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Gretchen Geng
Charles Darwin University

Richard Midford
Charles Darwin University and The Menzies School of Health Research

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Investigating First-Year Education Students' Stress Level

Gretchen Geng
Richard Midford
Charles Darwin University

Abstract: This paper investigated the stress levels of first-year education students who undertake teaching practicum and theory units during their first year of teacher education program. First, 139 first-year and 143 other years' education students completed the PSS-10 scale, which measures perceived level of stress. Then, 147 first-year education students completed an online questionnaire to identify the particular stressors in their learning experience. The first-year education students had significantly higher stress levels than other years' education students, ($p < .01$). Contributing stressors included academic work commitment; completing placement and related performance assessments in schools and at university; having a good understanding of the requirements of professional teaching, such as classroom management, and working with mentor teachers; and conflicting work and family commitments. These findings provide greater understanding about the stressors experienced by first-year education students and usefully inform ways to help this group achieve their study and career goals.

Transition Pedagogy and Stress From First Year Tertiary Students

The experience of first-year tertiary students has been the subject of research for many decades. Beginning in 2006, Professor Kift developed a research-based Pedagogy, which includes six First Year Curriculum principles that underpin support for first-year higher education students: transition, diversity, design, engagement, assessment and evaluation and monitoring (Kift, 2009). This Transition Pedagogy provides a solid theoretical background for course design, including assessment design, for courses undertaken by first-year pre-service teachers.

Researchers such as Harvey, Drew and Smith (2006), Reason, Terenzini and Domingo (2006) and Tinto (1987, 2001) identified that the first year of higher education is an important transitional experience that can lead to success or failure at university. Stallman (2010) reported, from a large-scale research project, which involved 6,479 students in two large universities, that Australian university students have significantly higher stress levels than the general population.

Other researchers (Nelson, Duncan & Clarke, 2009; Tinto & Pusser, 2006) identified several factors that influenced first-year tertiary students' experience. These included: a) prior academic performance (French, Immekus & Oakes, 2005; Johnson, 2008; Scott, Shan, Grebennikov & Singh, 2008); b) social and academic readiness to collaborate with course lecturers and other students (Cox, Schmitt, Bobrowski & Graham, 2005; Lohfink & Paulsemn, 2005); c) technical readiness to use online technologies (Geng & Disney, 2010); and d) conflicting work commitment (Long, Ferrier & Heagney, 2006).

The following specific factors were identified by Willcoxson, Cotter and Joy (2011) as leading to withdrawal from study: financial problems, transferring to another university, academic difficulties, family responsibilities, personal problems and poor quality teaching. In recent studies, Garcia-Ros, Perez-Gonzalez, Perez-Blasco and Natividad (2012) found that perceived stress was common in the first year of university studies, and that the highest stress levels were related to oral presentations, academic overload, lack of time to meet commitments, and taking exams.

Stress From First Year Education Students

Education students, one group of tertiary students, are required to undertake teaching practicums throughout their teacher education program, in addition to their theory study load (Mitchell, Maher & Brown, 2008). In Australia, many teacher education programs include a teaching practicum in the first year. In particular, almost all the graduate entry pre-service teachers are required to undertake their first teaching practicum during the first year of their teacher education programs. Although Australian universities have different requirements on the year and days for the first teaching practicum, the length of their first teaching practicum normally ranges from 10 to 20 days in total, carried out in several blocks.

During their professional practicums education students are required to complete a range of experiential tasks, such as becoming familiar with school culture, working closely with their mentor teachers and planning their teaching. They are assessed on their performance in the practicums (Chung, 2008). In addition to the performance tasks in placement schools, education students are expected to collaborate with peers on academic theory tasks and are assessed on this collective work in the university setting (Chung, 2008).

