

# Profiling Australian school students' interest in a nursing career: insights for ensuring the future workforce

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## KEY WORDS

aspirations, career, school students, nursing, nurses

## ABSTRACT

### Objective

Given that the current shortage of nurses threatens the quality of health care globally, we urgently need to find new ways to bolster recruitment. This paper aims to understand patterns and predictors of interest in a nursing career among school students in order to inform ways of ensuring a viable future workforce.

### Design

A four-year longitudinal mixed methods study undertaken in New South Wales, Australia.

### Setting and subjects

Survey data collected annually (2012–2015), involving 6,492 students in Years 3–12 in government schools, were analysed using logistic regression. Focus group data (2013–2015) involving 553 students and open-ended survey responses were analysed to investigate reasons for interest in nursing.

### Results

Significant predictors of interest in nursing included being female and having a parent in a nursing occupation. A 'helping orientation' and prior experiences with nurses or nursing were key factors underpinning students' interest in this career. Some students perceived nursing as a 'safe' career choice, balancing practical concerns, such as job security, with their desire to care. Other students expressed ambivalence, with nursing but one of many 'caring' careers to which they were drawn.

### Conclusion

Given that early experiences with nursing or nursing-related activities influenced the desire to pursue this career, developing new experiential strategies that engage school student interest are important for ensuring the growth and stability of the Australian nursing workforce.

## INTRODUCTION

A viable healthcare system capable of providing optimum population health outcomes relies on a healthy and sustainable nursing profession (Gaynor et al 2008). However, concerns about a global nursing shortage have been repeatedly raised over the last decade (World Health Organization 2011; Price 2009; Oulton 2006). As the nursing workforce deficit adversely impacts health care systems around the world, nursing recruitment and retention are now top priorities for both healthcare services and the nursing profession (McLaughlin et al 2010).

A number of factors influence the choice of nursing as a career, ranging from the tangible (such as pay, workload, convenience, and family responsibilities) to the intangible (such as job satisfaction, status, and psychological rewards) (Eley et al 2010). A decline in the number of applicants to nursing schools has also been identified as influencing the nursing shortage (Drury et al 2009; Oulton 2006). As supply fails to meet demand, the need to understand what motivates people to choose nursing as a career becomes more important than ever (Usher et al 2013).

The question of motivation has been explored internationally in studies involving school students (Neilson and Jones 2012; Neilson and McNally 2010; Cohen et al 2004), student-nurses (Jirwe and Rudman 2012; McLaughlin et al 2010; Mooney et al 2008), and registered nurses (Genders and Brown 2014; Gambino, 2010). These studies found the decision to enter the nursing profession was influenced by gender, culture, experiential knowledge, self-concept and a desire to help others (Price et al 2013). Pre-held beliefs about nursing, an idealistic view of caring, and the influence of others (Price 2009), including a family history of working in health (Eley et al 2010), were also significant incentives.

In Australia, where a shortfall of 85,000 nurses is projected by 2025 and 123,000 nurses by 2030 (Health Workforce Australia 2014), researchers have also sought to understand why individuals enter nursing (Hickey and Harrison 2013; Eley et al 2012; Eley et al 2010). This work, however, has focused almost exclusively on the perspectives of student-nurses and registered nurses. As a result, little is known about the kinds of school students interested in a nursing career. Dockery and Barnes (2005) reported 'registered nurse' as the seventh most popular occupation for Year 10 females, and altruism, flexibility, and the influence of a parent in the occupation as factors shaping Year 12 female students' decision to undertake nursing studies. Another small-scale study explored gender and career aspirations, but provided no insight into why nursing appealed to the two students in their sample who chose nursing (Ford 2011).

Our study contributes to this growing body of research by taking an 'upstream' focus to explore the perspectives of primary and high school students. We argue that research on younger students is needed because: (i) nursing aspirations often form early in life (Hoke 2006) and (ii) fewer school leavers, traditionally the core of pre-registration nursing programs, are choosing nursing as a career (Drury et al 2009).

## METHODS

The four-year longitudinal mixed methods study aimed to investigate demographic and other characteristics of students interested in specific careers requiring university education, with nursing the focus here. Schools were selected with variance in socio-economic status and geographic location (50% metropolitan, 50% provincial) in order to generate a comprehensive profile of the aspirations of students aged 8 to 18 years. In each school, all students commencing in Years 3, 5, 7, and 9 in 2012 were potential participants, with each cohort followed until 2015. This is the first Australian study to explore aspirations of students across the entire Year 3 to 12 range.

