

Pathways towards equity: Achievements by online initial teacher education graduates across Australia

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The proliferation and growth of online initial teacher education (ITE) has provided emerging evidence that access to this pathway provides life-changing opportunities for students who may have previously been marginalised from higher education. However, there is limited research that examines achievement of groups known to have been under-represented in higher education. To begin to discern the impact of the demographic composition of ITE courses on their achievements across key components of the course, more research is needed. Our article reports on the case of a large undergraduate Australian online ITE program with diverse student cohorts. Graduates' course achievement is examined according to socio-economic status (SES), residing location, and entry pathway. The data reported demonstrate that overall achievement levels are high, with findings revealing that in providing access to these online ITE programs, barriers to participation and achievement arising from students' SES, residing location, or formal academic background, can be ameliorated without impacting negatively on graduate achievements. Thus, we assert that the availability of quality online ITE is crucial in enabling participation and achievement of more diverse students, thus broadening accessible education.

Introduction

Online initial teacher education (ITE) programs, while relatively recent, are an increasingly ubiquitous phenomenon. The Australian Institute for Teaching and School Leadership (AITSL, 2018) "Spotlight" report indicated that the number of ITE students enrolled in off-campus modes more than doubled between 2007-2016, and, in 2016, 25% studied entirely off-campus. The report indicated that by 2014, more than half of ITE students were completing at least some of their studies online. Australian Government (2022) data show that in 2020, enrolments across all higher education (HE) courses grew 29.5% from 2019 in "external" mode and 39.5% in "mixed" mode, versus a decline by 13.3% in the "internal" mode. While the significant changes from 2019-2020 were due to Covid-19, they reflect pre-existing trends (Australian Government, 2022). The availability of online learning is impacting enrolment patterns within generalised growth in engagement in HE.

Online ITE courses are the focus of this research because they have significant uptake by students who may have otherwise experienced barriers to participation in HE. Research conducted by Pelliccione et al. (2019) (N=4858) into examining undergraduate online ITE courses established that the students resided in a diverse range of locations, had a broad age range with the largest group aged 25-39, and SES (socio-economic status) ranging from low to high. Indications were that online availability removed barriers due to remoteness from campuses, low-SES, and demands associated with mature-aged learning such as family, work responsibilities, and length of time since last studying (Gall et al., 2000). Pelliccione et al. (2019) positioned online ITE as able to prepare high achieving

graduates with graduate course weighted average (CWA) scores across 2012-2018 in the Distinction range (70-79%), and Final Professional Experience (FPE) results in the High Distinction range (80-100%).

The research reported in this paper builds on findings of studies conducted by Pelliccione et al. (2019) and Walker et al. (2020), including analysis of the achievements of students not only from low-SES groups and/or those residing outside metropolitan locations, but also those utilising the open-entry pathway. Empirical case study data is presented from a significantly sized cohort of graduates from online courses that are identical in composition (including content and assessments) to campus-based courses and meet the same Australian ITE accreditation requirements (AITSL, 2019), including the successful demonstration of the Graduate Teacher Standards prior to graduation (Standard 1.1) and at least 80 days (undergraduate) of assessed and supervised professional experience “mostly in a recognised school setting” (Standard 5.2, p.18) (AITSL, 2019).

The purpose of this reported research is to determine the proportions of online ITE graduates from each of the identified demographic groups and entry pathways, to ascertain whether there are any significant differences in course achievement. Findings will provide evidence to inform assertions about the potential impact of broadening access to ITE.

Literature review

Characteristics and considerations in online ITE environments

Literature reviewed firstly considers the nature of online learning as there may be a relationship between the environment and the affordances provided for certain demographic groups: the same students may or may not achieve similarly in traditional, face-to-face programs.