Rieg, Paquette and Chen (2007) state the style of placement assessment, designing and developing national curriculum based lesson plans, teaching students, and applying strategies and pedagogy from their theoretical learning, all within the tight timeframe of teaching practices, can be very stressful for education students. Research on the mental health and wellbeing of education students has indicated that this stress can result in students withdrawing from study and teaching as a future career (Rieg et al., 2007). On the other hand, Willcoxson et al. (2011) found that the more informed education students were about their future occupation, the greater the likelihood of them continuing their course.

Researchers such as Graunke and Woosley (2005) and Juillerat (2000) in the United States found that commitment to academic work and the nature of interactions with academic and administrative staff was significantly related to the withdrawal rate of first-year students. In Australia, Peel, Powell and Treacey (2004) reported that the factor of “course dissatisfaction” (p.245) was a key contributor in first-year students’ withdrawal. In 2011 Willcoxson et al. studied first year students’ withdrawal in six Australian universities and found that they were the group at greatest risk. Researchers (Mohr, Eiche & Sadlacek, 1998; Willcoxson et al., 2011) further investigated the principal reasons for this withdrawal among first-year students and found that commitment to their institution and learning, to their course, and to study time were significantly associated with the likelihood of withdrawal. On the other side of the balance sheet, Willcoxson et al. (2011) found that having a clear reason for attending university and knowing the type of occupation to which students aspired were significantly related to a lower likelihood of withdrawal in the first year.

While considerable research has been conducted on first-year tertiary students' learning experience, very limited research has been focused on the possible stressors experienced by first-year education students in completing teaching placements, as well as studying theory units. The immediate aim of this research was to investigate the nature and level of stress experienced by first-year education students compared to the stress experienced by education students further along in their studies. The further purpose was to better understand the study pressures on this group to inform the future development of strategies that would assist them in attaining their professional goals.

Methods

This study employed both quantitative and qualitative research methodologies. The project had two phases: Phase 1 measuring perceived levels of stress using the Perceived Stress Scale – 10 item (PSS-10) developed by Cohen, Kamarch and Mermstein (1983), and Phase 2 collecting information on respondents' demographic characteristics, and their opinions and experiences of their course work, using a purpose-designed online questionnaire (see Figure 1). Collection of quantitative data used PSS-10, and closed questions in the purpose-designed questionnaire. Qualitative data was collected through open-ended questions in the questionnaire.

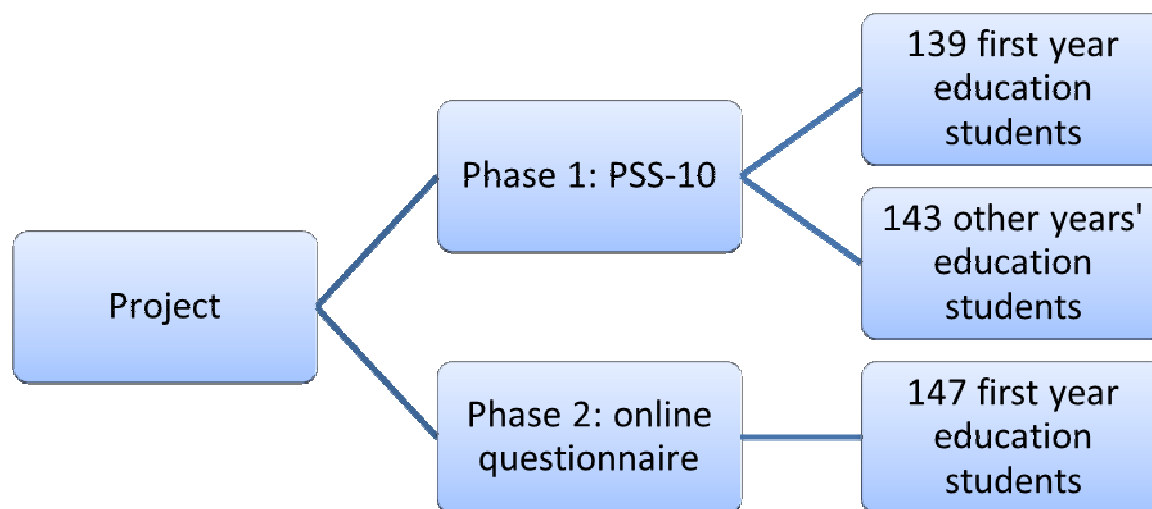


Figure 1. Outline of the Project

Participants

Education students studying at an Australian university were invited to participate in the study. In Phase 1, 139 first-year and 143 other years' education students completed the PSS-10 stress scale.

