



Evaluating initial teacher education programmes: Perspectives from the Republic of Ireland

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ABSTRACT

Research studies in teacher education have focussed on the outcomes of preparatory programmes. Less attention has been paid to the processes through which professional learning is acquired. This article argues that the study of attitudes and persuasion is very important in teacher education. The elaboration likelihood model (ELM) of persuasion provides an integrative framework to analyze empirical evidence from a five-year study, conducted in the Republic of Ireland, which presents findings from an in-depth survey of 2348 respondents. This model highlights many salient issues that teacher educators should consider when engaged in programme development, delivery and evaluation.

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1. Introduction

Initial teacher education is an area that has generated considerable debate in both academic and policy contexts. Research studies have tended to focus on the issues of quality; relevance; what student teachers should know and be able to do; and, the role that initial teacher education plays over the continuum of professional learning. The focussing on the outcomes of teacher education programmes cannot, of itself, provide the insights necessary for the development and improvement of such programmes. Few studies attend to the processes through which professional learning is acquired within teacher education programmes.

Many authors have suggested that student teacher learning does not happen as a result of being taught educational theories, and does not result from the 'serial learning of concepts on a scale of growing complexity' (Korthagen, 2010, p. 99). The challenge for teacher educators, therefore, is to evaluate their programmes to collect and study meaningful data capable of exploring these issues, and informing programme improvement (Metzler & Blakenship, 2008).

The study of attitudes and persuasion is important in many social contexts including teacher education. Attitudes affect the way individuals think and act in relation to their environment and

are integral to all forms of inter-personal interaction (Bratt, 1987). Current research on persuasion, broadly defined as change in attitudes or beliefs based on information received from others, advances the hypothesis that individuals process messages carefully whenever they are motivated to do so (Rashotte, 2006). One contemporary theory of attitude change is the elaboration likelihood (ELM) model of persuasion developed by Petty and Cacioppo (1981, 1986).

According to Petty and Cacioppo (1981), there are two distinct routes of information processing that lead to attitude change, the central processing route and the peripheral route. The differences between these routes relate to the extent that attitude change is due to active, focussed thinking about information (Cacioppo & Petty, 1984, p. 673). In central route processing, individuals engage in direct thinking about issue-relevant information. Individuals must be able and motivated to think about and scrutinize the merits of recommendations suggested and this active thinking will determine the direction and amount of attitude change produced. According to the ELM, when a person carefully considers how the presented information bears on the recommended attitude or behaviour, the new attitude is more likely to be integrated into a belief system, that has the potential to influence behaviour over a wide range of relevant situations (Cacioppo & Petty, 1984, p. 673). At the higher end of the ELM the resultant attitude is expected to be 'relatively predictive' of subsequent behaviour (Cacioppo & Petty, 1984, p. 673).

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Peripheral route processing on the other hand, does not involve any focussed thinking about the attributes of the issue or object under consideration. Rather, peripheral cues play the key role in attitude change. These cues allow an individual to evaluate a message or decide what attitudinal position to adopt without engaging in any extensive thought process. The peripheral route will be adopted when motivation and ability to process is low (Cacioppo, Petty, & Stoltenberg, 1985; Petty & Cacioppo, 1981). Change occurring via the peripheral route is less enduring and less predictive of subsequent behaviour (Cialdini, Petty, & Cacioppo, 1981; Petty & Cacioppo, 1981).

Within the ELM the central and peripheral routes of processing are not presented as being mutually exclusive. Individuals are not viewed as being universally thoughtful in evaluating a message nor universally mindless (Petty & Cacioppo, 1984). Rather, the hypothesis on which the ELM is based, suggests that the amount and nature of issue-relevant thinking that people are willing or able to engage in, is dependent upon factors within the individual and the situation (Petty & Cacioppo, 1984). The model provides an integrative framework for understanding the specific processes by which source, message, recipient, channel, and context variables have an impact on attitude change (Petty & Cacioppo, 1981, 1986). It specifies certain roles that a variable can play in the persuasion process and provides a useful conceptual lens to analyze the structural and pedagogical approaches used in initial teacher education programmes.

Tillema (1994) concluded that any new knowledge presented, will only be utilized and considered relevant if it fulfils certain conditions, in that, it must be plausible, intelligible and fruitful. In order for student teachers to learn anything during teacher education they must have personalized concerns about teaching or have encountered real problems. According to Joyce and Showers (1988), even when there are such personal goals, because the student teacher has developed individualized concerns, general theories will only be seen as helpful if there is some element of coaching of the student in connecting the theory to their actions in the classroom.

Carlson (1999) suggested that many initial teacher education programmes comprise of a theory-to-practice model where the university articulates the theory, methods and skills; the schools provide the setting in which that knowledge is practised; and the beginning teacher provides the individual effort to apply such knowledge. Barone, Berliner, Blanchard, Casanova, and McGowan (1996) argued that many initial teacher education programs consist of a collection of separated courses in which theory is presented without much connection to practice. Tom (1997) spoke of an assembly-line model. Ben-Peretz (1995) concluded that the hidden curriculum of initial teacher education tends to communicate a fragmented view of knowledge, both in coursework and in field experiences. Moreover, knowledge is a given and unproblematic. Brouwer and Korthagen (2005) concluded that the structure of initial teacher education programs may indeed be counter-productive to student teacher learning, and teacher educators themselves may not display the best examples of good teaching.

This paper argues that as teacher educators seek to encourage behavioural or attitudinal change, they are often engaged in persuasive attempts. The changes that initial teacher education programmes strive to produce should promote and elicit effortful processing of persuasive messages by student teachers. The question, for teacher educators therefore, becomes what factors both within the individual student teacher and within the programme influence elaboration likelihood? Studies of graduates' perceptions about their initial teacher education programmes have highlighted a number of these issues.

2. Graduates' perceptions of their initial teacher education programmes

Many studies have concluded that the effects of teacher education on the actual practices of teachers are generally meagre (Brouwer & Korthagen, 2005). Lortie (1975) addressed the dominant role of practice in shaping teacher development. Zeichner and Tabachnick (1981) argued that educational ideas developed during initial teacher education are "washed out" during practice placement. Comparable findings were reported in a review by Veenman (1984), which also pointed to the challenges teachers experienced once they had left initial teacher education. Similar indications of a lack of transfer, from initial teacher education to practice have emerged in studies conducted by Feiman-Nemser (1990) and Wideen, Mayer-Smith, and Moon (1998). These studies concluded that new teachers did not feel sufficiently prepared by their teacher educators and came to see school-based colleagues as the ones who know how to go about teaching (Brouwer & Korthagen, 2005). Flores and Day (2006) point to the influence of the school context and the personal background experiences during initial teacher education as important variables to be taken into account when considering early teaching experiences. Some of the socializing influences identified in the literature include, the influence of significant others namely, relatives and former teachers (Zeichner & Gore, 1990).

