study was to investigate the perceptions and experiences of private EMs of recent optometry graduates regarding their practice readiness, to help SA universities better understand the real-world concerns of EMs.

Methods

The study was descriptive, cross-sectional in design. It was conducted using a structured closed-ended online questionnaire, guided by the research question:

'Are graduate optometrists who completed their training at South African institutions between 2016 and 2020 considered practice ready by employers and mentors?'

Using non-probability convenience sampling, SA private practice EMs who had played an oversight role in the work of a graduate optometrist during the 5 years preceding the study (2016 - 2020) were invited. A mentor was considered an experienced and trusted advisor. Data were collected from EMs employing graduates from various universities at a point in time. The graduate optometrists should have graduated from one of the four universities in SA that offer a Bachelor's degree in optometry, to provide a representative cross-section.

Ethical approval

Ethical clearance was obtained from the Humanities and Social Science Research and Ethics Committee of the University of KwaZulu-Natal, Durban (ref. no. HSSREC/00001635/2020) before commencement of the study. A hyperlink for the questionnaire was sent via email to private practice optometrists in SA, posted through professional network platforms. Informed consent was obtained from EMs by accepting the declaration on the first page of the online questionnaire.

Data collection

Quantitative data were obtained by asking participants to answer 51 questions using a five-point Likert scale (strongly disagree, disagree, neutral, agree, and strongly agree). Participants also provided personal concerns regarding their perceptions of graduate practice readiness. The questionnaire was first piloted on 5 EMs to ensure it met the study objectives. The questionnaire was based on the abovementioned exit-level competencies as described by the HPCSA.[3] Principal component factor analysis was used for each of the seven categories to measure validity. All questions, except questions 44 and 46 (Cronbach's alpha 0.5) for scholarly skills, and questions 47 and 50 (Cronbach's alpha 0.6) for professional skills, had an acceptable level of reliability.

Data analysis

Quantitative data were analysed using SPSS software, version 27 (IBM Corp., USA). A one-sample *t*-test was used to determine whether the sample mean (%) per question was statistically different, and all *p*-values reported were tested at α=0.05 level.

Results and discussion

Twenty-eight EMs responded to the survey. Table 1 presents results for each of the seven categories surveyed in the study questionnaire. Only statistically significant observations ($p<0.05$) from a one-sample *t*-test are reported. Table 2 indicates individual concerns of EMs relating to the practice readiness of optometry graduates in SA. Table 3 shows the principal component factor analysis for each category of the 51-item questionnaire.

Clinical skills

Strengths identified from the survey of clinical skills included the graduates' ability to identify and respond appropriately to ethical issues arising during patient care (53.6% agreed; $p<0.001$), to perform an effective three-way handover (53.6% agreed; $p<0.001$) and to adapt to new techniques and instrumentation (57.1% agreed; $p=0.001$).

However, EMs felt that graduates did not have adequate dispensing knowledge (39.3% disagreed; $p=0.103$), further supported in the open-ended comment section by 5 participants. This result is in agreement with that of Oduntan *et al*.,[5] who found that 23.8% of graduates also thought they were least prepared for dispensing.

While the majority of participants reported that graduates had satisfactory clinical knowledge (39.3%; $p=0.024$), a possible skills gap was raised. Four participants specifically commented that, although graduates were well educated in the theoretical aspects of optometry, they needed a more holistic approach to eye care. Linking theory to practice requires clinical exposure and adopting case-based learning approaches.[2] EMs suggested that graduates would benefit from more real-world experience during training. Work-based learning is an excellent strategy, providing students with experience to apply academic and technical skills in a professional setting. SA universities offer little or no private sector clinical rotations, which may account for this concern of EMs.