Online learning has been positioned as an emergent construct (Anderson, 2008) and even as “a new paradigm” (Harasim, 2000, p. 17; Harasim, 2011) with an impact on learning theory which has implications for successful navigation of online study. Challenges can arise for cohorts who are likely to be older than their campus-based counterparts, have reduced access to robust Internet service, may be less experienced with digital technologies (Yu & Hang, 2009), as well as more likely to face competing family or work responsibilities (Greenland & Moore, 2014; Stone, 2017). However, online courses can also contribute to dismantling direct or consequential disadvantage. Data about online students’ participation and achievement are essential to the profession and broader stakeholder groups. Research by Downing et al. (2019) found that participant institutions had some awareness of the potential for increased accessibility through online study, although most expressed concerns about the engagement that could be engendered online. However, online learners were described overall in terms such as “committed, motivated, focused, engaged” (p. 66). This research concluded that online ITE could contribute to attracting ‘quality’ teachers, though such affordances are not an inevitable outcome of providing access to online courses.

Achieving quality experiences and outcomes requires different strategies for online learning and teaching (Khoo, 2010; Oblinger & Oblinger, 2005; Duff & Quinn, 2006), including addressing students' expectations. Best practice in ITE must be enacted in online environments to avoid consequences cautioned by the Australian Council for Educational Research (Ingvarson et al., 2014, p.44) that "... there are also programs, such as online programs, where it is difficult to believe that these best practice principles can be met, or how they can meet rigorously imposed accreditation standards". Evidence so far suggests fears may be unnecessary at least for institutions with sizeable online programs (Alter, 2014; NSW Education Standards Authority (2015); Downing et al., 2019). Further research is being conducted into key factors or course design components that help institutions to provide optimum online learning environments (Acquaro, 2020; Bradaric et al. 2022; Hehir et al. 2021) with some research focusing specifically on ITE (Zagouras et al. 2022).

Focus cohorts

Building on research evidence showing that online ITE can and does enable high-achieving graduates, this study analyses data from three key online ITE graduate cohorts: those from low-SES groups, those residing in regional and remote locations, and those who entered their course via open-entry pathways. These cohorts were chosen because access to online courses provides study opportunities that these students may otherwise not have, and so it is important to understand the extent to which online ITE may contribute to equitable access to HE in Australia, and whether that access then impacts on measures of graduate achievement. The last is especially significant because fiscally driven, low-qualification entry points have been posited (although contested) as risky to graduate quality (Barnes et al., 2021; Ingvarson, 2016; Scholes et al., 2017).

Low-SES

Participation rates of HE Australian students from low-SES groups are lower than those for high-SES groups and achieving equity in participation persists as a challenge for higher education (Williams, 2022). The Australian demand-driven system has increased HE participation overall and has reduced differentials for students from a low-SES background (Pitman, 2014; Australian Government, 2022); although, as Pitman (2014) noted, other elements of representativeness remained unresolved, such as students from regional or remote backgrounds. Part of the challenge derives from skeptical views about the potential for low-SES students to succeed in HE, which may not account for relevant complex layers of disadvantage and instead, situate solutions with the students themselves, as though barriers to access and supports to success are within their control (Vuong et al., 2010; McKavanagh & Purnell, 2007). The focus has been on recognising and encouraging students' motivation and resilience, rather than on examining contextual conditions. McKay and Devlin (2016, p. 350) challenged deficit discourses around students from a low-SES background and asked that universities cease to 'other' these students and urge fundamental change in the way low-SES classified students are viewed and treated. Data that tracks course completion and achievement levels is therefore vital. The research reported in this paper contributes by presenting data about the achievement of low-SES

classified students in comparison to mid and high-SES graduates in a large-scale online ITE course.

Regional and remote locations

The lower participation rate in HE outside Australian cities and major centres is well-documented (Ferguson, 2022; Regional Universities Network, 2017; Universities Australia, 2022). For many such students, particularly considering the typical online demographic, relocating for study is not viable. Data published by the Australian Bureau of Statistics (Ferguson, 2022) and Regional Universities Network (RUN, 2017, p.2) show “a significant differential in HE attainment between city and regional” young Australians, with a clear correlation between the distance from major cities and attainment rates. However, the report also noted that the participation rate in regional Australia was growing slightly faster than that in cities, albeit off a low base; thus, significance was difficult to ascertain. Whether that increase can be ascribed to the growing provision of online courses is not yet established but may be a contributing factor. Universities offering ITE have been aware of the link between how they provide opportunities for their regional and remote students and the benefits for local communities (Bartlett, 2006; Kline et al., 2013) The RUN report also concluded that “young people in regional Australia continue to be less likely to aspire to a higher education” (p. 2), with 63% in urban areas intending to enrol compared with regional areas (39%) and remote areas (32%).