In the European context teachers have indicated that their actual learning happened 'on the job', in the practice of working with pupils (Sohlberg et al., 2007) rather than as a result of their experience of formal initial teacher education. Flores and Day (2006) found that reflecting upon their experiences as student teachers at university, the majority of the teachers spoke of the inadequate preparation provided to them in order to deal with the complex and demanding nature of their daily job in schools and in classrooms. They also found that student teachers had experienced both inner and practical tensions between the awareness of the 'pedagogical theories' learned at university and the management of the complex and demanding reality of the classroom (Flores & Day, 2006). Some studies suggest that many student teachers adopt strategies that comply with their supervisors' personal perspectives on how to teach, 'adapting strategically' (Vonk, 1993) to the situational and institutional constraints of their role. Other studies suggest, that advice from academic advisors, unlike that of their supervisors, has not been rated highly by graduates of teacher education programmes (Thomas & Loadman, 2001). Gender differences in studies of initial teacher education programmes have emerged as a factor in students' assessments of their programmes; females tending to rate their experiences of the programmes more highly than their male colleagues (Loadman, Freeman, Brookart, Rahaman, & McCague, 1999). In some studies student teachers expressed a desire to acquire more knowledge in certain areas. Jegede and Taplin (2000) found that student teachers identified several areas, which they desired to know more particularly in relation to the knowledge of theories of teaching and their use in the classroom.

3. Teacher education in the Republic of Ireland

The Republic of Ireland unlike many countries has no difficulty in recruiting teacher education students at all levels of the education system. Student teachers in Ireland are academically high achievers, which is not typical internationally (Killeavy & Moore, 2001). In the first level sector in Ireland, which serves 505,998 students and comprises 3295 primary schools including 130 special schools, 31,709 full-time equivalent teaching posts are provided. At second level there are secondary, vocational, comprehensive

schools and community schools and colleges. The student enrolment at second level is 313,136 attending 739 publicly aided schools, which include 384 secondary, 254 vocational, 78 community schools, 14 comprehensive schools and 9 aided by other Departments (Agriculture and Defence). There are 25,803 full-time equivalent teaching posts in second-level institutions (DES, 2011a).

The pre-dominant model of pre-service primary teacher education is the concurrent model in which students follow the Bachelor of Education (B.Ed.) degree programme, which is delivered by Colleges of Education. At present in Ireland, second-level teacher education is provided in the form of both concurrent and consecutive programmes. The concurrent model in which academic subjects are studied alongside educational and professional studies leads to a post-primary teaching qualification in such subjects as physical education, religion, science, music, home economics, art and construction studies. Students undertaking these courses follow a four-year joint academic subject and education degree programme worth 240 ECTS (Drudy, 2004). The main model for secondary teachers is the consecutive model, in which students follow a one-year academic programme of professional training in pedagogy and teaching leading to a diploma in education worth 60 ECTS. Graduates undertaking this programme have first completed a primary degree in a discipline related to the subjects, from the post-primary school curriculum (Drudy, 2004). From September 2012 this programme will be known as the Professional Diploma in Education. According to a decision by the Minister for Education, the length of all programmes for teachers at both first and second levels will be extended by one year from 2014 (DES, 2011b).

With respect to consecutive teacher education programmes, there are currently 16 programmes offered in ten higher education institutions which are at postgraduate level and recognized by the Teaching Council of Ireland (<http://www.teachingcouncil.ie>). Teacher education at pre-service level has been a policy focus for many years in the Republic of Ireland. To date education departments have enjoyed significant autonomy in relation to syllabi and curricula (Dupont & Sugrue, 2007). Since 1926 the consecutive programmes have adopted the traditional approach to teacher education where educational disciplines are at the centre (Coolahan, 2004).

While many reports focus on the issue of quality teacher education and what students should know (Conway, Murphy, Rath, & Hall, 2009), no major study to date in the Republic of Ireland has investigated the attitudes and views of student teachers about the programmes that they have undertaken. The findings reported in this article come from the first major Irish study investigating this area. The resultant picture is a complex one that raises many questions for teacher educators who wish to develop, deliver and evaluate their programmes.

4. Research context

This five-year study (2001–2006) has engaged with pre-service teachers across five consecutive teacher education programmes in the Republic of Ireland. In each of the five programmes there is an emphasis on the preparation of student teachers to teach diverse groups of students in the 12–18 year age group. A number of components are common to all of the programmes in the study which include: education studies; academic-subject studies; subject methodologies and teaching practice. The programme descriptions indicate that they aim to develop in students a knowledge and appreciation of the discipline of education; a sense of the broad context of Irish education as part of society as a whole; an appreciation of the complicated nature of the teacher's role and of the function[s] of schools in society; a knowledge of a range of models of instruction, with the ability to choose between

them and to apply them in classrooms, laboratories and elsewhere; and an ability and willingness to act as reflective practitioners, adopting critical insights into practice as appropriate.

Student teachers are free to select any type of school that they wish and they remain in the particular school for the total duration of their practice placement. The students start teaching at the beginning of the school year in September and continue right through to the end of the school year in late May. They are expected to teach a minimum of 100 h under supervision. In addition they are expected to prepare schemes of work and lesson plans for their subjects, which is included in a compulsory professional development portfolio. Student teachers are supported in practical teaching placements and each student is allocated a professional practice placement supervisor who conducts a number of assessed visits during the academic year. Within the school context most student teachers are assigned to one or two 'co-operating teachers' for the duration of their placement at a school. These are usually the teacher(s) of the main class groups that the student teacher would teach or a well-established member of the school staff who is responsible for professional development issues more generally in the school. These teachers are appointed by the Principal in each school independently of the University departments and they receive no remuneration for their role.

In each of the programmes student teachers are advised to engage in a period of observation prior to taking classes themselves. Tutorial sessions throughout the year aim to facilitate the development of critical reflective thinking, and contribute to the integration of theory and practice. University based tutors also visit student teachers on practice placement. The programmes are staffed by a combination of full-time and part-time tutors and lecturers, the latter typically are current or recently retired teachers who have extensive classroom experience. Continuous assessment is the pre-dominant approach in all of the programmes under study.

4.1. Methods

This study employed a mixed survey instrument which contained both closed-ended and open-ended items. This is labelled as intra-method mixing (Johnson & Turner, 2003) and facilitates within method triangulation (Denzin, 1970). Combining closed-ended and open-ended items has the potential to capture the benefits of both quantitative and qualitative data collection and analysis (Erickson & Kaplan, 2000) and as Greene, Caracelli, and Graham (1989) explained, two different types of data can provide valid evidence by seeking corroboration enhancing the integrity of findings. Qualitative text data in the form of brief, open-ended survey responses provide the opportunity to gather new information about an experience or topic. It can clarify quantitative findings, exploring different dimensions of respondents' experiences (Sproull, 1988). The approach can provide a rich description of respondent reality. It can capture diversity in responses and provide alternative explanations to those that closed-ended survey questions are able to capture (Miles & Huberman, 1994; Pothas, Andries, & DeWet, 2001; Tashakkori & Teddlie, 1998).

4.2. Data collection and analysis

In the first year (2001–2002), a pilot study was completed with students from three institutions providing an available sample of 490 respondents to which 275 student teachers responded yielding a response rate of 56 per cent. After resolving issues that arose with the survey from the pilot, the researchers broadened the study to include two other providers. The study collected in-depth survey data from 2348 PGDE students in order to identify patterns across

the full sample. Research instruments were informed by a systematic review of the literature in teacher education. Data were generated via a self-completion questionnaire. The instrument sought to collect:

- biographical and demographic data about the students
- their perceptions, attitudes and experience of the programme that they were in process of completing

A total of 3720 PGDE students who had participated in the five programmes during the period 2002–2006 were identified in the sampling frame and surveyed; 2348 responded, giving a response rate of 63 per cent. Respondents completed the questionnaire at the end of their programme. In total, 2244 usable responses for analysis were received in the returned questionnaires. All five programme providers offered a broadly similar programme in terms of disciplines, teaching practice and subject methodologies.