## DATA COLLECTION

### Student surveys

Participants came from 64 schools in New South Wales, Australia. Surveys were conducted annually during the period 2012–2015. Informed consent from students and parents/carers was obtained, with 6,492 students completing the survey at least once. Survey formats varied for primary and secondary students to account for different levels of education. 5,925 students nominated at least one occupational aspiration.

### Focus group interviews

Focus group participants were purposively sampled in order to deepen our understanding of students' career interests. Focus groups with 553 students were conducted between 2013 and 2015, during school hours and lasting 30–60 minutes. Students discussed: their post-school plans, their job thoughts, with whom they discuss their plans, and their thinking about university and/or Technical and Further Education (TAFE). All interviews were digitally recorded and transcribed.

### Data analysis

Potential predictors of interest in nursing were grouped into student-related variables (table 1) and school-related variables (table 2), identified as follows:

**Table 1: Student background variables**

Variable	Source	Measure
Gender	School enrolment form	Categorised as male or female.
Indigenous status	Enrolment form	Categorised as Indigenous or non-Indigenous.
Student cohort	Survey	Year 3 Cohort: Years 3–6 Year 5 Cohort: Years 5–8 Year 7 Cohort: Years 7–10 Year 9 Cohort: Years 9–12 Measures differences between students of different ages.
School location	NSW Department of Education	Determined by school postcode and dichotomised as metropolitan or other.
Language background	Enrolment form	Categorised as English-speaking background or language background other than English (LBOTE).
Socio-economic status	Enrolment form	Calculated by combining the highest parental education and occupation levels for each student into an equally weighted proxy for student SES. Data for all NSW government schools were used to separate scores into quartiles.
Cultural capital	Survey	Calculated by student responses to the question: How often do you do the following activities? (Listen to classical music; talk about music; go to the theatre to see a play, dance or opera performance; go to art galleries or museums; go to the cinema to watch a movie; go to a library; talk about books; play a musical instrument or sing; participate in dancing, gymnastics or yoga; talk about art)
Parental occupation	Survey	Determined by responses to questions: What is your parent's/carer's job? Please describe what your parent/carer does in this job.
Survey year	Survey	Survey participation year. Measures changes in student aspirations over time.
Prior achievement	NSW Department of Education	Calculated from the most recent National Assessment Plan for Literacy and Numeracy (NAPLAN) test scores for each student. Attainment was taken as the equally weighted composite of individual student Reading and Numeracy scores. Data for all NSW government schools used to separate scores into quartiles.

**Table 2: School-related variables**

Variable	Source	Measure
ICSEA	My School (www.myschool.edu.au)	The Index of Community Socio-Educational Advantage (ICSEA) is a standardised scale measuring school advantage based on summarising student level data. A higher score indicates a relative lack of disadvantage. ICSEA scores were categorised using cut-offs from the state quartile values in each year.
Self-perception of relative academic performance	Survey	Perceived achievement relative to peers was a self-assessment item: How are your marks this year compared with other students? (Well below average, Below average, Average, Above average, or Well above average?)
Access to tutoring	Survey	Determined by response to question: Do you attend any out-of-school tutoring?

**Statistical analysis**

Univariate logistic regression analysis was undertaken to investigate determinants of career aspirations for nursing. All student-related and school-related variables were included as potential predictors in a regression model, reported as adjusted odds ratios and adjusted p-values. To adjust for the correlation of outcomes within students due to repeated measures, a logistic regression model was fitted within a Generalized Estimating Equation (GEE) framework, a method robust against violations of normality and missing data assumptions. The GEE model was compared to an equivalent random effects Generalized Linear Model employing the same data and variables, both of which produced similar estimates and p-values. Data were analysed using SAS software, version 9.4. Statistical significance was set at 0.05.