The conclusion that it is the aspirations of young regional and remotely located Australians that needs changing, rather than limitations in opportunity, reveals a pervasive and contestable narrative. An important contribution to an alternative narrative is to demonstrate participation and achievement rates in online ITE by regional and remote graduates. Eversole (2021) claimed that the shift to online learning has “temporarily erased the longstanding disparity... between cities and regions”. Further increasing participation may also address another important challenge emphasised by the RUN, which is that “students... in regional areas tend to remain in regional areas after graduation and provide a ready supply of professionals to fill critical regional roles” (2017, p.3).

Open-entry pathways

Alternative entry pathways (those not dependent on secondary schooling results) offered in Australian HE have mostly focused on different ways of demonstrating ‘equivalent’ academic capacity, whereby applicants provide documentation of successful completion of study or examinations considered equivalent to an Australian Tertiary Admission Rank (ATAR). The opportunity to engage in HE without any formal education equivalence has been limited, but this opportunity exists in the online ITE course reported in this paper. Students can self-enrol in any of the first-year units in the Bachelor of Education courses (designated as ‘open’ units) and achieve formal course admission through successful completion of four of these units. This is known as the ‘open-entry pathway’.

Providing an open-entry pathway could appear antithetical to the pursuit of raising standards of teachers. Thus, emerging evidence of the value of online ITE in removing barriers and increasing diversity in the profession must robustly scrutinise the achievement of students who have entered via these pathways. Meaningful challenge can then be mounted to the notion that an ATAR or approved equivalent is the most reliable indicator of a quality graduate and should be the sole focus in raising standards. Although there is strong predictability of success for students with a high ATAR (Manny, Tam & Lipka, 2019a), not all successful students necessarily have a high ATAR. Other factors may be equally strong success predictors (Manny, Tam & Lipka, 2019a). Exclusion through the over-zealous application of one narrow measure can be viewed as not only socially unjust but a disservice to the profession. The Australian University Admissions Centre report (Manny, Tam & Lipka, 2019b, p. 4) stated that the ATAR “doesn’t account for student disadvantage, ambition, passion or interest”. The equity imperative afforded through an open-entry pathway to HE has been argued by Stone et al. (2016) and Stone (2017), citing the known barriers for specified groups and the strong desire of many students to improve their life circumstances through education.

Continuing challenge

The proliferation of online HE and development of online learning design have accelerated in response to COVID-19, leading to increased awareness of affordances (Eversole, 2021) and of what is required to enable them (TEQSA, 2020, p.7). Known affordances for online ITE are it provides a pathway for flexible participation in HE for students who may be older, have caring responsibilities, come from lower-SES backgrounds, reside in regional and remote locations and who may not hold formal entry qualifications (Stone et al., 2019). Research exploring online ITE also indicates that students are achieving and satisfied in their studies and are successful in obtaining employment, with many employed at schools where they undertook professional experience placements (Dobozy & Ifenthaler, 2014; Holzweiss et al., 2014; Pelliccione et al., 2019; Walker et al., 2020). However, online ITE been met with scepticism. This may have arisen in relation to the requirement for graduates to meet explicit standards and expectations. Doubt exists as to whether online ITE produces graduates of an equivalent calibre to those who graduate from more traditional programs. On occasion, employer bodies have been biased towards graduates from the face-to-face mode and other studies revealed perceptions amongst employers that graduates of online courses were less well-developed in communication skills (Carnevale, 2007; Gaytan 2009; Huss, 2007; Pelliccione et al., 2019). Further empirical evidence that looks more closely at some of the demographic groups in online ITE will thus enable fairer, data-informed positions.

