Abstract
This paper reports on a doctoral study that attempts to operationalize the productive pedagogies initiative of Education Queensland. The study explored the qualitatively different ways in which middle years teachers experience pedagogic connectedness with their students. Mentoring relationships between teachers and students were found to be the optimum approach to increasing and sustaining student engagement and consequently improving the educational outcomes of boys in the middle years of schooling. The findings also provide insight into the nature of teacher-student interactions that may lead to enhanced pedagogic connectedness, a useful set of data to guide the design, development and implementation of pre-service teacher education programs.

Five categories of pedagogic connectedness emerged from the phenomenographically-inspired study. These categories should be seen as developmental and teachers encouraged and supported to progress through these stages as they mature professionally. The emergent categories in order of increasing complexity are information providing, instructing, facilitating, guided participation and mentoring.

Introduction
Early adolescence was identified as a distinctive stage of adolescence in the 1970s (Thornburg, 1983). Early adolescents are defined as youth from around 10 to 15 years of age. Contemporary early adolescent students differ markedly from those in that age group thirty years ago (personal communication, cited in Manning & Bucher, 2005, p. 358). Today, early adolescents mature faster physically, cognitively and socially. Adolescents of this generation have access to “extensive and sophisticated informational sources outside school and family; they are the direct target of advertising and mass media; and, increasingly, they are understood outside the parameters of childhood” (Luke et al., 2003, pp. 15-16). Thus, contemporary adolescents bring to schools new skills, needs and issues unique to this generation. The ready availability of drugs and alcohol, socio-economic diversity, AIDS and the threat of global terrorism (Manning & Bucher, 2005) provide further challenges for adolescents in contemporary contexts. These challenges lead to an increased vulnerability to educational underachievement, disengagement and failure. While early adolescents have changed significantly, many schools have not responded to the changed nature of this generation of students and the new skills and experiences that they bring to school.
Alienation and disengagement from schooling shown by contemporary early adolescents are significant educational concerns, both nationally and internationally. In response to these concerns, many educationalists, especially in the United States (Beane, 2002; Carnegie Council on Adolescent Development, 1996; Jackson & Davis, 2000; Mizell, 1999; Newman & Associates, 1996) and Australia (Australian Curriculum Studies Association, 1996; Barratt, 1998; Chadbourne, 2001; Education Queensland, 2003) have proposed major changes to schooling in the early adolescent years, the middle years of schooling. Some schools have responded by implementing structural changes to create middle school sub-units within larger schools but have failed to respond adequately to the unique and diverse needs of early adolescent students. However, structural reforms alone are not sufficient to guarantee that the educational experiences provided in middle schooling programs are consistent with the philosophy, curriculum and pedagogy of middle schooling (Jackson & Davis, 2000). If substantial and sustained improvements in student educational outcomes are to occur, middle schooling programs need to be introduced “comprehensively and holistically, rather than in half measures” (Chadbourne, 2001, p.16). Student disengagement, similar to that experienced in traditional secondary schools, may result if structural changes are implemented without aligning curricular and pedagogic changes (de Jong, 2005). Changes to classroom practices and climate, curriculum, assessment and central to this study, pedagogy, are necessary to enhance the academic achievements of early adolescent students (Chadbourne, 2001; Jackson & Davis, 2000; Manning & Bucher, 2005).