Permission to reproduce and use the questionnaire was granted by each of the programme providers. Ethical approval was received from each of the five institutions participating in the study. Due to the procedures adopted by the universities in this study, direct access was not permitted to student contact and record details, thereby ensuring respondent anonymity. Consent to participate was indicated on the questionnaire which allowed each respondent to indicate their agreement as participants in the study.

4.2.1. Quantitative data: survey questionnaire

Data obtained were analyzed using the Statistical Package for the Social Sciences (SPSS version 15.0). Descriptive statistics were used to summarize demographic data and the results from the questionnaire. Correspondence analysis, which can be used with frequency data, with percentages, with data in the form of ratings and with heterogeneous datasets was used to establish the profiles and was selected due to its versatility (Greenacre, 1993).

4.2.2. Qualitative data: survey questionnaire

The qualitative responses were measured in terms of response rate, number of comments, and thematic content of comments as it related to the student teachers' perceptions of their programme. The open-ended questions were presented to elicit student teachers' attitudes concerning (a) the type of tasks or assignments they found most challenging and why (b) what or who were the main sources of guidance in their teaching and (c) if they could redesign the PGDE programme, what would be the main changes they would make.

The content analysis in this study identified a comment as the minimum size of a recordable unit. Krippendorff (2004) described recordable units as "units that are distinguished for separate description... and coding" (p. 100). The responses to the open-ended questions were coded and content analyzed using guidelines for analyzing qualitative data (Miles & Huberman, 1994).

The primary researchers identified major themes, developed an initial set of themes, and examined the theme categories for consistency in meaning and context. These were iteratively refined using the constant comparison method (Krippendorff, 2004). The categorization of comments by theme was conducted separately and blindly, by the primary researchers and an outside researcher familiar with content analysis. Several main areas emerged from the content analysis, to include the challenging aspects of academic and practical tasks within the programme, sources of guidance while undertaking the programme, and their ideas about restructuring the programme. Those occurring with greatest frequency are presented in Tables 6–8.

The findings of the study are presented in two parts to ensure clarity between the often over-lapping areas involved. In Part 1, the

findings of the statistical analyses are outlined, which presents the demographic profile of the respondents, their views about the appropriateness of the programme, the extent to which the programme had met their initial expectations, aspects of the programme that proved challenging and the main sources of support that they received. In Part 2, the qualitative analyses are presented which reports their views about the challenging academic, practical and reflective tasks within the programme, and their ideas about restructuring the programme. These findings are discussed using the ELM theory as a conceptual lens and with reference to relevant research in the area. The implications for teacher education are then presented.

5. Part 1

5.1. Results

5.1.1. The age, gender and degree profiles of the cohort and patterns of association between these variables

The age group and gender profiles of the graduates who surveyed are outlined in Table 1.

The majority of respondents were under 25 years and were female. This is not surprising as most graduates entering the consecutive model of teacher education programmes do so either immediately or soon after their graduation. The gender balance of the cohort is consistent throughout the universities in question and is also similar to the trend internationally (Drudy, Martin, Woods, & O'Flynn, 2005). More than half of the respondents had a Bachelor of Arts degree, followed by Commerce/Business degrees and Science degrees. Table 2 illustrates the data.

A significant association between gender and type of degree, ($\chi^2 = 32.998$, $df=13$, $p=.002$) was identified, more males than females had science degrees and more females than males had Commerce or Business degrees. This data also reveals that males with Science degrees, who chose teaching tended to be mature students who had either continued their education to acquire postgraduate degrees or who had been employed in other areas before opting for teaching as a career. A significant association between age range and degree subject area ($\chi^2 = 71.995$, $df=39$, $p=.001$) was also identified. Group 4 comprising those of 40 years and over had the highest percentage of respondents who had Arts degrees. Group 1 comprising those under 25 years had the highest percentage of respondents with degrees in Business related areas. Group 2 comprising those aged between 25 and under 30 years had the highest percentage of respondents with Science degrees.

Data concerning degree classification or grade is outlined in Table 3 and a more detailed analysis of the relationship between age range and degree grade attained is presented in the accompanying Fig. 1.

The majority of respondents (73%) held second-class honours degrees and over one fifth presented with first-class honours degrees. There was a significant association between gender and

Table 1
Gender and age profiles of respondents ($n = 2035$).

	% of Respondents	No. of respondents	Age range of respondents	% of Age group	No. of respondents
Males	26%	($n = 482$)	Under 25 yrs 25 but under 30 yrs	58%	($n = 1275$)
Females	75%	($n = 1553$)	30 but under 40 yrs 40 yrs and over	48%	($n = 228$)
				57%	($n = 91$)

Table 2
Degree profiles of respondents differentiated by gender and age range ($n = 1202$).

Area of degree	Total %	Gender %	Age range	% of Age group
Arts/humanities ($n = 656$)	55%	Males	Under 25 yrs	53%
			25 but under 30 yrs	52%
		Females	30 but under 40 yrs	53%
			40 yrs and over	70%
Commerce/business ($n = 223$)	18%	Males	Under 25 yrs	23%
			25 but under 30 yrs	12%
		Females	30 but under 40 yrs	12%
			40 yrs and over	16%
Science ($n = 213$)	18%	Males	Under 25 yrs	15%
			25 but under 30 yrs	26%
		Females	30 but under 40 yrs	24%
			40 yrs and over	5%
Other ($n = 110$)	9%	Males	Under 25 yrs	9%
			25 but under 30 yrs	10%
		Females	30 but under 40 yrs	11%
			40 yrs and over	9%

degree result attained ($\chi^2 = 12.37$, $df = 3$, $p = .006$) with more females than males entering teacher education with second-class honours degrees. A significant association between age range and standard of grade achieved ($\chi^2 = 23.781$, $df = 12$, $p = .020$) was also identified with Group 4 comprising those aged 40 years and over, presenting with the highest percentage of first-class honours degrees when compared to other age groups. Fig. 1 presents the χ^2 significance value displaying the relationship between age range and grade attained. Dimension 1 accounts for 51.8% of the χ^2 significance value and Dimension 2 accounts for 39.7% of the χ^2 significance value.

5.1.2. Students teachers' perceptions, experiences and assessments of their professional education programme

Patterns of respondents' assessments on the appropriateness of their pre-service teacher education programmes differentiated by gender and age are presented in Table 4 (total $n = 2223$ for this table). A more detailed analysis of the relationship between age range and perceived appropriateness of the programme is presented in the accompanying Fig. 2. Twenty two per cent of those who responded to this question considered the programme to be mainly appropriate, and fifty five per cent considered it somewhat appropriate, and twenty two per cent considered it to be somewhat or mainly inappropriate.

A significant association between gender and respondents' views concerning the appropriateness of the programme

Table 3
Degree classification of respondents differentiated by gender and age range ($n = 1222$).