**Qualitative analysis**

To understand the factors underpinning school students' reasons for an interest in nursing, open survey responses and focus group data were subjected to thematic analysis. Data were coded by a team of researchers using inductive and deductive logic (Creswell 2013) and analysed with the assistance of NVivo software version 10. A continuous process of reflection and discussion among coders ensured consistency and group consensus (Harry et al 2005) about emerging themes. Identified themes were included in a codebook as a reference point for use by all members of the research team (Guest et al 2011). Multiple methods were used to increase validity by providing multiple perspectives on the same phenomenon (Yin 2009). Reliability was ensured through a well-established protocol documenting each step of the research process (Yin 2009).

**FINDINGS**

Nursing was the 15th most popular career interest of all student-identified occupations, with 207 students (9 males, 191 females, 7 not stated) expressing an interest in nursing in at least one survey year (3.19% of all students). During focus group discussions, 14 students (2 males and 12 females, 2.5% of all students) from Years 5 to 11 indicated an interest in nursing. Results are reported in three main sections: (1) predictors of interest in nursing, (2) patterns of interest over time, and (3) reasons for interest. Quantitative and qualitative data are combined in the latter two sections.

**Predictors of interest in nursing**

The only statistically significant predictors of interest in nursing were sex, age, and a parent in a nursing occupation, as shown in table 3. Females were nearly 25 times more likely to choose nursing than males (OR = 24.70). Students interested in nursing had greater odds of being in the Year 7 (OR = 1.98) or Year 9 (OR = 2.27) cohorts than in the Year 3 cohort, and of completing the survey in either 2014 (OR = 2.49)

or 2015 (OR = 2.87) rather than 2012, indicating that nursing becomes a more attractive career option as students mature. Students with a parent who worked as a nurse were more than twice as likely to express an interest in nursing (OR = 2.17) than those with parents in other occupations. Notably, no other variables were significant predictors, including SES, prior achievement, Indigenous status, or location.

**Table 3: Results of logistic regression analysis**

Characteristic	Nursing career choice		Odds ratio
	No n (%)	Yes n (%)	
<b>Indigenous status</b>			
Indigenous <sup>a</sup>	643 (97)	18 (3)	
Non-Indigenous	9,103 (98)	227 (2)	
<b>Student cohort</b>			
Year 3 <sup>a</sup>	2,884 (99)	42 (1)	
Year 5	2,842 (98)	66 (2)	
Year 7	2,785 (97)	87 (3)	1.98*
Year 9	1,700 (96)	62 (4)	2.27*
<b>Cultural capital quartile</b>			
1 <sup>a</sup>	2,444 (98)	51 (2)	
2	2,382 (97)	72 (3)	
3	2,502 (98)	61 (2)	
4	2,414 (98)	61 (2)	
<b>Language</b>			
English <sup>a</sup>	8,753 (97)	235 (3)	
Other	1,078 (99)	15 (1)	
<b>School location</b>			
Metro <sup>a</sup>	5,971 (98)	99 (2)	
Non-metro	4,314 (96)	158 (4)	
<b>Parent in nursing occupation</b>			
No, or unknown <sup>a</sup>	9,844 (98)	231 (2)	
Yes	442 (94)	26 (6)	2.17**
<b>SES quartile</b>			
1 <sup>a</sup>	2,178 (97)	63 (3)	
2	2,580 (97)	81 (3)	
3	2,193 (97)	60 (3)	
4	2,472 (99)	29 (1)	
<b>Sex</b>			
Male <sup>a</sup>	5,077 (100)	10 (0)	
Female	4,754 (95)	240 (5)	24.70***
<b>Survey year</b>			
2012 <sup>a</sup>	2,541 (99)	31 (1)	
2013	3,916 (98)	80 (2)	
2014	1,843 (97)	65 (3)	2.49***
2015	1,986 (96)	81 (4)	2.87***

<b>ICSEA national quartile</b>		
1 <sup>a</sup>	2,505 (97)	73 (3)
2	4,133 (97)	146 (3)
3	1,064 (98)	19 (2)
4	2,584 (99)	19 (1)
<b>NAPLAN quartile</b>		
1 <sup>a</sup>	1,943 (98)	43 (2)
2	2,385 (96)	93 (4)
3	2,597 (97)	82 (3)
4	2,685 (99)	21 (1)
<b>Self-rated ability</b>		
Below/Well below average <sup>a</sup>	773 (97)	24 (3)
Average	3,804 (97)	130 (3)
Above average	3,030 (98)	66 (2)
Well above average	1,246 (99)	11 (1)
<b>Tutoring</b>		
Yes <sup>a</sup>	1,685 (98)	31 (2)
No	8,373 (97)	223 (3)

Note. <sup>a</sup> reference category. \*p < .05, \*\*p < .01, \*\*\*p < .001.