Communication skills

Most participants agreed that graduates have good, clear and empathic communication skills (64.3% agreed; $p<0.001$). While many EMs agreed that graduates are confident and appear comfortable interacting with patients (39.3% agreed; $p=0.024$), this percentage is low and possibly indicates a weakness that requires addressing. Communication skills is an important soft skill across the healthcare sector. Effective communication improves treatment adherence and overall patient satisfaction.[6] The use of peer role-playing scenarios and role-playing sessions with simulated patients, case studies, video recordings of optometry patient communication, structured feedback after encounters with patients and observing experienced optometrists in practice may be helpful teaching methods.[6]

Collaboration skills

The majority of EMs agreed that graduates were able to collaborate with their colleagues and patients, displayed competence in team-meeting participation and respecting team ethics (64.3% agreed; $p<0.001$), and establishing trust and rapport with colleagues and supervisors (53.6% agreed; $p<0.001$). However, participants had less confidence with regard to questions surrounding conflict management (35.7% agreed; $p=0.037$). Some participants believed graduates were unable to resolve conflicts with colleagues and patients appropriately. Other health-sector studies identified gaps in conflict-management skills among graduates.[7] Context-specific conflict management in the curriculum might be a gap in university training.

Leadership and management skills, and graduate health-advocate skills

The lack of consensus among participants in terms of leadership and management skills, suggests variability among graduates; therefore, more data are required. While graduates are reportedly able to manage new situations and adapt (60.7% agreed; $p<0.001$), they are perceived to be less able to handle criticism (42.9% neutral; $p<0.001$) and stressful situations (42.9% neutral; $p<0.001$), deliver effective staff training (64.3% neutral; $p<0.001$) and show a willingness to lead and take charge (39.3% neutral; $p=0.067$).

The transition from university to the real working environment is challenging for graduates. Maintaining appointment times, clinical issues, workload demands and management tasks were the factors most frequently associated with stress.[8] Universities should formalise stress education and management strategies within the curriculum.[7] Private practice externships may provide students with valuable perspectives regarding expectations in the workplace.[9]

Time and eye care service-management skills (39.3% agreed; $p=0.067$) were also flagged as possible concerns, as well as taking an interest in organisational affairs (39.3% agreed; $p=0.067$). Rampersad[2] found that, although optometry graduates learnt time-management skills along with experience, they felt that the consultation times were much shorter than those during training. Teaching how to tailor consultation times to the patient's presenting needs may be useful.

Table 1. Employer/mentor rating of graduate skills (N=28)

Question number	Question	Highest response	Respondents, %	*p*-value*
Clinical skills				
1	Performs safe, effective and efficient consultations	Agree	39.3	0.058
2	Results are accurate (e.g. low remakes)	Neutral and agree	28.6	0.343
3	Identifies and responds appropriately to ethical issues arising during patient care	Agree	53.6	<0.001
4	Provides compassionate patient-centred care	Agree	42.9	0.024
5	Shows commitment to work and finds satisfaction in it	Agree	39.3	0.017
6	Has satisfactory clinical knowledge and is able to make appropriate clinical decisions	Agree	39.3	0.024
7	Pays attention to detail and is committed to providing the highest standard of care	Agree	42.9	0.183
8	Provides effective patient management, including a referral to the appropriate healthcare practitioner, if required	Agree	42.9	0.143
9	Is able to adapt to new techniques and instruments	Agree	57.1	0.001
10	Has adequate dispensing knowledge (i.e. lens designs, frame selection, repairs, accurate measurements)	Disagree	39.3	0.103
11	Performs an effective three-way handover (i.e. there is effective information flow between the optometrist, optical assistant and patient after a consultation)	Agree	53.6	<0.001
Communication skills				
12	Has confidence and appears comfortable approaching and interacting with customers	Agree	39.3	0.024
13	Communication is clear, understandable and empathic	Agree	64.3	<0.001
14	Is able to communicate with people of all ages, cultures and levels of education	Agree	46.4	0.014
15	Establishes trust and rapport with patients	Agree	46.4	0.001
16	Respects diversity and understands how differences should be accounted for in decision-making	Agree	57.1	0.001
17	Is able to motivate patients to take responsibility for their health	Agree	50.0	0.001
Collaboration skills				
18	Collaborates with others in the workplace, where appropriate	Agree	42.9	0.008
19	Establishes trust and rapport with colleagues and supervisors	Agree	53.6	<0.001
20	Participates in team meetings and respects team ethics	Agree	64.3	<0.001
21	Has a respectful attitude towards other team members, promotes positive relationships and prevents conflict	Agree	39.3	0.087
22	Resolves conflicts with colleagues and patients appropriately	Agree	35.7	0.037
Leadership and management skills				
23	Has good time management skills, and is able to delegate and prioritise tasks	Agree	39.3	0.067
24	Needs little supervision	Agree	35.7	0.205
25	Shows a willingness to lead and take charge	Neutral	39.3	0.067
26	Sets high standards for themselves and others	Agree	35.7	0.294
27	Is able to handle criticism	Neutral	42.9	<0.001
28	Is dependable and takes responsibility for decisions and actions	Agree	64.3	<0.001
29	Handles stressful situations well	Neutral	42.9	<0.001
30	Copes well with managing new situations and change	Agree	60.7	<0.001
31	Manages the eye care service effectively (including information technology skills, finances, human resources and record-keeping)	Agree	46.4	0.001
32	Implements processes to improve services	Neutral	32.1	0.370
33	Delivers effective staff training	Neutral	64.3	<0.001
34	Understands the structure and function of the practice environment and the healthcare system	Agree	42.9	0.013
35	Takes an interest in organisational affairs and knows the organisation's mission and values	Agree	39.3	0.067
Health-advocate skills				
36	Has good industry awareness and understands business/practice-management principles	Disagree	39.3	0.067
37	Is able to solve everyday practice-related problems effectively and efficiently	Neutral	46.4	0.009
38	Is able to engage with stakeholders or relevant decision-makers regarding service needs	Agree	32.1	0.037
39	Thinks beyond the individual patient's eye health needs	Agree	57.1	<0.001
40	Understands the importance of eye health as a component of healthcare	Agree	53.6	<0.001
41	Actively promotes health and wellbeing in patients and the community	Agree	46.4	0.046