Degree classification	Total %	Gender %	Age range	% of Age group
First-class honours ($n = 277$)	23%	Males	Under 25 yrs	23%
			25 but under 30 yrs	22%
		Females	30 but under 40 yrs	21%
			40 yrs and over	27%
Second-class honours ($n = 889$)	73%	Males	Under 25 yrs	74%
			25 but under 30 yrs	71%
		Females	30 but under 40 yrs	71%
			40 yrs and over	69%
Third class honours and pass degrees ($n = 56$)	4%	Males	Under 25 yrs	3%
			25 but under 30 yrs	7%
		Females	30 but under 40 yrs	8%
			40 yrs and over	4%

($\chi^2 = 12.823$, $df = 3$, $p = .005$) was identified in the analysis. A higher percentage of females considered the content to be mainly or somewhat appropriate compared to males who tended to agree with the view that the programme was inappropriate. There was also a significant association between age group and perceived inappropriateness of the programme ($\chi^2 = 39.120$, $df = 12$, $p = .000$). Those aged 25 but under 30 years considered the content of the programme to be somewhat appropriate compared to the other age groups. Fig. 2 presents the χ^2 significance values displaying the relationship between age range and perceived appropriateness of the programme. The χ^2 significance value displaying the relationship between age range and perceived appropriateness of the programme. Dimension 1 accounts for 86.7% of the χ^2 significance value and Dimension 2 accounts for 9.5% of the χ^2 significance value.

Respondents' assessments of the extent to which their pre-service teacher education programme met their initial expectations differentiated by gender and age are outlined in Table 5 and a more detailed analysis of the relationship between these variables is presented in the accompanying Fig. 3.

There was a significant association between gender and the perception of the cohort as to the extent to which their teacher education programme met their initial expectations ($\chi^2 = 8.620$, $df = 3$, $p = .035$). Females had higher levels of agreement with the view that the programme was quite far from their initial expectations. There was also a significant association with age ($\chi^2 = 34.896$, $df = 12$, $p = .000$). Those aged 25 but under 30 years had higher levels of agreement (35%) than other age groups with the view that the programme was quite far from their initial expectations. In Fig. 3 the χ^2 significance value displaying the relationship between age range and programme meeting initial expectations is illustrated. Dimension 1 accounts for 84.6% of the χ^2 significance value and Dimension 2 accounts for 9.9% of the χ^2 significance value. Respondents' assessments of the extent of the challenges posed by major aspects of the programme differentiated by gender and age are illustrated in Table 6.

Forty per cent of those who responded to this question found the academic tasks most challenging followed by the practical tasks. The academic tasks included writing essays and completing subject methodology assignments. The practical tasks included the school context, supervision process and writing lesson plans. There was a significant association between gender and challenging tasks ($\chi^2 = 11.119$, $df = 3$, $p = .010$). Females indicated that they found both the academic and reflection elements of the programme more challenging than their male colleagues. There was no significant association between age group and finding tasks challenging ($\chi^2 = 8.271$, $df = 12$, $p = .764$).

An outline of respondents' views of the sources of guidance they experienced during the course differentiated by gender and age is presented in Table 7 and a more detailed analysis of this data is presented in the accompanying Fig. 4.

The main source of guidance for respondents was the support received from their co-operating teacher and from other teachers in their school (32%). Seventeen per cent of the cohort identified other sources of guidance including previous teachers, friends, previous teaching experience and the Internet. Fourteen per cent of the cohort considered their practice placement supervisor while 7% suggested their college lecturers as their main source of guidance. There was a significant association between gender and sources of guidance ($\chi^2 = 17.413$, $df = 7$, $p = .015$). Males indicated higher percentage agreement levels with securing support from co-operating and other teachers in schools (41%) and other sources (22%). Females on the other hand tended to seek guidance from other PGDE students taking the programme (14%) and from their supervisor (14%). A significant relationship between age group and

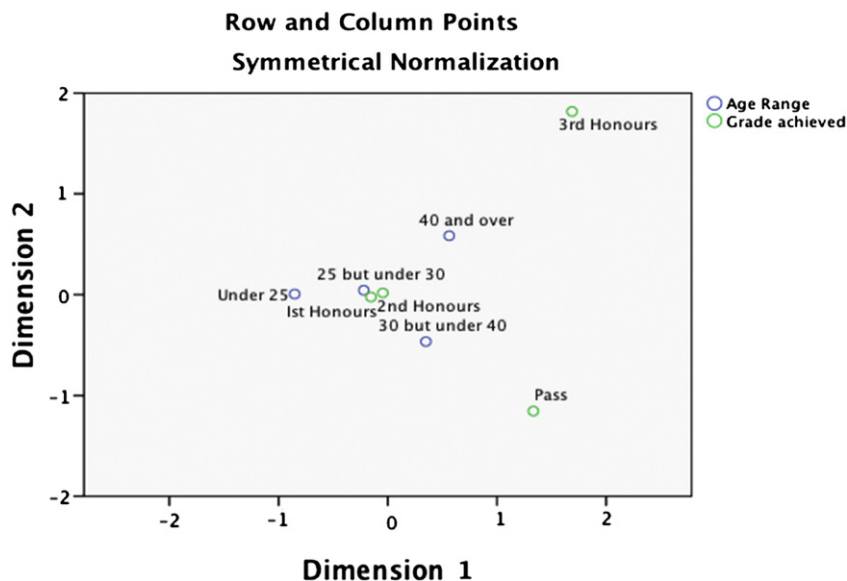


Fig. 1. The χ^2 significance value displaying the relationship between age range and grade attained. Dimension 1 accounts for 51.8% of the χ^2 significance value and Dimension 2 accounts for 39.7% of the χ^2 significance value.¹

sources of guidance in teaching ($\chi^2 = 33.675$, $df=21$, $p = .039$) was also identified. Those aged less than 25 years indicated that they received most guidance from co-operating teachers and family compared to other age groups. Equally they indicated that they did not receive guidance in their teaching from supervisors, special methodology lectures or from other sources. Those aged 25 years but less than 30 years indicated that they received guidance from other PGDE students on the course compared to other age groups. Those aged 40 years and over indicated that they received most guidance from college lecturers, subject methodology lecturers and other sources. The χ^2 significance value is illustrated in Fig. 4. Dimension 1 accounts for 66.8% of the χ^2 significance value and Dimension 2 accounts for 26.7% of the χ^2 significance value.

The views of the cohort on the content and design of their professional education programme differentiated by gender and age is presented in Table 8.

The majority of respondents who answered the question indicated that the structure of the programme should be redesigned (63%) as opposed to redesigning the content (37%). There was no significant association between either gender or age range and

views on necessity of redesigning the programme ($\chi^2 = 1.145$, $df=2$, $p = .564$) and ($\chi^2 = 10.409$, $df=8$, $p = .238$) respectively.

6. Part 2

The following areas are addressed in this section, respondents' views about the challenging academic, and practical tasks within the programme and their ideas about restructuring the programme.

6.1. Academic aspects of the programme

The level of challenge experienced in the academic areas of the programme varied considerably and this was due mainly to the undergraduate experiences of students, in particular to their familiarity in completing writing assignments. One respondent commented, "I haven't written an essay since 1992 (Leaving Certificate). I'm a Science graduate [and I] found it difficult to structure". This was a common experience, not only of Science students but also of others from outside the Arts/Humanities areas. As another student explained, [some of us are] "not used to writing essays [we] come from a project based degree". Certainly, academic assignments caused problems for such students. One complained that the 2000-word essay was "the worst and first (respondent emphasis) time I ever experienced". Mature students also found essay writing to be a daunting task. "As a mature student, [it has been] 14 years since my primary and my lack of experience in writing essays... conflicts with my desire to do well and high expectations of myself".