In Phase 1, out of the 139 first-year education students, 77.8 per cent were females and 22.2 per cent were males. Out of the 143 other years' education students, 84.6 per cent

were females and 15.4 per cent were males. Among both groups of students, over a third of the students were aged between 31 and 40 years.

In Phase 2, 147 first-year students participated in the online questionnaire. The 147 first-year participants included the 139 first-year education students in Phase 1 and 8 more first-year education students. Out of the 147 first-year students in Phase 2, 76.2 per cent were females, and 21.8 per cent were males (some students did not indicate their gender). Approximately a quarter of the participants (26.5%) were between 18 and 25 years of age, with the majority of the participants (67.9%) aged between 26 and 40 years.

Instruments

The original Perceived Stress Scale (PSS) is a 14-item scale that measures the degree to which the participants believe events in their lives are currently unpredictable, uncontrollable and overwhelming. It is a self-reporting instrument that measures the level of perceived stress during the last month, using a 5-point response differential for each of the 14 statements (0 = never, 1 = almost never, 2 = once in a while, 3 = often, 4 = very often). The higher the score, the more stressful the participants perceive their current life situation to be. Summarised by Cohen, Kamarck and Mermelstein (1983), the PSS does not raise the possibility of psychiatric problems; rather it is a well-regarded tool, used by many researchers such as Cohen and Janicki-Deverts (2012) and Cohen, Janicki-Deverts and Miller (2007) to measure work-related stress. The present study used the shorter, 10-item PSS-10 to estimate the students' current psychological stress associated with their completion of theory units' assessments and their teaching practicum. The PSS-10 can be administered in less time, and is easily scored (Remor, 2006). It provides a slight improvement in total explained variance and internal reliability over the longer PSS-14 (Cohen & Williamson, 1988). The PSS is not a diagnostic instrument, so there are no norm tables; however, González-Ramírez, Rodríguez-Ayán and Hernández (2013) developed norms and a factor structure based on a large-scale sample in Mexico. They found that the average score for their population on the PSS-10 was between 14.52 and 17.73.

In addition to the PSS-10, a purpose-designed questionnaire was used in this study to acquire information from the participants about their characteristics, workload and opinions (Gay & Airasian, 2003; Leedy & Ormrod, 2005). The questionnaire consisted of 16 closed questions, covering participants' demographic characteristics and the hours they spent on work associated with their teaching practicums and theory units. The closed questions allowed comparison across respondents. The questionnaire also contained 8 open-ended questions regarding participants' opinions on how to improve assessment of the placement and theory units. Open-ended questions were included in the survey as this "allows for the informants to answer from their own frame of reference rather than being confined by the structure of pre-arranged questions" (Bogdan & Biklen, 1982, p.135).

Data gathering and analysis

The data gathering processes were piloted before the commencement of the main study. This was done to ensure the participants understood the instructions for completing the PSS-10 and the questionnaire items. The questionnaire was pilot studied first and then the PSS-10 and questionnaire were administered on line, with data gathering for the main study conducted from May to July 2014.

The researchers used the Statistical Package for Social Science (SPSS) to analyse the responses. T-test was used to analyse the differences of stress level of education students between first-year students and other students in other years. One-Way ANOVA was also used to analyse the differences of stress levels in first-year students' age groups and gender differences. Chi-square was used to analyse first-year students' hours spent on the tasks. Qualitative data such as the participants' comments on their other work and family commitment and suggestions for improving assessment support, were collected, ordered and analysed thematically using NVivo. Critical discourse analysis (CDA) (Tamatea, 2008) was employed to analyse responses from open-ended questions in the purpose designed questionnaire. CDA is based upon both linguistic theory (Ainsworth & Hardy, 2004; Fairclough, 2001; Henderson, 2005; Wodak, 2001) and social theory (Habermans, 1990). CDA can be used to analyse data through a three-dimensional framework – micro, meso and macro-level interpretations about the participants' opinions towards strategies or support system that could be used to assist pre-service teachers' experience successful learning.