### Patterns of interest in nursing

The longitudinal nature of the data enabled analysis of individuals' interest in nursing across the survey years, 2012–2015 (see table 4). Of the 115 students who completed more than one survey and named nursing at least once, more than 74% were moving towards or holding a steady interest in nursing. However, more than 24% of the students disengaged from nursing during the study.

**Table 4: Patterns of interest in nursing**

Pattern of interest	Description / explanation	%
'Towards'	First expressed interest in a non-nursing job, then interest in nursing in each subsequent survey	49.6
'Steady'	Expressed interest in nursing in every survey	25.2
'Away'	Expressed interest in nursing in one survey but not in subsequent surveys	16.5
'Brief'	First chose a job other than nursing, then chose nursing in a later year, then returned to a non-nursing job in the last survey	7.8
'Returned'	First chose nursing, then jobs other than nursing, but returned to nursing in their last survey	0.9

Some indeterminacy about nursing was also apparent in the focus groups. For example, students described nursing as one of several possibilities, including as a 'back-up plan':

*"I had a lot of different, like, decisions and choices that I've been tossing up between."* (Shyanne, Year 11)

*"[I've been considering nursing since] last year [because] I like helping people and nursing seems like one of the options to do as a career."* (Gabriella, Year 9)

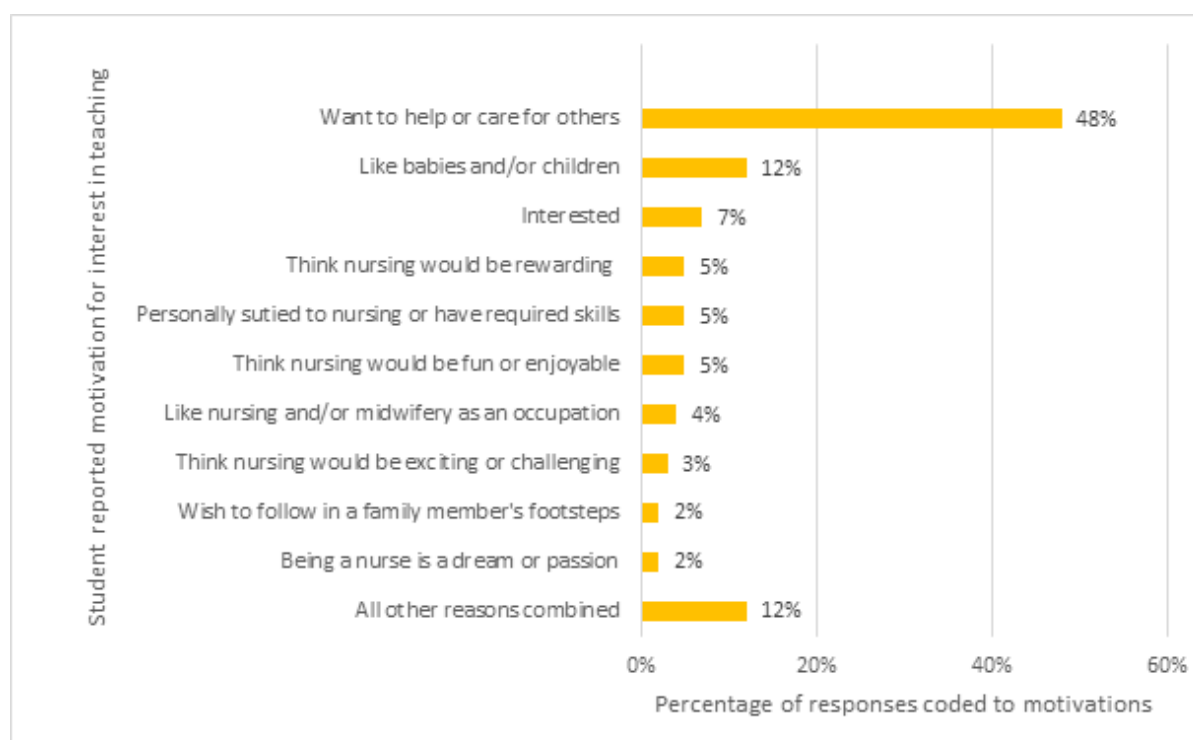
*"They are kind of the same thing [nursing and teaching] because you get to help kids when you're a teacher and you get to help kids when you're a nurse."* (Ilyssa, Year 5)