The study of the disciplines of Education also caused problems for students for whom such areas of study were unfamiliar. Students' opinions were characterized by such remarks as "Dealing with new subjects – philosophy, sociology etc.[as I] had no prior experience of these and found it very hard to understand the concepts involved". At times dissatisfaction was expressed concerning the relevance of these subjects. As one student commented "Researching material unfamiliar... ie. Philosophy, Psychology and having to evaluate it, some of it which I find irrelevant to the course altogether". At times a certain polarization of views between the concerns of the Arts and Science areas became evident. This was particularly evident in concerns about essay type assignments.

¹ Correspondence analysis (hereafter CA) is an inductive method that employs graphical display and geometric interpretation. The purpose is to explore the bare structure of the data. The method is very usable for the social sciences because it can analyze categorical variables and does not make any distributional assumptions. CA is based on Pearson chi-square (χ^2) statistic, which is commonly used to assess the significance between row and column variables in contingency tables. However, χ^2 statistic is interpreted in geometric terms for the purpose of CA. The frequencies in the contingency table are first transformed into proportions in order to obtain row profiles and masses for the categories of row variables and column profiles and masses for the categories of column variables. Each profile is composed of the elements (categories), which constitute a co-ordinate for the vector point that may be represented in a multidimensional space. The averages of profiles are centroids that are placed in the origin of principle axes (dimensions). Thus CA is an effective tool for making distinctions between social units of interests and their position regards the distribution of pertinent properties. The eigenvalues are calculated so that the first dimension explains the most variance. The contribution of points to the inertia of dimensions provides crucial information about how much each point has determined the direction of each dimension. The points with large contributions are the most important to the dimension concerned (Sohlberg et al., 2007, Appendix C; Clausen, 1998). This is represented in each of the figures used in this paper.

Table 4Respondents' assessments of the appropriateness of their pre-service teacher education programmes differentiated by gender and age ($n = 2225$).

Assessment of programme	Total % agreement	Gender	% Agreement	Age range	% Agreement
Mainly appropriate ($n = 480$)	22%	Males Females	21% 23%	Under 25 yrs	38%
				25 but under 30 yrs	23%
				30 but under 40 yrs	36%
				40 yrs and over	28%
Somewhat appropriate ($n = 1231$)	55%	Males Females	54% 57%	Under 25 yrs	58%
				25 but under 30 yrs	53%
				30 but under 40 yrs	48%
				40 yrs and over	57%
Somewhat inappropriate ($n = 299$)	13%	Males Females	13% 13%	Under 25 yrs	13%
				25 but under 30 yrs	15%
				30 but under 40 yrs	9%
				40 yrs and over	10%
Mainly inappropriate ($n = 194$)	9%	Males Females	12% 7%	Under 25 yrs	9%
				25 but under 30 yrs	9%
				30 but under 40 yrs	7%
				40 yrs and over	5%
No opinion ($n = 21$)	1%				

Students commented “being corrected on the basis of grammar, punctuation etc. Not relevant to the discipline of subjects I will teach”. However, this tended to be a minority view. A more generally held view is characterized in the remarks of another respondent who found the first essay particularly difficult. This was “because it was assigned at a very early stage when we were still finding our feet in the school so [I] felt I could not really engage with some of the issues in [the] essay very well due to lack of experience”.

6.2. Practical aspects of the programme

Teaching practice posed challenges particularly in relation to the initial stages, planning and preparation, teaching skills, discipline and classroom management, and the supervision process itself. Many students experienced difficulty in “going into the classroom [because] I had no previous teaching experience I had not been in a classroom since my own school days and I felt very nervous”.

A number of students recounted that they had been under considerable stress at the beginning of the year in spite of their career motivation “starting to teach for the first time, even though I wanted to do it was very nerve wrecking”. Students were aware of the importance of “making a good start” in their first few weeks in the classroom. “The initial taking of the classes, meeting with the student, the first month or so, to establish myself and gain confidence”.

6.2.1. Supervision of teaching practice

The supervision of teaching practice was found to be stressful for many respondents, “I... found the supervision quite stressful as it is hard to be yourself in a class when there is another adult in the room”. This was compounded by the fact that different supervisors required different approaches from students. “Different supervisors expect different things so its hard to know exactly how you should be teaching eg. Should I use a text book at all in a class?” Students receiving unannounced visits felt that these visits were a source of

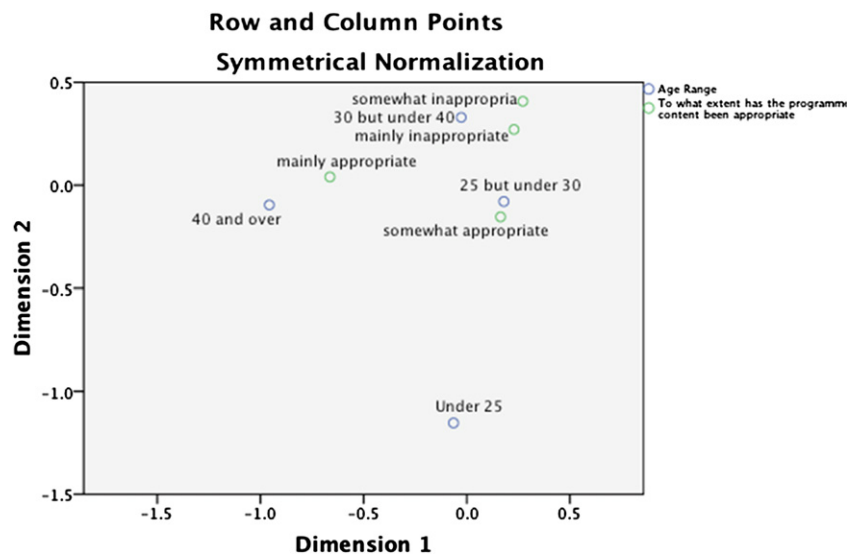


Fig. 2. The χ^2 significance value displaying the relationship between age range and perceived appropriateness of the programme. Dimension 1 accounts for 86.7% of the χ^2 significance value and Dimension 2 accounts for 9.5% of the χ^2 significance value.

Table 5

Respondents' assessments of the extent to which their pre-service teacher education programme met their initial expectations differentiated by gender and age (total $n = 2153$).

Initial expectations (IEs)	Total %	Gender	%	Age range	% of Age group
Very close to IEs	9% ($n = 109$)	Males	8%	Under 25 yrs	6%
			9%	25 but under 30 yrs	10%
		Females	15%	30 but under 40 yrs	15%
			15%	40 yrs and over	15%
Quite close to IEs	46% ($n = 1029$)	Males	50%	Under 25 yrs	49%
			47%	25 but under 30 yrs	46%
		Females	51%	30 but under 40 yrs	51%
			42%	40 yrs and over	42%
Quite far from IEs	32% ($n = 706$)	Males	29%	Under 25 yrs	34%
			35%	25 but under 30 yrs	35%
		Females	25%	30 but under 40 yrs	25%
			31%	40 yrs and over	31%
Very far from IEs	10% ($n = 232$)	Males	13%	Under 25 yrs	11%
			9%	25 but under 30 yrs	9%
		Females	9%	30 but under 40 yrs	9%
			12%	40 yrs and over	12%
No response ^a	3% ($n = 77$)				

^a Respondents answered these questions individually.

constant pressure. "I have to say that thus far, not including exams, I have felt supervisions to be very stressful as not knowing when one might expect a visit in either subject had me constantly under pressure". Another student reported that not knowing when a supervisor might arrive had a negative impact on teaching performance. "Its hard to be continuously creative with the pressure hanging over you that a Supervisor could arrive". The advisory session following the supervised lesson was also noted as a problem for some students. "After inspection conference, I was put in an awkward position of being criticised while being too tired to justify [my] actions".