The focus of the doctoral study reported in this paper is on pedagogic connectedness, that is the engagements between teacher and student that impact on student learning (Beutel, 2003). In the context of the study, connectedness is defined as an attachment or a connection to a place, person, or a group of people (Fuller, McGraw, & Goodyear, 2002; Noack & Puschner, 1999) that promotes a sense of comfort and well-being (Hagerty, Lynch-Sauer, Patusky, & Bouwsema, 1993) and pedagogy, as defined by Lingard, Mills and Hayes (2000) is the “interrelationships between teacher practice and student outcomes” (p. 102). The significance of warm, positive and healthy connections between teachers and students in enhancing student outcomes (Carnegie Council on Adolescent Development, 1996; Chadbourne, 2001; de Jong, 2005; Jackson & Davis, 2000; Manning & Bucher, 2005) and facilitating the intellectual, ethical and social development of early adolescents (Carnegie Council on Adolescent Development, 1989; Jackson & Davis, 2000) is well-documented in middle schooling reform literature. Further, the findings of the Queensland School Reform Longitudinal Study (QSRLS), commissioned by Education Queensland to investigate how academic and social student outcomes could be enhanced in the local context (Lingard et al., 2001), reported that the provision of intellectually challenging activities within socially supportive contexts for learning facilitate high quality learning. However, the findings of the QSRLS (Lingard et al., 2001) revealed also that, while social support for students was evident across the middle years in Queensland schools, there were relatively low levels of intellectual demand (Carrington, 2002). The recommendations of the QSRLS emphasized the need for a focus on the “use of a range of appropriate and ‘productive pedagogies’” (Carrington, 2002, p. 19) in middle years classrooms to enhance social and academic learning outcomes for students. The Productive Pedagogies model that emerged from the QSRLS (Lingard et al., 2001), provides a pedagogic framework for enhancing positive student outcomes within the context of Queensland schools. The work in this doctoral study builds on the Productive Pedagogies model. In interrogating pedagogic connectedness, the mediated and relational nature of pedagogic teacher-student interactions as experienced by teachers of middle years students is explored. It is these engagements that impact significantly on student learning and it is argued that these interactions are central to reversing the alienation and disengagement experienced by student in these middle years.

Context of the Study
An independent boys’ college in south-east Queensland, at which the researcher taught, provided the context for the study. The college caters for male students from years 5 to 12.
(from approximately 10 to 17 years of age). Prior to the commencement of the study, teachers and administrators at the school expressed concerns regarding the apparent decline in classroom engagement shown by many boys, particularly in the transition from primary school to secondary school. At the time, this transition occurred between year 7 and year 8, during the students’ early adolescent years. A whole school renewal process was planned in response to concerns regarding boys’ disengagement from schooling. The establishment of a middle school sub-unit was the key reform in the renewal process. The main purpose of the middle school was to better engage students through the provision of educational experiences that were more responsive to the needs of the boys at the school and through the establishment of more meaningful and productive teacher-student relationships.

The doctoral study focuses on teachers of boys in years 7, 8 and 9 at the college. These years constitute the proposed middle school sub-unit at the college, and it is from the current population of year 7, 8 and 9 teachers that the teaching staff for this new middle school will be chosen. As such, this study is significant as the findings may be used to guide pedagogic practices in the proposed middle school.

Methodology
Phenomenographic research seeks to identify the qualitatively different ways in which people perceive various phenomena (Marton, 1988, 1994) from the perspective of the research participants (Ashworth & Lucas, 1998; Marton & Booth, 1997; Svensson, 1997) rather than from the perspective of the researcher. As this study sought to reveal the qualitatively different ways in which teachers experience the phenomenon of pedagogic connectedness from the perspective of teachers of students in the middle years of schooling, a phenomenographic perspective was deemed appropriate to a study of this kind.

The participants were twenty teachers of male adolescent students in an independent school in south-east Queensland. As phenomenography seeks to reveal variations in the ways of experiencing phenomena, in this case pedagogic connectedness, the participants were selected using specific criteria to maximise as much as possible the range of perspectives of pedagogic connectedness. The selection criteria included the amount of contact time teachers had with students and the curriculum areas in which they taught as it was argued that the frequency and nature of classroom teacher-student interactions affect pedagogic connectedness. To reveal the full extent of pedagogic connectedness, a broad range of teacher-student contact times were encompassed by the teachers who were selected as participants. It was argued also that different curriculum areas provide opportunities for vastly different kinds of pedagogic interactions with students. As such, teachers were selected across a wide cross-section of the curriculum offerings at the school.

The teachers who were selected to be participants for the study were interviewed individually using semi-structured interviews and the interviews were audio-taped for later transcription and analysis by the researcher. Each interviewee was asked the same set of key questions or prompts with other unprepared questions and prompts emerging during the course of the interviews. The predetermined questions and prompts were open-ended to allow the participants to reveal their ways of experiencing pedagogic connectedness as completely as possible, rather than revealing the ways in which the researcher perceived the phenomenon. The interviews focused around responding to the key research question: “What is the nature of pedagogic connectedness?” and to the research sub-question “What are the qualitatively different ways of experiencing pedagogic connectedness?” The researcher defined the term “pedagogic connectedness” in the preamble prior to the interviews. However, as teachers were relatively unfamiliar with the term, interview questions were posed as “How do you connect with students?” and “What specific teaching methods do you use to facilitate these connections in the classroom?” rather than using the term pedagogic connectedness directly. Further questions and prompts throughout the interviews focused on directing the
interviewees towards their own specific behaviours in the classroom that impact on pedagogical teacher-student relationships.