Research aim and questions

This research aimed to examine the achievement of online ITE graduates from identified demographic cohorts. In keeping with this aim, three research questions were established:

- What are the profiles of online ITE graduates from 2012-2020, according to SES, residing location, and entry pathways?
- What are the differences in CWA of online ITE graduates from 2012-2020 according to SES, residing location, and entry pathways?
- What are the differences in FPE achievements of online ITE graduates from 2012-2020 according to SES, residing location, and entry pathways?

Method

A quantitative single-case research design was utilised to explore online ITE graduates' CWA and FPE achievement at one Australian university. This method supports our research in that it enables identification of relationships and comparison between variables in a single context and supports the development of a rigorous explanation within real-life contexts (Mills et al., 2010).

Research context

The single case is a large Australian university offering ITE programs both in the face-to-face and online modes (AITSL, 2018). The University has been offering fully online ITE courses since 2009. More students are admitted to the fully online mode than the campus-based courses, with enrolments managed by a partnering organisation. Both courses have the same composition, content, and assessment requirements.

Participants

The participants were a purposeful sample of graduates from the online Bachelor of Education (Early Childhood or Primary) courses. The participants (N=2479) graduated in the years 2012-2020 inclusive and all were de-identified in this university-approved research.

The majority of graduates were female (n=2249), aged between 26 and 35 (n=1011), and studied their course full time (n=2419). Table 1 shows that students in these courses resided across all Australian states and territories and enrolment distributions followed demographic patterns for the Australian population (ABS, 2021a).

Table 1: Participant residing locations across years 2012-2020 (N=2479)

State/Territory	No
NSW	1033
VIC	593
QLD	363
WA	270
SA	151
ACT	43
TAS	16
NT	10

Online ITE course

The Bachelor of Education (Early Childhood or Primary) online courses are Level 7 in the Australian Qualification Framework, professionally accredited, and comprise four years full-time or equivalent study. The online courses are delivered via four study periods (13 weeks in duration) annually. A full-time load comprises the completion of two units per period, equal to eight units annually. Course entry and completion can occur in any one of the four periods. There were 36 graduating cohorts from 2012-2020. Data were collected across the years 2012-2020 at the 36 course completion points.

Data collected

All data collected in this research were accessed through the University's data management system and provided by this systems team to the researchers. This section explains each dataset and identifies any relevant constraints or limitations of the data.

Online ITE graduate achievement

The first data set collected was the graduates' course weighted average (CWA). The CWA is calculated by averaging marks awarded for all 29 units in the four-year undergraduate ITE course, with a weighting given to the final unit as it carries a points value equivalent to four standard units of study. The CWA is expressed as a percentage score and is impacted by any course components that may have been failed before being repeated and successfully completed. Using averages of course-wide results are an established way of representing both individual and comparative achievement levels (Suryawan & Putra, 2016) and have been applied in studies of online course achievement (Carson; Cho et al., 2013). While a commonly used measure, the limitations of what they may or may not indicate have also been recognised (Bailey et al., 2014; Meadows et al., 2019). Therefore, while the CWA has been used for this research as one key achievement measure, it has been complemented by the FPE which is more specific to the ITE context, and which extends the assessment parameters.

The second data set was the graduates FPE (Final Professional Experience). This is the percentage score, to one decimal place, awarded for the final unit of study in the course. The unit comprises a school term-long full-time professional experience placement and is completed by all online ITE students in a school in a face-to-face manner. The FPE mark is derived from a robust, comprehensive and complex framework that shapes the assessment of ITE students. The FPE assessment is mapped explicitly to national standards for graduate teachers (AITSL, 2016) with a common framework used by school-based and university-based assessors to make explicit to ITE students the assessment criteria (Morrison, 2016; Shaukat et al., 2021). A mark out of 10 is provided by the mentor teacher and the supervisor and then averaged for a final percentage result. Pass scores in the FPE must be achieved to graduate.