(continued)

Table 1. (continued) Employer/mentor rating of graduate skills (N=28)

Question number	Question	Highest response	Respondents, %	*p*-value*
Scholarly skills				
42	Acknowledges the strengths and limitations of knowledge and skills	Agree	35.7	0.027
43	Actively maintains and improves knowledge and skills	Agree	46.4	0.331
44	Keeps up to date with the continuing professional development requirements	Agree	53.6	0.001
45	Is able to access relevant research, critically appraise it and apply it in practice	Neutral	39.3	0.013
46	Asks questions if unsure and takes the initiative to learn from colleagues	Agree	50	0.001
Professional skills				
47	Exhibits and promotes professional behaviour (e.g. wears the correct attire, is well groomed, practises hygiene when consulting)	Agree	50	0.066
48	Ensures the consultation room and equipment are clean and well maintained	Agree	42.9	0.004
49	Maintains appropriate professional relations with patients and other healthcare providers	Agree	71.4	<0.001
50	Adheres to the appropriate professional, legal and ethical codes of practice	Agree	57.1	<0.001
51	Is able to engage professionally with other healthcare providers in work-related matters (e.g. patient referrals, meetings)	Agree	50.0	0.011

*χ^2 statistic (*p*-values in bold are statistically significant at <0.05).

Table 2. Individual concerns of employers/mentors relating to the practice readiness of optometry graduates in South Africa