The interview data were analysed using an iterative process adapted from a method originally developed by Marton (1986). This process involved reading and rereading the transcripts initially to search for themes across the transcripts and for similarities and differences. Following this, significant statements that revealed aspects of pedagogic connectedness were identified by the researcher. These statements were compared and contrasted and the similarities and differences that emerged from the data provided the basis for a set of categories that characterised the findings.

The findings that emerged from the data analysis are presented in two key, interrelated ways which are characteristic of phenomenographically-related studies. These are: categories of description and outcome space. Both reveal the range of conceptions held by the participants about the phenomenon under investigation and the links between them (Marton & Booth, 1997). Categories of description attempt to capture the character of the conceptions or lived experiences of the research participants through descriptions of key aspects of the phenomenon (Richardson, 1999) whereas the outcome space is a kind of analytic map (Dahlgren & Fallsberg, 1991) or two-dimensional, visual representation of the range of ways of experiencing a phenomenon. In this study, the findings reveal a number of ways of experiencing pedagogic teacher-student interactions which, until this study, did not exist in the current literature.

Findings
Five categories of description that characterize teachers’ conceptions of pedagogic connectedness emerged from the data analysis. These categories are linked hierarchically to each other with each successive category subsuming aspects of pedagogic connectedness contained in less complex categories. Figure 1 shows the categories of pedagogic connectedness and the six dimensions of variation that delimit the categories from each other.

The categories, in order from least complex to most complex are:
- Information providing
- Instructing
- Facilitating
- Guided Participation
- Mentoring

In the least complex conception of pedagogic connectedness, information providing, pedagogic connectedness is seen as providing or delivering a body of knowledge. In this conception, teachers view themselves as service providers rather than professionals and the learners are viewed as passive recipients in the learning process, with knowledge being provided by teachers and texts. This conception of pedagogic connectedness is similar to the factory model of schooling described by Rogoff, Turkanis and Bartlett (2001). In the factory model, schools are considered to be efficient factories in which knowledge is an object that is transmitted from teachers to students. In the information providing conception, as in the factory model of schooling, teacher-student interactions are infrequent and are mainly one way, from teachers to students. Pedagogic connectedness in this conception is perceived as something that is done to students. The teacher engages pedagogically by giving information to students. The teacher is seen as the expert who controls the flow of knowledge to students whereas the student is perceived as the novice with little to contribute to classroom learning experiences.
Figure 1: Summary of the Categories of Description of Pedagogic Connectedness

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<tr>
<th>Dimensions of Variation</th>
<th>Categories of Description</th>
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<td>1 Information Providing</td>
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<tr>
<td>Perceived influence on student</td>
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<td>Student motivation</td>
<td>Extrinsic</td>
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<td>Classroom atmosphere/authority</td>
<td>Impersonal/ emotionally distant</td>
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<td>relations</td>
<td>Authoritarian-few teacher-student interactions</td>
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<td>Repertoire of pedagogic</td>
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<td>Perceived role of teacher/</td>
<td>Teacher as expert/student as novice</td>
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<td>Focus of teaching and learning</td>
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The second category of description of pedagogic connectedness is instructing. In this conception, the key focus of teachers is teaching skills to students. The teacher is also viewed as the expert in this conception. However, in the instructing conception the teacher focuses on the application of skills imparted to students rather than on knowledge itself. Thus, the focus is on procedural knowledge, defined by Marzano and Pickering (1997) as knowledge that “requires the learner to perform a process or demonstrate a skill” (p. 43). As in the previous conception, pedagogic practices consist mainly of direct instruction. However, in the instructing conception, there are greater opportunities for teacher-student and student-teacher
interactions as the teacher moves from the isolation of the front desk to move around the classroom, albeit to monitor student behaviour and engagement. In this conception, pedagogic connectedness remains teacher-centred. However, the greater physical proximity between teachers and students provides greater opportunities for the exchanges between teachers and students to become less authoritarian in nature.

The third category, facilitating, marks the transition between teacher-centred and student-centred categories. In this conception, the teacher acts as a facilitator of learning and it is these teacher-student interactions that facilitate student learning. This is the first conception in which teachers focus on teaching students rather than on teaching a subject or subject-related skills. In teachers’ descriptions relating to this conception, students are seen as active participants in the learning process. It is this active participation that delimits this conception from previous conceptions. In the facilitating conception, the teacher engages with the students as she/he moves around the classroom. The teacher asks questions of the students to gauge student understanding of the object of learning and to assist in the learning process. Unlike the less complex conceptions, students’ interactions with each other and with the teacher are acknowledged as important to student engagement and to student learning.