Demographic groups

The graduate demographic datasets of gender, age, SES, residing location, and entry pathway were collected. In the University system, gender was categorised as male, female or other; age in years; and residing location as urban, regional or remote based on location postcode. SES was captured by the University and reported in this paper in accordance with methodology used by the Australian Bureau of Statistics (ABS, 2016). Scores between 1 and 100 are generated based on the student's residing location and categorised as low <25, middle >25 and <75, and high >75 (ABS, 2016). The ranking system is derived from the *Population and Housing Australian Census* (ABS, 2016) based on the postcode of residing location (urban, regional, and remote) and includes an explanation of economic and social well-being. The methodology used has been viewed as problematic as scores are derived from the average SES of all persons living within their postcode area, and other more accurate measures for HE students have been devised (McMillan & Western, 2000). However, the researchers were constrained by University-supplied data for this measure. The data does provide a commonly used, standardised method of categorising SES and thus some useful comparisons are possible despite limitations to identification of full diversity.

Entry into the Bachelor of Education (Early Childhood or Primary) courses can occur through multiple pathways. The entry pathway information is openly published on the University website and includes the pathways: a score of 70 or more in English, English Literature or English as an Additional Language in ATAR; successful completion of Special Tertiary Admissions Test in identified elements; recognised Australian university enabling/bridging qualifications; successful completion of four units at an Australian university (Bachelor or higher level); successful completion of identified vocational diplomas and certificates with English competency; the successful completion of four open to study for all level one ITE units; or successful completion of two open to study for all level one ITE units plus evidence of competency in English. However, as the university systems categorise entry pathways differently to the aforementioned information, the research team devised groupings that supported the data analysis. Accordingly, mapping was undertaken (see Table 2), to ensure transparency and reliability. The groups generated were confirmed with the relevant university area to ensure accuracy.

Data analysis

All data was imported into IBM *SPSS Statistics* (V27) where it was thoroughly cleaned and screened including visually inspecting data for input errors (showing impossible values), missing data, outliers, and duplicate information. Besides some missing data, very few issues were detected, and all were corrected. Little's test showed that missing data was missing completely at random (MCAR; $p = .160$) (Little, 1988; Tabachnick & Fidell, 2013). Of these missing datapoints, 15 could be imputed manually using ABS data (for variables SES and residing location) (ABS, 2016). From the total 2,611 cases, data for a further 132 cases were removed for the following reasons: An *a priori* power analysis conducted using *G*Power* (Faul et al., 2007) indicated that each residing location group comprise a minimum of 45 cases each to detect a medium effect ($f = .25$) with 80% power using one-

way ANOVAs at an alpha level of .05. Within this, students of international status ($n = 29$) were removed due to insufficient sample size as well as considering the research aims which focused on Australian ITE entry pathway residing locations. Two cases were removed due to missing data (related to entry pathway), and three students who completed in 2021, thus providing an insufficient sample size. In summary and overall, 2,479 students were included.

To create demographic profiles, descriptive statistics including frequencies, means and standard deviations were calculated for all variables. To develop achievement profiles, mean averages were calculated for both CWA and FPE according to demographic (SES, residing location) and entry pathway variables. To determine significant differences between group means among variables with multiple categories one-way analysis of

Table 2: Mapping of entry pathways across years 2012-2020

Published entry pathways	University system recorded entry pathways	Entry pathway groups for research project
Successful completion of four Level One ITE units which are nominated as open to study for all	Completed 4 Units (25 credits)	Completed Open Units
Successful completion of two open Level One ITE units plus evidence of English competency	2 OLA Units completed (50 credits)	Completed Open Units
Successful completion of four undergraduate (or higher) units at an Australian university	Incomplete higher education course 1 year of bachelor degree at Australian university	Incomplete higher education course
	Completed tertiary qualification	Completed tertiary qualification
ATAR of 70 or greater with English, English Literature or English as an Additional Language	Completed WA secondary Interstate - Secondary ed (recent 2 years) International secondary education	Completed secondary education
Successful completion of identified vocational diplomas and certificates with English competency (or higher)	Completed VET qualification AQF Advanced Diploma AQF Diploma International diploma Incomplete VET	TAFE studies
Successful completion of the Special Tertiary Admissions Test in identified elements	International - Other Qualifications Other basis	Other basis
Recognised Australian university enabling or bridging degrees		