Results

Phase 1

It was found that both first-year and other years' education students had higher stress levels than the norm range (14.52-17.73) of the general population. The stress levels of the first-year education students and education students from other years were compared and it was found that first-year students' stress was significantly higher than those of students in other years, $t(280) = 3.06, p < .01$ (see Table 1).

	<i>n</i>	<i>Mean stress score</i>	<i>SD</i>
First-year education students	139	22.50	6.14
Other years' education students	143	20.31	5.91

Table 1: Stress Levels between First-Year Students and Other Years' Education Students

There was no significant relationship between the participants' age group and their stress levels, $F(4, 134) = 1.78, p = 0.14$. Moreover, the participants' stress levels were not related with their gender, $F(1, 135) = 0.70, p = 0.40$.

Phase 2

The first-year participating education students were asked to indicate the hours they spent on both practicum placement tasks and theory unit tasks in one week of full-time studying. The placement tasks comprised: 1) planning for teaching; 2) competency in completing learning materials provided by lecturers (understanding of practicum-related learning materials and completion of assignments); and 3) working with mentors. The theory unit tasks comprised: 1) work group collaboration; 2) competency in completing learning materials provided by lecturers (understanding of education theory-related learning materials and completion of assignments); and c) working with lecturers. The participants were asked to indicate the time they spent using the following categories: 1–5 hours per week, 6–10 hours per week, 11–15 hours per week, 16–20 hours per week and more than 20 hours per week.

Table 2 shows that first-year education students spent the greatest proportion of their time on learning materials related tasks in both the placement and theory components of their course.

Tasks	1–5 hours	6–10 hours	11–15 hours	16–20 hours	>21 hours	
	n, percentage					
Placement tasks	• Requirement in completing learning materials provided by lecturers (understanding of learning materials and completion of assignments)	36, 26.1%	43, 31.2%	34, 24.6%	15, 10.9%	10, 7.2%
	• Working with mentors	56, 38.1%	34, 25.0%	14, 10.3%	9, 6.6%	23, 16.9%
	• Planning for teaching	53, 39.0%	40, 29.4%	25, 18.4%	10, 7.4%	8, 5.9%
Theory units tasks	• Requirement in completing learning materials provided by lecturers (understanding of learning materials and completion of assignments)	20, 14.9%	34, 25.4%	36, 26.9%	27, 20.1%	17, 12.7%
	• Collaborate group work	95, 77.2%	19, 15.4%	3, 2.4%	6, 4.9%	0
	• Working with lecturers	106, 87.6%	14, 11.6%	1, 0.8%	0	0

Table 2: Hours Spent on Placement and Theory Units Tasks by First Year Education Students in a One Week Block (5 Days)

Table 3 shows that first-year students who spent 16–20 hours per week working with their mentors had the lowest stress level, followed by students who spent 11–15 hours; however, education students who spent less than 10 hours or more than 21 hours with their mentor teachers had significantly higher stress levels, $F(4, 123) = 2.57, p = .04$.

Hours spent	<i>n</i>	<i>Mean of stress level</i>	<i>SD</i>
1–5 hours	52	22.62	6.60
6–10 hours	32	23.91	5.99
11–15 hours	13	20.85	4.14
16–20 hours	9	17.22	6.42
>21 hours	22	23.64	5.59

Table 3: Hours Spent on Working with Mentor Teachers and Stress Level of First Year Education Students

The group of education students who worked 16 to 20 hours a week with mentor teachers, and who reported minimum stress, were investigated further to identify the nature of their interaction with mentor teachers. A further investigation was undertaken to understand ways of helping their peers reduce stress. The quotation below is an illustrative comment from a student in this group about her challenging, but positive, experience of working with her mentor teacher. Student #61 observed classroom practice in her first placement. Although she was overwhelmed by the large amount of information and resources in placement, her positive placement experience related to working with her mentor teachers, especially in learning classroom management strategies so that the students were well behaved. She noted that her mentor teacher helped her integrate into the classroom teaching environment.