*"Hopefully a nurse but also a vet or something like that .... But I know that a vet ... there's a lot into it. Hopefully I'll find an easier way but a nurse will do me good."* (Neil, Year 9)

### Reasons for interest in nursing

Analysis of the reasons given by students for their interest in nursing (in open survey responses) yielded 11 distinct categories (figure 1). Nearly half of all students who expressed an interest in nursing cited a desire to care for and help others. They wanted to “save lives, help people” (Grace, Year 9), “have a positive influence in their life” (Amber, Year 10).

**Figure 1: Students’ interest in a nursing career by reason**



At the same time, students tended to describe nursing as a ‘win-win’ career, providing intrinsic reward through helping others as well as providing secure and flexible employment:

*“I really want to help people and by being a nurse I benefit from making people better.”* (Janelle, Year 10)

*“[It’s] a stable career. I’d like to help people every day and come home from work knowing I’ve made a difference.”* (Louise, Year 10)

*“[My parents] think it’s good because they said I’ll always have a job and I can go up into nursing [from Aged Care] if I want to.”* (Christina, Year 11)

Favourable perceptions of the profession were also conveyed as students talked about a future in nursing. They believed it required extraordinary qualities, and was a worthwhile career that could provide diversity and freedom from monotony:

*“[Being a nurse is the] closest thing to a super hero.”* (Bettina, Year 11)

*“You’ve got so many opportunities... you can specialise in a certain ward that you really like because you can... experience them all.”* (Shyanne, Year 11)

*“I would wake up every morning not dreading to go to my job.”* (Trish, Year 9)

*“[It’s] unpredictable which would make every day unique.”* (Claire, Year 11)

While only two males discussed nursing as a career during the focus groups, they conveyed positive, if more tentative, perceptions of “probably” wanting to be a nurse:

*"I wanted to do something in the medical region... a nurse would probably be my place where I want to be." (Neil, Year 9)*

When another boy laughingly mentioned a film where a male nurse is a figure of ridicule, Neil was not deterred: "I wouldn't mind. It would be good". His friend then acknowledged Neil's suitability for nursing, with an appropriate disposition for carrying out caring work:

*"You've got a very caring nature. As soon as someone is hurt, you are always there and comforting them even if you don't know what happened." (Jaylen, Year 9)*

Students often drew on personal experiences with nursing as they explained their interest in this kind of work. Some students identified with and wanted to emulate other nurses:

*"I'd love to take after my mum. I have been to work with her plenty of times. I love taking care of people and to think I'd be helping someone who needs my helping hand." (Narelle, Year 9)*

*"My mum's family friend actually just finished her nursing stuff... She gives me questions and I answer it... she's just getting me warmed up for it. ... So I'm really excited to do that." (Georgie, Year 6)*

Students' experiences with illness also brought them into close contact with the world of nursing work and strongly influenced their interest:

*"Helping people out, like, the kids ... that have cancer and stuff .... I've always wanted to be a nurse since my cousin died of cancer." (Zoey, Year 7)*

Exposure to nursing through work experience and part-time work also shaped interest in nursing:

*"I did work experience in a hospital and loved it. I currently work in an Aged Care facility and I'm hoping to move up in the nursing industry as an RN." (Wendy, Year unknown)*

## DISCUSSION

Results of this study depart from prior research in two main ways. First, although a previous Australian study found that average to below-average academic ability predicted interest in nursing (Dockery and Barnes 2005), prior achievement was not a significant variable in our analysis, indicating that students from across the achievement quartiles, including high-achieving students, were interested in nursing. Second, nursing was neither an unpopular career choice (Neilson and Jones 2012) nor of limited appeal (Dockery and Barnes 2005) to the primary and secondary students in this study. It was considered a worthwhile, rewarding, and stimulating career, requiring exceptional, even 'heroic', qualities.