variances (ANOVAs) were conducted (Bewick et al., 2004). Significant ANOVA results were followed by Tukey's Honest Significant Difference (HSD) post-hoc comparisons to determine which groups differed significantly (Bewick et al., 2004). Cohen's *d* effect sizes were used to assess the relative magnitude of means differences whereby .2 is considered a small effect, .5 a medium effect and .8 a large effect (Cohen, 1998). Significant ANOVA results were also presented alongside partial eta-squared (η^2) effect sizes to provide an indication of the proportion of variance in the dependent variable that can be accounted for by the independent variable and is based on the interpretation that .01 is a small effect, .06 is medium and .138 is a large effect (Cohen, 1969 as cited in Richardson, 2011). Relevant assumptions tests were conducted for every analysis undertaken.

Results

Profiles

Firstly, to determine profiles to address Research Question (RQ) 1, data are presented that show numbers and proportions of graduates across the years 2012-2020, to illustrate the composition of cohorts according to SES, residing location and entry pathway into the course. The purpose of this data is to clearly establish the diversity of the cohorts in the terms identified and to demonstrate that student representation in each group is sufficiently sizeable for achievements to impact on overall and average achievement levels. In many cases, graduates will possess more than one of the reported demographic characteristics, that is, they may simultaneously be from a low-SES group, reside in a regional location and/or have entered their course through a pathway other than secondary schooling and ATAR.

Table 3: Numbers and proportions of graduates 2012-2020 from specified demographic groups (N=2479)

Variable	Group	n	Percent
SES categories	Low	608	25%
	Middle	1448	58%
	High	423	17%
Residing location	Remote	51	2%
	Regional	615	25%
	Urban	1813	73%
Course entry pathway	Alternative entry	787	32%
	Tertiary study	1645	66%
	Completed secondary ed.	47	2%

For the purposes of the points made above and for Table 3, some data pertaining to course entry pathways have been combined from those shown at Table 2: "Incomplete higher education course" has been combined with "Completed tertiary education" and shown as "Tertiary study"; and "TAFE studies", "Completed Open Units", and "Other basis" have been conflated to represent numbers and proportions who did not enter through secondary or tertiary study pathways. These graduates represent admissions bases

often referred to as ‘alternative entry’, the label used in Table 3. A breakdown of achievements in accordance with the full range of categories shown in Table 2 is provided later in this Results section.

CWA and FPE

In addressing RQs 2 and 3, the overall achievement of online ITE students between 2012-2020, showing total CWA and FPE results are firstly presented in Table 4, with a significant medium correlation presented.

Table 4: CWA and FPE means and standard deviations across years 2012-2020

Score	<i>N</i>	<i>Mean</i>	<i>SD</i>	Correlation (r_s)
CWA	2,479	70.90	6.25	.43**
FPE	2,479	81.56	15.87	

Tables 5-7 present data addressing RQ2 (CWA Achievement); Tables 8-10 present data addressing RQ3 (FPE Achievement).

CWA achievement

Tables 5-7 detail CWA in accordance with SES categories (Table 5), residing location (Table 6), and then course entry pathway (Table 7).

Table 5: CWA means and standard deviations according to SES across years 2012-2020

Score	SES	<i>n</i>	<i>Mean</i>	<i>SD</i>
CWA	High	423	71.29	6.57
	Middle	1448	70.93	6.26
	Low	608	70.57	5.96

Results of one-way ANOVAs returned no significant differences in CWA, $F(2, 2476) = 1.67, p = .189$, according to SES.

The residing locations of all students included in this cohort were 73.1% urban, 24.8% regional, and 2.1% remote. Table 6 presents the means and standard deviations for CWA according to these residing locations.