Participant number	Individual comment	Summarised concern	Skill
6	'I find that optometry graduates are very geared in the testing room but not always able to apply themselves in a holistic sense in a practice. They tend to lack confidence when presented with remakes and patient complaints. They also tend to forget basics when dispensing, such as spatial distortion with cylinders or anisometropia and its effect on the patient's comfort with specs. I guess all this comes with experience provided the candidate has the correct attitude and is willing to learn.'	Lack of holistic approach; ill-prepared to handle 'come-backs'; questionable dispensing; questionable attitude to learning	Collaboration; clinical scholar
7	'I know that this will most likely not happen in the next few years, but I believe the readiness of the student would be far greater if even one month was compulsory in a practice before qualifying, because the newly qualified optometrist has book knowledge (mostly) but I find they struggle unless there is someone to take them by the hand in practise, because they are nervous (understandably); but what you learn in a textbook will never fully prepare a new optometrist from being in a real interactive practice to learn what human interaction looks and feels like in a practice setting. If they had that they would be FAR better equipped to start off.'	Lack of real-world experience	Clinical
8	'Students need to have a holistic approach to eye care, not only textbook knowledge. Practical skills like multifocal measurements, prescribing reading adds according to working distance and not age, ocular side effects from pharmaceutical medication, etc. Think outside the box.'	Lack of holistic approach; questionable dispensing	Clinical
10	'I found my graduate to be extremely well educated in the theory aspect of optometry but lacking in basic clinical skills. Had one graduate a few years ago, admit he had no idea what he was doing when seeing a contact lens patient. Another graduate had been working for me as a student since her second year. I took her under my wing in her final year and helped her with the practical side of refraction and patient care, thus she was more prepared to step straight into the working world, but still needed reassurance from time to time. I feel the course is very comprehensive but would like to see the students get in more clinical hours before qualifying.'	Good theoretical knowledge; questionable clinical skills; contact lenses; lack of real-world experience	Clinical
11	'Practice-readiness can definitely be improved by lectures with regards to sales and finance. I believe that in today's common eye care setting, sales is a big part of giving the patient what they need without overselling. I also feel like final years should be taught the basics of running a practice to be more confident as they start to work as part of one or form their own. It will encourage business ownership at an early stage without overextending one's self.'	Inadequate practice management	Leadership and management
16	'Training lagging dispensing skills, e.g. as by scope of optometry and dispensing optician, facial measurements, not been taught!!! Optical practical training no workshop experience … no frame adjustment skill, showing the new optometrists a facial gauge, don't know it if any understanding to use it, and don't know the bolts and nuts of optometry, e.g. binocular skill poor and total lack confidence.'	Poor dispensing skills	Clinical

(continued)

Table 2. (continued) Individual concerns of employers/mentors relating to the practice readiness of optometry graduates in South Africa

Participant number	Individual comment	Summarised concern	Skill
17	'New graduates are theoretically capable of joining the corporate world of optometry. However, they join with very little clinical and management skills. With the constant criticism and ridicule that they face from lecturers, their lack of confidence is evident to their peers, employers and patients. The syllabus needs to be revaluated. Undergraduate students should be taught how to manage patients and practices like optometrists should. Too much of emphasis is placed on theory. We don't need to compete with ophthalmologists ... we need to create better functioning optometrists.'	Lack of confidence; inadequate fit-for-purpose training; theoretical bias in training	Clinical leadership and management
23	'I feel like after graduating we are over-knowledgeable, even in things and fields we will hardly or never use. I think training can focus less on theoretical knowledge and more on dispensing skills and practice knowledge such as administration tasks and management skills.'	Theoretical bias in training; insufficient dispensing training; inadequate practice-management training	Clinical leadership and management
26	'It would be helpful if graduates had better knowledge about the different types of spectacle lenses available on the market, e.g. difference between multifocals, office lens types, etc.'	Ill-prepared dispensing training	Clinical

Table 3. Principal component factor analysis for each category of the 51-item questionnaire

Factor	Item (question) included	Percentage variance	Cronbach's α
Clinical skills			
1	1 - 3, 6 - 8, 10	55.98	0.9
2	4 - 5, 9, 11	11.32	0.7
Collaboration skills			
1	12, 14 - 15	63.04	0.8
2	13, 16 - 17	12.62	0.8
Communication skills			
1	18 - 19, 21 - 22	62.01	0.9
2	20	15.77	n/a
Leadership and management skills			
1	23, 27 - 30	46.13	0.9
2	25 - 26, 32 - 33	12.12	0.8
3	24, 31, 34 - 35	9.82	0.7
Health-advocate skills			
1	36, 39 - 41	65.41	0.9
2	37 - 38	11.59	0.8
Scholarly skills			
1	42 - 43, 45	47.00	0.7
2	44, 46	21.40	0.5
Professional skills			
1	48 - 49, 51	54.69	0.7
2	47, 50	20.59	0.6

The participants differed in their opinions regarding the capability of graduates to solve everyday practice-related problems in an effective and efficient manner (46.4% neutral; p=0.009). Industry awareness and business/practice management principles (39.3% disagreed; p=0.067) were identified as possible weaknesses among graduates. Rampersad[2] found that optometry graduates felt that they were not prepared for the administrative and commercial aspects of optometry. Three participants specifically raised concerns about inadequate practice-management skills.

Most participants agreed that graduates were able to think beyond the individual patient's eye health needs (57.1% agreed; p<0.001) and understand the importance of eye health as a component of healthcare (53.6% agreed; p<0.001).