6.2.2. Classroom management and discipline

The issue of classroom management and discipline was of major concern to respondents, and there was a general feeling that

students were not adequately prepared to deal with discipline problems generally by their PGDE programme. Many students were of the opinion that "no one at college could tell you how to deal with discipline problems in their class". This was compounded by school-based problems experienced by certain students. This type of situation is characterized by the comment of one student who reported that "a poor discipline system in the school led to a lot of personal dilemmas and debates with particular students". Those students who experienced serious challenges in this area indicated that their course did not provide any real support to help them deal with the situation. They reported that there was "no real solutions as how to deal with disruptive students [we] feel that some do not really understand the problems in some schools".

6.2.3. Planning and preparation for teaching

Students expressed considerable dissatisfaction with the form of lesson planning and preparation demanded by the PGDE programme. The first complaint expressed concerned the lack of adequate guidance characterized by the view of one respondent who emphasized that students were expected to produce "plans with very little guidance" this comment was underlined by the remark "I still have not seen the 'lesson plan to die for!'" Certainly some responses are indicative of a lack of understanding of the purpose and value of the exercise. "Writing lesson (respondent emphasis) plans ie. what and how I would teach something. I don't know (respondent emphasis) why-it just was hard to think and then just write (respondent emphasis) about it. I think I prefer to do (respondent emphasis) first and then (respondent emphasis) write about it". A major problem with the form of lesson plans demanded was the time consuming nature of the process. "Lesson planning-evaluations time consuming and lengthy when half lines would suffice, but need to be detailed for supervisor visits". It was suggested that the length of lesson plans should be decreased as the year progressed "I think they shouldn't continue all year, they are good at the start but when we have such a big workload it's very difficult". Students did not view preparation as a support in solving some of the problems they encountered in classroom teaching. "I had previously taught for two years in the same school and as a result I was used to my own routine, while I always planned lessons in those two years I never had to rigidly stick with them". This student went on to

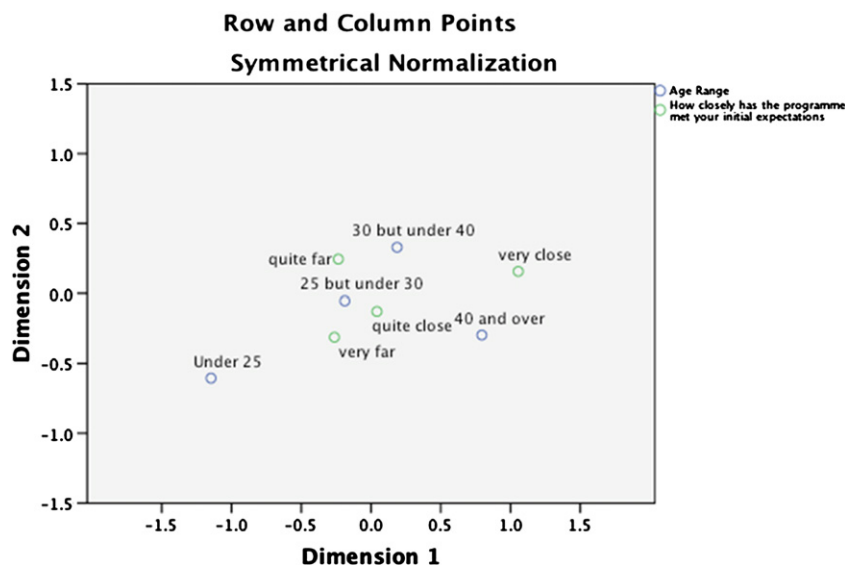


Fig. 3. The χ^2 significance value displaying the relationship between age range and programme meeting initial expectations. *Dimension 1 accounts for 84.6% of the χ^2 significance value and Dimension 2 accounts for 9.9% of the χ^2 significance value.

Table 6

Respondents' perceptions of the extent of the challenge posed by three major types of task within the PGDE programme differentiated by gender and age (total $n = 1663$).

Type of task	Total %	Gender	%	Age range	% of Age group
Practical ($n = 441$)	27%	Males	30%	Under 25 yrs	34%
		Females	24%	25 but under 30 yrs	25%
				30 but under 40 yrs	27%
				40 yrs and over	33%
Reflection ($n = 280$)	17%	Males	15%	Under 25 yrs	26%
		Females	18%	25 but under 30 yrs	19%
				30 but under 40 yrs	15%
				40 yrs and over	17%
Academic ($n = 676$)	40%	Males	36%	Under 25 yrs	43%
		Females	45%	25 but under 30 yrs	44%
				30 but under 40 yrs	25%
				40 yrs and over	41%
Other ($n = 266$)	16%	Males	19%	Under 25 yrs	15%
		Females	13%	25 but under 30 yrs	12%
				30 but under 40 yrs	18%
				40 yrs and over	9%

say "I found myself under pressure to stick with lesson plans when the supervisor was in which I felt put me off slightly". Another student discussed the problem of "trying to maintain the flow and pace of the lessons" but did not see greater attention to preparation as having

Table 7

Respondents' identification of the main source of guidance within the PGDE programme differentiated by gender and age (total $n^a = 3954$).

Source of guidance	Total %	Gender	%	Age range	% of Age group
Co-operating and other teachers in their school ($n = 765$)	32%	Males	41%	Under 25 yrs	58%
		Females	38%	25 but under 30 yrs	39%
				30 but under 40 yrs	42%
				40 yrs and over	34%
Other students on the PGDE course ($n = 413$)	17%	Males	8%	Under 25 yrs	8%
		Females	14%	25 but under 30 yrs	15%
				30 but under 40 yrs	12%
				40 yrs and over	8%
Teaching practice supervisor ($n = 375$)	16%	Males	11%	Under 25 yrs	0%
		Females	14%	25 but under 30 yrs	13%
				30 but under 40 yrs	13%
				40 yrs and over	12%
Course lecturers (academic) ($n = 323$)	14%	Males	6%	Under 25 yrs	0%
		Females	6%	25 but under 30 yrs	5%
				30 but under 40 yrs	5%
				40 yrs and over	11%
Tutor ($n = 1750$)	7%	Males	5%	Under 25 yrs	11%
		Females	6%	25 but under 30 yrs	6%
				30 but under 40 yrs	5%
				40 yrs and over	5%
Course lecturer (teaching subject methodology) ($n = 138$)	6%	Males	5%	Under 25 yrs	0%
		Females	6%	25 but under 30 yrs	5%
				30 but under 40 yrs	6%
				40 yrs and over	10%
Family ($n = 138$)	6%	Males	3%	Under 25 yrs	8%
		Females	2%	25 but under 30 yrs	2%
				30 but under 40 yrs	3%
				40 yrs and over	7%
Other ($n = 52$)	2%	Males	22%	Under 25 yrs	0%
		Females	14%	25 but under 30 yrs	15%
				30 but under 40 yrs	14%
				40 yrs and over	20%

^a Respondents chose a number of categories which accounts for the larger number.

any value in terms of an appropriate solution. Students were of the opinion that lesson plans were necessary to please the visiting supervisors but they were not convinced of their value in supporting their classroom teaching.