Table 6: CWA means and SDs according to residing location across years 2012-2020

Score	Location	<i>n</i>	<i>Mean</i>	<i>SD</i>
CWA	Urban	1813	70.74	6.36
	Regional	615	71.30	5.81
	Remote	51	71.79	7.23

The one-way ANOVA revealed no statistical significance, indicating that CWA was not influenced by residing location, $F(2, 2476) = 2.39, p = .092$. Results should be interpreted conservatively since the analyses may be slightly underpowered to detect medium effect sizes given the small sample size for the remote group (Faul et al., 2017).

Of the online undergraduate ITE cohort who completed their courses between 2012-2020, 60.5% were admitted based on an incomplete HE course, 23.4% completed open units, 5.8% completed tertiary qualifications, 4.9% completed vocational diplomas and certificates, 3.5% were admitted on an 'other basis', and 1.9% completed secondary education. Table 7 reports mean and standard deviations for CWA according to entry pathway.

Table 7: CWA means and SDs according to entry pathway across years 2012-2020

Score	Admission basis	<i>n</i>	<i>Mean</i>	<i>SD</i>
CWA	Incomplete higher education course	1500	70.70	6.16
	TAFE studies	121	71.66	6.47
	Completed secondary education	47	70.16	5.40
	Other basis	87	69.48	5.93
	Completed Open Units	579	71.59	6.4
	Completed tertiary qualification	145	70.66	6.57

Assumptions testing was conducted, and all conditions were met for the analyses. A one-way ANOVA assessing differences between entry pathways and CWA achievement across all years was statistically significant, $F(5, 2473) = 3.17, p = .007$, with a small effect ($\eta^2 = .006$). Post-hoc comparisons were significant in two instances. Students who were admitted based on having completed Open Units achieved significantly higher grades than those admitted with an incomplete HE course ($MD = .89, d = .29$). Further, students who were admitted on completed Open Units achieved higher CWAs than those admitted on the 'other basis' ($MD = 2.11, d = .30$).

FPE achievement

Addressing RQ 3, Tables 8 to 10 detail FPE in accordance with SES categories (Table 8), residing location (Table 9), and then course entry pathway (Table 10).

Table 8: FPE means and standard deviations according to SES across years 2012-2020

Score	SES	<i>N</i>	<i>Mean</i>	<i>SD</i>
FPE	High	423	82.62	14.95
	Middle	1448	81.77	16.22
	Low	608	80.31	15.60

Results of one-way ANOVAs returned no significant differences in FPE achievement means between SES groups. $F(2, 2476) = 2.96, p = .052$.

Table 9: FPE means and SDs according to residing location across years 2012-2020

Score	Location	<i>N</i>	<i>Mean</i>	<i>SD</i>
FPE	Urban	1813	81.68	15.95
	Regional	615	81.62	15.14
	Remote	51	76.57	20.70

Table 10: FPE means and SDs according to entry pathway across years 2012-2020

Score	Admission basis	<i>n</i>	<i>Mean</i>	<i>SD</i>
FPE	Incomplete higher education course	1500	81.97	15.24
	TAFE studies	121	82.40	15.40
	Completed secondary education	47	82.55	11.67
	Other basis	87	78.39	18.34
	Completed Open Units	579	80.95	16.70
	Completed tertiary qualification	145	80.59	18.60

The ANOVA assessing mean differences in FPE achievement between groups was not significant $F(2, 2476) = 2.58, p = .076$. Results should be interpreted conservatively since the analyses may be slightly underpowered to detect medium effect sizes, given the small sample size for the remote group (Faul et al., 2017).

There were no significant mean differences in FPE achievement according to entry pathway, $F(5, 2473) = 1.28, p = .269$.