Guided participation is the second most complex category of pedagogic connectedness and is the first student-centred category. The focus in this conception is on the quality of the individual relationships between the teacher and students. As in the previous conception, teachers described working with students. However, in guided participation, teachers focus on developing in students a more independent approach to learning. This independence extends also to life outside the classroom. In this conception, interactions between teachers and students involve two-way dialogue that is on a more personal level than previous conceptions. The engagements between teacher and student move away from the traditional impersonal, distant teacher-student relationships to closer, personalised, more equal relationships in which the teacher acts as a guide to students. Teachers and students act as partners in learning and teachers perceive themselves as more experienced equals in the learning partnership.

The most complex category of pedagogic connectedness to emerge from the data is mentoring. In this conception, the focus is on the partnership between teacher and student and the quality and the duration of that partnership. These teacher-student partnerships are viewed as long-term relationships, extending well beyond the years of schooling. When describing this conception, teachers speak of the development of students as lifelong learners rather than only as students in the classroom. As such, there is a greater emphasis on attitudes and values outside the classroom than in previous conceptions. Teachers see themselves working alongside parents as partners in the students' development. As such, teachers perceive themselves as equals, albeit more experienced equals, to students in the teacher-student partnership. Further, there is a sense of community between teachers and students in this conception. Manning and Bucher (2005) define sense of community as a “feeling of togetherness where students and teachers get to know each other sufficiently well to create a climate for intellectual development and shared educational purpose” (p.300). In this conception, there is a sense of oneness between teacher and students as they share a mutual commitment toward a common goal, the development of the student to be a well-adjusted, contributing member of society.

A key aspect that further delimits the mentoring conception from less complex conceptions is the enthusiasm that teachers have for their specific subject disciplines. While teachers described using self-reflection to evaluate and improve their own teaching practices in less complex categories, they did not articulate passion for their areas of expertise. In the mentoring conception, teaching is seen as an emotional rather than emotionless activity in which teachers perceive that the enthusiasm and passion that they demonstrate is contagious. As such, teachers in this conception believe that, through their passion for teaching and learning, students will be enthused to learn.
As discussed earlier, the results of phenomenographic studies are presented in the form of an outcome space that reveals how the categories of description are internally related (Trigwell, 2000). The outcome space of this study is a diagrammatic representation of the categories of description of pedagogic connectedness and the relationships between them (Marton, 1988). As shown in Figure 2, the most complex conception, mentoring is innermost as it represents

Figure 2: Outcome Space of Pedagogic Connectedness
the core of pedagogic connectedness. Each successively less complex conception is situated further away from this core. Information providing, being the least complex conception is shown at the outside boundary of the outcome space. The six dimensions of variation of pedagogic connectedness that delimit the categories from each other are of equal importance. Within the outcome space, each dimension is represented equally as a point on a star. The narrowing of the points from the centre of the star to the outermost tips symbolises a change in complexity within the dimensions from more complex to less complex.

Discussion
The key variation between the different categories of description of pedagogic connectedness to emerge from the study is the depth of the teacher-student relationship. This relationship changes from an impersonal, distant relationship in the information providing conception through to teachers considering themselves to be significant others in students' lives in the mentoring conception. Six dimensions of variation that delimited the categories from each other were revealed from the study. These dimensions are:

- Perceived influence on students
- Student motivation
- Classroom atmosphere/authority relations
- Repertoire of pedagogic practices
Perceived roles of teacher and student

Focus of teaching and learning

Perceived influence on students

The perceived influence on students ranges from academic performance in the information providing and instructing conceptions, through to academic and individual development and preparing students for their lives beyond the classroom and beyond the years of schooling in the mentoring conception. In the information providing conception and in the instructing conception, teachers describe teaching subjects or skills rather than teaching students. The relationships between teachers and students in these less complex conceptions are viewed as superficial and less caring compared with the relationships in more complex conceptions. The facilitating conception is the first to recognize teachers’ perceptions of their influence outside the academic performance of students. In this conception the teacher focuses on the development of the social and emotional skills that students need in their daily interpersonal interactions. Teachers in this conception may perceive themselves as role models to students. A role model is defined as a person who provides opportunities for learners to observe and hence to imitate certain desired behaviours (Darling, Hamilton, & Shaver, 2003). In this case, the teacher assists students in their social and emotional development by modeling respectful interactions with students through showing interest in, and care for, students.