6.3. Restructuring the programme

The most prominent complaint of respondents was the unrealistic workload demanded by the programme. As "too much in too little time is expected realistically a general knowledge of all areas involved" can be acquired. Respondents pointed to the unrelenting demands of the course. This is characterized clearly in the statement of one student. "Having to go to school every day and college every evening, with a perfect lesson for school and a clear head for college [and] not getting home until 7 o'clock and leaving the house at 7:30 in the morning". It is clear that respondents found it hard to get the balance between college and school. "Balancing college and school in the one week was difficult. It seemed a never ending cycle and re-adapting to school having been at college and vice versa was tough". Another respondent commented "It is difficult to be a teacher one day and a student the next". Respondents who had caring responsibilities found the course quite demanding. "Evening Lectures – again family pressures made this almost impossible". It also emerged that the programme did not address adequately the needs of those with family responsibilities or who were changing from another career to teaching. Students' comments were characterized by such remarks as "no recognition or accommodation given to mature students of which there are loads (respondent emphasis) re: transition from career or family into teaching".

7. Discussion

The findings from this study from the ELM perspective suggest that teacher educators face a number of challenges with reference to attitudinal change. Central to the model are factors such as source, message, recipient, affect, channel and context which provide a useful lens through which teacher education programmes can be viewed. The data from this study indicate a number of factors that teacher educators must be aware of.

With reference to source, the programmes were located in the university context, were traditional in orientation emphasizing academic aspects such as the disciplines of education, the relationships between society and education and the role of the teacher. It is clear that a number of participants found the academic messages, which focussed on the disciplines of education to be particularly challenging. This is similar to what emerged in the Barone et al. (1996) study. Difficulties also emerged in relation to the practical aspects of the programmes.

The programmes in the study emphasized a range of models of instruction, facilitating student teachers' capacity to choose between these models and apply them appropriately in practice placement yet the respondents found the practical aspects of the programme quite difficult. The emphasis on lesson planning proved to be quite challenging and many complained that they had not received enough guidance in the writing of lesson plans. Further, they considered the planning process to be restrictive and they engaged in such activity merely as a way of meeting the demands of the programme and their supervisor, a finding similar to that reported by Vonk (1993). Participants also found evaluating their lesson plans difficult, which is a key part of the reflective practice promoted on the programme. This suggests that programme participants did not see these issues as being personally relevant to them in their practice placement context.

Understanding the differences between recipients is a very important element of the ELM and equally so for teacher educators.

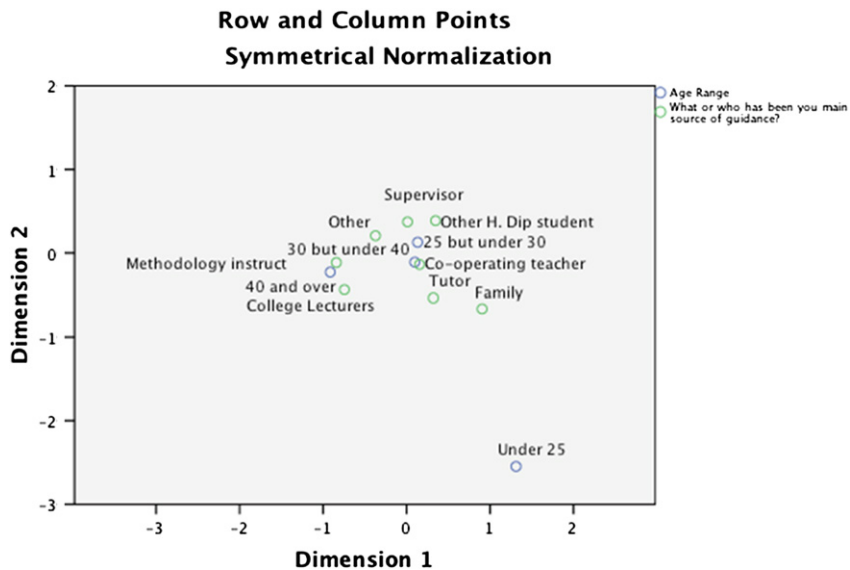


Fig. 4. The χ^2 significance value displaying the relationship between age range and sources of guidance in their teaching. Dimension 1 accounts for 66.8% of the χ^2 significance value and Dimension 2 accounts for 26.7% of the χ^2 significance value.

The high level of academic attainment of those students entering teacher education in the Republic of Ireland was borne out by the findings. The findings presented in this paper necessitate some commentary on gender balance. In overall terms the gender balance of the cohort is similar to what pertains internationally. A higher percentage of females considered the content of the programme to be appropriate which is similar to what emerged in the Loadman et al. (1999) and Loadman and Klecker (1994) studies in the US. However, when the issue was explored in more depth, it emerged that females considered the programme to be quite far from what they had initially expected. They also found both the academic and reflective parts of the programme to be more challenging than their male colleagues. It is clear from these findings that women and men had differing perceptions about their initial teacher education programmes.

This study indicates that the age profile of entrants to post-primary teacher education in Ireland is broad. In relation to programme content it emerged that those under 25 years considered it to be appropriate compared with those in other age groups. For those aged between 25 but under 30 years the programme was very far from their initial expectations. The age difference among participants on initial teacher education programmes is an important factor for teacher educators to consider.

In the ELM the affect of the intervention is very important and this is also the case in initial teacher education. It emerged that participants did not feel adequately prepared to deal with

disruptive behaviour and discipline problems in classrooms by their PGDE programme, similar to what Flores and Day (2006) found in their study. Participants found the supervision process challenging, stressful and the post-lesson conference with the supervisor was viewed as a difficult encounter. The negative impact of prior teaching experience was also considered to be a cause of difficulty in situations when supervisors advised breaking routines that has been established during pre-course teaching experience. It emerged that academic advisors such as, special methodology lecturers, tutors and college lecturers were not rated highly as a source of guidance in their teaching by respondents. This is similar to what Thomas and Loadman (2001) and Goodlad (1990) reported. The main sources of guidance for their teaching were both their co-operating teacher and other teachers in schools, other sources included previous teachers, friends, previous teaching experience, the Internet, students in their classrooms and other PGDE students. It appears that respondents tended to rely on established relationships when looking for guidance about their teaching in many cases. The fact that participants spend from September until the end of the school year in late May suggests that they are very much influenced by the school context similar to what Wideen et al. (1998) found in their study.

However, there were noticeable differences among participants in relation to source of guidance. When it came to looking for support and guidance in their teaching, females tended to identify with their fellow PGDE students and their supervisor. Males on the other hand, sought support and guidance from their co-operating teacher or teachers based in their practice placement schools and from other sources such as previous teachers; friends; previous teaching experience and the Internet. The study also revealed age related differences in the sources of guidance sought in relation their teaching. Those under 25 years did not turn to academic advisors such as supervisors or special methodology lectures. They looked instead to co-operating teachers in schools and their families. For those aged 25 but under 30 years the main source of guidance was other PGDE students. However, the more mature students, those aged 40 and over sought guidance from academic advisors such as college and subject methodology lectures.

The manner in which a message is channelled is an important feature of the ELM and this is also true of initial teacher education programmes. When participants were asked for suggestions about

Table 8
Respondents' views of the structure and content of the PGDE course differentiated by gender and age (total n = 1883).