Discussion

This paper reports CWA and FPE achievement profiles of online ITE graduates (2012-2020) from an Australian university according to SES, residing location, and entry pathway. The data revealed that the largest numbers of graduates were female, aged 25-36, who studied full time, resided in middle-SES and urban areas, and entered the course through completing some units in HE. The findings reveal above average (with average being a CWA of 65) achievement in both CWA and FPE regardless of the graduates' SES, residing location and entry pathway. This evidence makes a contribution to the argument that online ITE can represent a significant and valuable form of opportunity for some groups of students known to have been previously disadvantaged, marginalised, discriminated against, or excluded (e.g., Stone, 2017; Stone et al., 2017; Pitman, 2014; NSW Government, 2018).

The findings from this research are significant for moving forward discourse about equity of access and its relationship to graduate quality. The data suggest that the online environment is providing equivalent experience regardless of students' residing location and SES background. Further, it indicates that the online program might 'level the field' by removing challenges and barriers relating to location and relative advantage based on SES (Mackay & Devlin, 2016). However, given the differences in participant numbers across the categories, these are conservative claims even though these participant numbers

are generally reflective of population distribution (ABS, 2021b) in terms of urban, regional, and remote residing locations and low, middle, and high-SES.

In contesting some views about the relationship between ATAR scores, student success and graduate quality (Graham, 2014; Tam & Lipka, 2019a; Wright, 2015), the findings from this research are noteworthy in that there are no significant differences in FPE achievement according to entry pathway. This suggests that online ITE graduates are succeeding regardless of educational background. It is proposed that the life experiences that many mature-aged female online students possess adds value to their learning and achievement. There were some small differences for CWA, but this revealed that graduates who entered through the completion of open-entry ITE units achieved higher results than those who entered through an incomplete HE degree and via the 'other' basis. The small effect size should not detract from the finding but points to the need for further research.

The research findings support an argument for a more inclusive appreciation of 'quality' entrants (Graham, 2014; Manny, Tam & Lipka, 2019a; Wright, 2015). However, caution is urged that similar causal fallacies are not extrapolated: only graduates from the online ITE programs were researched. Therefore, the conclusion is that online students can be as successful regardless of their entry pathway, not that open-entry pathway students are equally likely to succeed. Whether they will succeed is dependent on many complex factors. Therefore, the argument is not one of predictive weight but of the inherent fairness of providing opportunities for students to succeed. Further, in providing those opportunities to diverse students, it is not sufficient to simply provide access. Their needs within the online learning environment must be addressed and doing so demands changes to the way the learning environment is structured and managed.

Conclusion and recommendations

There remains an imperative for ITE and HE more widely to broaden access and support marginalised people and their communities. This may include students from low-SES backgrounds, who are geographically isolated, or who lack more traditional evidence of academic ability, as well as those who experience more than one or all factors.

For the teaching profession, there is opportunity to increase diversity and potential for contribution to community in the sense that many graduates from regional and remote contexts will go on to work in and contribute to their local communities. By setting these students up for success, community and workforce planning needs can be met. Online ITE is a valuable strategy towards broadening participation. Furthermore, and critical to addressing disquiet about online ITE, broadening opportunity does not mean inevitably reducing quality: graduates can achieve strongly regardless of SES, where they live, or their entry pathway.

To ensure such outcomes, providers should avoid practices and narratives that over-individualise and place students solely in charge of their success. A progression towards

recognition of intersectionality and the role that institutions play in enabling belonging, engagement and success is key. There is opportunity for providers to share how they effectively remove barriers, facilitate access, and scaffold achievement (Alam et al., 2022). As research begins to show that high achievers can come through open-entry pathways, the responsibility of institutions and systems to properly welcome, include and support such students becomes clearer and more pressing (Selfert & Bar-Tal, 2023).

While broad generalisations cannot be made from the single case study reported here, the findings of this research make a case for the widening of access, without risk to quality, for specified cohorts. Further research is needed into other contexts where open-entry pathways into ITE are offered, where strategies are in place that increase participation from other specified groups. Comparative studies could clarify what the critical success factors are for Australian online ITE. Comparisons could be made to other universities who offer online ITE, across face-to-face cohorts, and for wider impact, to national ITE data. That clarification could then inform guidance for practice and robust evaluation.

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