Scholarly skills

Most participants agreed that graduates had adequate scholarly skills in all areas, except being able to source the relevant research, critically appraise it and apply it in practice (39.3% neutral; p=0.013). Evidence-based practice and critical thinking are important skills for practice readiness or work readiness,[10] and time should be set aside for continuing education.

Professional skills

Participants believed graduates displayed strengths in professional behaviour, ensuring a professional practice setting (42.9% agreed; p=0.004), maintaining appropriate professional relations (71.4% agreed; p<0.001) and adhering to appropriate legal and ethical codes of practice (57.1% agreed; p<0.001).

Study limitations

The study had a relatively low response rate. Group interviews may have improved the observations. EMs might differ in their opinions about graduate practice readiness owing to the location, culture or nature of their individual practice. However, no such distinction was made in this study. EMs were not asked to disclose how many years of experience their graduates had; therefore, no relationship could be drawn between years of experience and areas of weaknesses.

Conclusion

Graduate optometrists' strengths lie in theoretical knowledge, communication, collaboration and professional skills. Their weaknesses lie in aspects of clinical, leadership and management, and health-advocate skills. Current training programmes may not satisfy all professional requirements for the private sector. Findings may help universities better understand the factors affecting recent graduates' transition into the workforce to ensure an improved preparedness for the workplace. Diversity of clinical hours, including private practice externships, as the current major employer of SA graduate optometrists, may improve work-based learning in the curriculum. Furthermore, including employers

and experienced optometrists in the ongoing design and delivery of the optometry course will help to ensure that training aligns with the evolving needs of the industry.

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1. Lowden K, Hall S, Elliot D, Lewin J. Employers' Perceptions of the Employability Skills of New Graduates. London: Edge Foundation, 2011.
2. Rampersad N. Graduates' perceptions of an undergraduate optometry program at a tertiary institution: A qualitative study. MEd degree. Durban: University of KwaZulu-Natal, 2010. https://ukzn-dspace.ukzn.ac.za/bitstream/handle/10413/5154/Rampersad_Nishanee_2010.pdf?sequence=1&isAllowed=y (accessed 14 July 2023).
3. Medical and Dental Professions Board. Core competencies for undergraduate students in clinical associate, dentistry and medical teaching and learning programmes in South Africa. 2014. https://www.chs.ukzn.ac.za/Libraries/News_Events/MDB_Core_Competencies_-_ENGLISH_-FINAL_2014.pdf (accessed 3 March 2022).
4. Spaulding S, Martin-Caughey A. The goals and dimensions of employer engagement in workforce development programs. 2015. https://www.urban.org/sites/default/files/publication/76286/2000552-the-goals-and-dimensions-of-employer-engagement-in-workforce-development-programs_1.pdf (accessed 3 March 2022).
5. Oduntan AO, Louw A, Moodley VR, Richter M. Perceptions, expectations, apprehensions and realities of graduating South African optometry students. S Afr Optom 2007;66(3):94-108. https://doi.org/10.4102/aveh.v66i3.241
6. Hausberg MC, Hergert A, Kröger C, Bullinger M, Rose M, Andreas S. Enhancing medical students' communication skills: Development and evaluation of an undergraduate training program. BMC Med Educ 2012;12(1):16. https://doi.org/10.1186/1472-6920-12-16
7. Merga M. Gaps in work readiness of graduate health professionals and impact on early practice: Possibilities for future interprofessional learning. Focus Heal Prof Educ Multidiscip J 2016;17(3):14-30. https://doi.org/10.11157/fohpe.v17i3.174
8. Long J, Burgess-Limerick R, Stapleton F. What do clinical optometrists like about their job? Clin Exp Optom 2013;96(5):460-466. https://doi.org/10.1111/cxo.12017
9. Goetz JW, Tombs JW, Hampton VL. Easing college students' transition into the financial planning profession. Financ Serv Rev 2005;14:231-251.
10. Casner-Lotto J, Barrington L. Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century US Workforce. Washington DC: Partnership for 21st Century Skills, 2006. https://files.eric.ed.gov/fulltext/ED519465.pdf (accessed 4 March 2022).

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