Main focus for improvement	Total %	Gender	%	Age range	% of Age group
PGDE course structure (n = 1152)	63%	Males	57%	Under 25 yrs	58%
				25 but under 30 yrs	51%
		Females	57%	30 but under 40 yrs	59%
				40 yrs and over	56%
PGDE course content (n = 681)	37%	Males	23%	Under 25 yrs	25%
				25 but under 30 yrs	29%
		Females	23%	30 but under 40 yrs	18%
				40 yrs and over	18%

redesigning the programme they focussed on programme structure as opposed to programme content. Issues that emerged included securing a balance between school and college, the need to recognize that participants had ongoing family responsibilities to balance with programme requirements and it was perceived that the workload was quite onerous. This supports the view of Brouwer and Korthagen (2005) that the structure of teacher education programmes may be counter-productive to student teacher learning. It also suggests that the Department of Education & Skills (2011b) recommendation to extend the programme two years is appropriate in the context of these findings. Participants found the completion of essay based assignments to be challenging, as some were not used to being assessed in this way. The findings also indicated that these assignments were being given to students very early on in the programmes while they were still adjusting to the practice placement context, and as a result, they could not engage meaningfully with issues connecting the education disciplines to practice.

Context is also an important element in the ELM and especially so in teacher education. Many of the studies focus on the fragmented connections between the teacher education programmes in both the university and school contexts (Barone et al., 1996; Carlson, 1999; Tom, 1997). The findings from this study suggest that teacher educators should look at both contexts simultaneously. The diversity within the group merits consideration representing a broad range of age groups whose views in relation to some aspects of the programme differed considerably. The varied perceptions of the different age groups suggests that teacher educators must think about different learning styles and needs of the students who participate on these programmes. Equally the different perceptions of females and males to various aspects of the programme should also be explored more deeply. Participants indicated that despite being highly motivated to pursue teaching as a career they found the initial classroom encounters to be very stressful. This suggests that teacher educators should be cognisant of the early impact of classroom context upon student teachers at the start of their initial teacher education programme.

8. Implications for teacher education

The preceding analysis has important implications for teacher education. The ELM assumes that attitudinal change is the result of a complex interaction of task, individual differences, and contextual variables (Petty, Heesacker, & Hughes, 1997). This reality points to the need for teacher educators to think very carefully about the attitude formation process that they are engaged in.

In large group lecturing contexts student teachers may experience a diminished responsibility for forming attitudes. The academic aspects of the programme are generally addressed in this context and the likelihood of elaboration may be at low. The pedagogical strategies employed by teacher educators are therefore very important to increase perceived responsibility on the part of student teachers. Using multiple sources who represent different perspectives may increase their likelihood of attending to the merits of these issues, instead of having the same information presented by a single source or by multiple sources representing a single perspective (Petty et al., 1997).

Equally important is the nature of assessment employed on teacher education programmes that will promote central route processing. If assignments that focus on evaluation and reflection are introduced too early to student teachers, they may not be ready to relate their school contexts to the theoretical perspectives and consequently, will engage in peripheral processing in order to fulfil the requirements of the programme.

These issues are also related to the way in which academic advisors are viewed by student teachers as a source of guidance for their teaching. The findings from this and other studies suggest that teacher educators need to develop closer co-operative relationships with practitioners in the school context as suggested by Korthagen (2010), so that the messages conveyed by teacher educators in the university context, will be considered by student teachers from a central route processing perspective. It also suggests that teacher educators should be aware of the impact of other sources on student teachers' attitude formation.

If student teachers only make simple associations with positive or negative cues in their environment then the resultant attitude formation will be relatively short-lived, susceptible to counter-persuasion, and will result in un-predictive behaviour across situations (Petty & Cacioppo, 1986). This is something that teacher educators want to avoid. Teacher educators must consider whether student teachers engage in various processes because of factors other than attitude change, namely engaging in behavioural compliance based on social norms, rather than as a result of personal attitude change (Petty et al., 1997). This is particularly relevant in the supervisor–student teacher relationship where the student teacher does not consider him/herself as a co-equal collaborator. If this happens, then there is less likely to be a thoughtful examination of the issues discussed and the student teacher relies on the view that the supervisor knows best or adheres to the accepted norms of pleasing the supervisor. Student teachers may be reluctant to share their thoughts openly for fear of exposing erroneous beliefs or displeasing the supervisor. This may represent a failure on the part of supervisor to engage student teachers in actively evaluating their recommendation in terms of the student teachers' knowledge, experience, attitudes, and goals. The impact of the school context on student teachers must also be considered by teacher educators for the duration of the programme, particularly at the start, as inadequate school structures, which do not support student teachers can result in negative experiences and promote peripheral route processing.

In individual contexts where student teachers request assistance the topic is, by definition, personally involving to the student teacher, and elaboration is likely (Petty et al., 1997). Teacher educators therefore must consider whether programmes provide sufficient opportunities for student teachers to seek assistance in relation to areas where they experience difficulties. An example of this concerns lesson planning where respondents in this and other studies indicated that they found it difficult to evaluate their lesson plans and engaged in the process in order to meet the requirements of the programme, thereby using the peripheral processing route.

According to the ELM, a sense of personal responsibility and involvement is expected to enhance issue-relevant thinking and increase the likelihood of central route attitude change (Petty & Cacioppo, 1979). Emphasizing that the responsibility for the decision rests with the student teacher, the teacher educator should actively engage the student teacher in bringing his or her opinions, knowledge, and assumptions to bear on the topics under consideration. Relying on obtaining facts only (Petty et al., 1997), from the student teachers may diminish their sense of responsibility for problem solving and, thus, reduce the likelihood that they will offer their own interpretations or beliefs about the problem or a recommended intervention.

Understanding how student teachers think about various issues aids tremendously in constructing a persuasive message that will elicit favourable thoughts rather than counter-arguments (Petty et al., 1997). Teacher educators should also consider personal variables that could impact upon student teachers' attitude change, these include gender, age, prior experiences and career background.

This is an important study for a number of reasons. The findings situated within the ELM integrative framework suggest that teacher educators should re-conceptualize teacher education programmes with a view to promoting enduring attitude formation about the key messages conveyed. Such an approach allows teacher educators to examine teacher education practices, particularly the experiences that will promote central route processing on the part of student teachers. It also allows teacher educators to engage in reflective practice with reference to their own role in promoting attitude formation. It facilitates reflection on the part of teacher educators with reference to their role as extending beyond that of a traditional lecturer to include professional expertise as highlighted by Korthagen (2010). The awareness of both these dimensions of the teacher educators' role should facilitate the promotion of persuasive messages.

The study highlights the fragmentation that currently exists in teacher education particularly between the university and school contexts. The study is important as it highlights the ELM as a useful evaluative tool. If used effectively, the ELM can illuminate the way student teachers' experience the messages being promoted within teacher education programmes. It can also be used to monitor how student teachers are progressing during the programme. The study also reinforces the fact that learning within teacher education programmes needs to be carefully organized and structured.

This article argues that it is only through such analysis that insights can be gained about the needs of student teachers in the context of their initial teacher education, their school-based teaching practice and as teacher education students in university. The implications of this, for programme development and planning are of fundamental importance not only to teacher education itself but also to the education system generally.

Appendix. Supplementary data

Supplementary data associated with this article can be found, in the online, at doi:10.1016/j.tate.2011.08.004.

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