“I had an amazing placement. The school students were so well behaved. My mentor teacher was a fantastic role model and I really was able to integrate into the classroom. I hope all my placements will be like this. There were a lot of

separate sheets for reflection so I got a bit lost at times what to comment on and not got bogged down trying to cover everything. But I think being a little overwhelmed on the first placement in terms of what to observe is normal.”

Twenty-one students (14.3%) stated that their stress level in placement was strongly related to completion of performance assessments. Nineteen students (12.9%) believed that the first assessment was not demanding, while two (1.4%) participating students preferred not to have any performance assessment during placements, because of their busy schedule at schools.

Out of the 147 first-year education students, 76 (51.7%) reported that they spent on average approximately 15 hours per week on another work commitment. The work commitment was categorised into the following groups. The figures in brackets represent the number and percentage of participants reporting the nature of their other commitment, it should be noted that some participants reported commitment(s) in more than one category:

- School-related paid work (12, 15.8%);
- School-related volunteer work (3, 3.9%);
- Outside-school paid work (27, 35.5%);
- Family-related commitment (e.g. housework, parenting, looking after elder parents) (18, 23.7%);
- Sports and outdoor activities (1, 1.3%); and
- Social activities (2, 2.6%).

An example of other commitments by first-year education students is provided by student #3. She worked in school-related paid work. Her comment in the box below indicates that she normally worked full-time (35 hours per week) as a teaching aide. This changed to part-time (20 hours per week) while she was on placement.

“Paid employment - I work in a preschool normally 35 hours a week as a teaching aide, currently 20 hours a week while completing prac.”

Out of the 135 first-year education students who answered the questions in relation to their awareness and access to support provided by the School of Education, only 54 participants (36.7%) were aware of and had access to the support provided by the School of Education related to their theory units assessment. Seventy-one participants (63.3%) did not know of and/or did not have access to support provided by the School of Education. In regards to the support provided by the School of Education in assisting education students in completing their placement successfully, only 53 first-year education students (37.9% of the 140 participants) were aware of and/or had access to the support, leaving 87 participants (62.1%) answering that they did not know of or did not have access to this support.

Forty-eight participants provided details of the support they had received from schools and universities. This was categorised into five broad groupings. The figures in brackets represent the number and percentage of participants accessing that category of support, it should be noted that some participants accessed support in more than one category:

- Support from mentor teachers (e.g. developing lessons, encouragement) (26, 54.2%);
- Support from school principal and other staff other than mentors (e.g. encouragement) (12, 25%);
- School weekly meetings/sessions with other education students (e.g. catching up, sharing tips) (4, 8.3%);
- Support from university lecturer (e.g. answering questions) (6, 12.5%); and

- Placement office from university (e.g. information provision, training and resources) (8, 16.7%).

Twelve participating students provided the following suggestions or comments in relation to assessment to reduce their stress levels. The figures in brackets represent the number and percentage of participants who provided suggestions and comments, again it should be noted that some participants provided suggestions in more than one category

- Better-timed assessments before placement (3, 25.0%);
- Provision of resources/materials to support understanding of assessments (2, 16.7%);
- Timely feedback to assessment (5, 41.7%);
- Useful assessment items on placement (6, 50.0%); and
- Provision of assessment examples (1, 8.3%).

Discussion

This study makes seven important contributions to our knowledge on the level and nature of stress experienced by first-year education students.

One, it was found that education students' stress levels were much higher than the general population reported in the normative data in the research of González-Ramírez et al. (2013). This is consistent with the statement of Stallman (2010) that university students' stress levels were much higher than those of the general population (Stallman, 2010).