Nursing remains one of the most persistently feminised workforces in Australia, with nine out of every ten nurses and midwives being women (Australian Institute of Health and Welfare 2013). Our study reinforces the dominant perception of nursing as caring work, with gender continuing to influence intentions to enter the profession (Price et al 2013). As found in previous studies, a "helping orientation" (Miers et al 2007, p.1198), or desire to help and care for others (Jirwe and Rudman 2012; Mooney et al 2008; Hemsley-Brown and Foskett 1999), was the primary driver of interest in a nursing career. On the other hand, it was encouraging that nine male students were among our sample of 207 who expressed interest in nursing. Their positive talk about nursing runs counter to a previous study which found that 15-year-old boys were openly antagonistic towards nursing as "a girl's job" (Hemsley-Brown and Foskett 1999, p.1346).

Prior direct contact with nursing also provided strong motivation for entering the profession. Personal experiences and interpersonal interactions with nurses served to shape students' visions of possible futures in nursing. In particular, a parent working in the field afforded students personal experience of what was likely



to be achievable for themselves. Family and friends, work experience, and other interactions with nurses and healthcare settings, gave students a sense of what nursing entails, which in turn strengthened their interest in nursing.

### **Aspiration in formation: a contested space**

Longitudinal research enables a comprehensive analysis of how career reasoning develops over time (Howard et al 2015). Students' ambivalence about nursing as a career choice, exemplified through shifts toward and away from nursing over the course of the study, is noteworthy.

Students explore, and are open to a variety of career options, especially during their middle school years (Cohen et al 2004). Gottfredson (2002) proposed that children develop an awareness of occupational roles and reject occupations they perceive as more suited to the opposite sex, as low status, or too difficult for them to attain. Others suggest that, over time, children 'learn their place' and align their aspirations with classed, gendered, or racialised paths that effectively fit family-class backgrounds (Archer et al 2014). Similarly, our study showed that as students advanced through schooling, they aligned altruism with the practical realities of careers.

### **Implications for building the nursing workforce**

Our study underscores the importance of engaging future nurses early in their career decision-making process. If we are to enhance recruitment and retention within the profession, we need to understand that competition exists from related 'caring' careers, such as teaching and veterinary science. Although there was a stronger trend towards rather than away from nursing during our study, nearly 25% of once-interested students disengaged from this career choice. While nursing remains unique amongst health professions in its capacity to foster early commitment to the profession, it is no longer the only career option for students with a helping orientation. Graduate programmes in non-medical health professions including physiotherapy, occupational therapy, radiotherapy, and diagnostic imaging, are emerging as strong competitors for nursing recruits (Miers et al 2007). Thus, school students' inclination for and interest in nursing needs to be nurtured if their caring predisposition is to translate into nursing enrolments.

Student aspirations are often set well before Year 10 (Gore et al 2015). By late primary school, many young people have rejected certain jobs, including nursing, on the basis of perceptions. Our study indicates that experiential activities that give young people a sense of what the world of nursing work involves, are instrumental in increasing nursing's appeal beyond the 'traditional' aspirant. Innovative strategies overseas have involved: partnerships within industry; prime-time television advertisements; video and print recruitment materials; fund-raising for student scholarships; and grants to expand capacity in nursing schools to (Buerhaus et al 2005) as well as a 'Nursing Exploration Summer Camp' whereby participants gained hands-on experiences of what a nursing career will involve (Matutina 2008).

Our findings also signal an important role for Australian universities in actively promoting nursing as a career choice (Stanley et al 2016). As student work experience in nursing becomes increasingly challenging for public teaching hospitals to resource, there are new opportunities for cross-sector collaboration between universities, schools, and hospitals. Strategies that showcase the world of nursing work to school students have clear potential to engage their interest in and broaden their understanding of nursing.

This paper offers new understandings of predictors of nursing student recruitment, with its unique sample of primary and secondary school students. While childhood aspirations do not necessarily predict future outcomes and participation, they can indicate the types of careers young people are likely to pursue later in life (Archer et al 2013). By better understanding the motivations of school students drawn to a nursing career, we can develop more targeted approaches to recruitment. This study, however, also highlights key

challenges in recruiting the next generation of Australian nurses. It is critical to appreciate that nursing is not the only career that will appeal to students with a strong helping orientation and that other 'caring' careers are strong rivals for nursing recruits. Innovative strategies that promote and nurture school students' interest in nursing are essential if we wish to ensure growth and stability in the profession.

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