Two, it was found that first-year education students' stress levels were significantly higher than those of students in other years, $p < .01$. This finding is consistent with the finding of Garcia-Ros et al. (2012) that stress is common among students in their first year of university and, in the case of education students, this experience influences whether they continue or withdraw from their course (Harvey et al., 2006; Johnson, 1996; Reason et al., 2007; Tinto, 2001).

Three, first-year education students spent the greatest proportion of their time on academic-related tasks in both the placement and theory components of their course. This finding is consistent with that of Garcia-Ros et al. (2012) that indicated first-year students' high stress levels come from perceived academic overload. First-year education students' commitment to their institution and learning is also strongly associated with their stress levels, which supports the findings of Cox et al. (2005) and Lohfink and Paulsemn (2005) that social and academic readiness to integrate academically, including collaboration with lecturers and other students, influences first-year students' experience.

Four, it was found that an important contributing factor to first-year education students' stress was lack of knowledge about the teaching profession. This is consistent with the findings of Willcoxson et al. (2011) that more knowledge of the occupation is associated with higher satisfaction among education students, and a greater likelihood of them continuing their studies. Support from placement schools, particularly from mentor teachers, as well as the university is also important as it provides a better understanding of important professional skills, which in turn facilitates greater confidence in the classroom environment. Better attention to this issue may lead to lower withdrawal in the first years of training.

Five, it was found that first-year education students' stress in placement was strongly related to completion of performance assessments because of their busy schedule at schools. This finding accords with the previous research that first-year students' high stress levels come from a lack of time to study (Chung, 2008; Gracia-Ros et al., 2012).

Six, more than half of the participants were not aware of, or had no access to, support provided by schools and universities. This finding shows that although factors contributing to course dissatisfaction were recognised (Peel et al., 2004), that there were barriers to accessing support to deal with these factors.

Seven, it was found that more than half of the first-year education students were undertaking paid work. This suggests that stressors for first-year education students include financial issues (Nelson et al., 2009), conflicting work commitment (Long et al., 2006) and family responsibilities (Willcoxson et al., 2011).

Conclusion

This paper investigated the stress level of first-year education students and the factors that contributed to this. Results from the PSS-10 and questionnaire found that the first-year education students had higher stress levels than other years' education students. Contributing stressors included the following:

- academic work commitment;
- completing placement and related performance assessments in schools and universities;
- lack of a good understanding of the teaching profession, such as understanding and applying classroom management techniques, and working with mentor teachers; and
- conflicting work and family commitments.

The present study particularly indicated that working with mentors between 16 to 20 hours per week during placement was significantly less stressful than committing more or less time, which in turns suggests an optimum commitment rather than simply 'more is better'.

There are several limitations to the study. The data was drawn exclusively from one Australian university, and whilst the causes of first-year education students' stress level were identified, these were not investigated in fine detail. For example, the participants in the present study undertook their first teaching practicum in their first year. This does not apply to all Australian universities. Moreover, the actual tasks that the first-year students worked on with their mentor teachers, and the issues they had to deal with on placement, were not identified or contrasted with the experiences of other years' education students. Furthermore, while the study found that institutional support was not well accessed by the first-year education students it did not investigate the reasons for this in great depth. Consequently, little comment can be made as to how support should be improved to reduce student stress.

Although not all Australian universities require education students to undertake teaching practicum during their first year of the course, this study has provided greater understanding of the stressors experienced by first-year education students who are required to undertake their first teaching practicum in their first year. The present study found that three of the four stressors were within the university's sphere of influence: Academic work commitment, completion of assessments and good understanding of the teaching profession. It means that further research is needed to investigate the causal factors of stress and how the support systems can be improved within both schools and universities, with a view to reducing first-year education students' stress levels. This is important as it is a stepping stone to the development of better ways to help this group achieve their study and career goals. This research can lead to ways of improving education course completion rates and the skill level and job satisfaction of earlier career teachers.

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