In the facilitating conception and in the more complex conceptions of guided participation and mentoring, more individualized learning occurs. Thus, due to these more personalized interactions with students, teachers may recognize that their influence with students extends beyond the classroom. In the most complex conception, the mentoring conception, there is a holistic approach to the education in which teachers perceive themselves as significant others in the lives of students.

Student Motivation

In the information providing conception, teachers describe success in examinations as a purpose for teaching. Teachers are so oriented toward training for examinations that they do not speak about how students are motivated to succeed. It is only when teachers get to the instructing conception that they first speak explicitly about motivation. In this conception, teachers describe the use of extrinsic means such as rewards and fear of punishment to motivate students. The motivation gradually becomes more intrinsic as teachers progress to the more complex conceptions. In the mentoring conception, teachers describe guiding students to become well-adjusted contributing members of society with an innate desire for learning. Thus, there is a very specific shift towards intrinsic motivation.

Classroom atmosphere/authority relations

Supportive classroom environments are characterized by atmospheres of mutual respect and support between teachers and students, and among students. The Productive Pedagogies framework that emerged from the Queensland School Reform Longitudinal Study (Education Queensland, 2001) identifies a supportive classroom environment as a key contributing factor to high quality learning. Wentzel (1997) uses the term "pedagogical caring" to describe teacher behaviours that demonstrate care and support of students. In her study of student motivation in middle school, Wentzel found that when students feel valued and supported, and thus feel a sense of connectedness, they are more likely to engage in classroom activities (p. 417). In the information providing conception of pedagogic connectedness, teachers perceive themselves as authoritarians who control classroom activities. However, in the most complex conception, the mentoring conception, teachers perceive themselves as more experienced equals who consciously attempt to build an atmosphere of mutual respect and support within the classroom, thus leading to feelings of connectedness and hence, increased engagement.

Repertoire of pedagogic practices
The repertoire of pedagogic practices becomes more extensive in moving from information providing to mentoring. Pedagogic practices commence with direct instruction in the least complex conception through to a variety of practices that include group work, discussion, and student-initiated learning activities in the most complex conception. Together with these pedagogic changes, the perceived role of the teacher changes from "sage on the stage" in the information providing conception to "guide on the side" in the mentoring conception.

Perceived roles of teacher and student

In this most complex mentoring conception, teachers consider themselves to be more experienced equals. As such, the relationship between teacher and students is near-peer (Lave, 1991). Learning occurs through participation in ways that parallel those in “communities of practice”. Hung, Chee, Hedberg and Seng (2005) define communities of practice as a “sustained social network of individuals who share a common set of core values and knowledge, including a past history, grounded on common practices (p. 159). In the mentoring conception, teacher, students and parents work together with a shared commitment to the social, emotional and academic development of students on an ongoing basis.

Focus of Teaching and Learning

Finally, across the categories, teaching and learning move from a focus on the quantitative bundle of knowledge that teachers transmit to students to the quality of an ongoing partnership between teacher and student. The facilitating conception is a turning point as it denotes the change in focus of teaching and learning from quantitative to qualitative and also from a focus on content or skills to a focus on students. In the most complex conception, teachers speak of the quality of their relationships with students and also of an intrinsic love of learning and of their areas of expertise that they convey to students.

The categories of description of pedagogic connectedness are related hierarchically with the categories higher in the hierarchy providing richer, more complete descriptions of each dimension of pedagogic connectedness. The researcher argues that teachers' perceptions do not necessarily remain fixed in one conception of pedagogic connectedness but may move across the categories subsuming the lower levels. The differing conceptions that teachers demonstrate may be dependent upon the teaching context. For example, a teacher who considers that they operate in the mentoring conception for the majority of the time may use direct instruction (the key pedagogic practice in the information providing conception) to transmit a large amount of information in a short time.

This study of pedagogic connectedness has identified aspects of classroom teacher-student interactions that have not been identified in previous research. These aspects are contained within the dimensions constituting the mentoring conception of pedagogic connectedness and focus on the affective and attitudinal aspects of teacher-student interactions. The need for teachers to be passionate about teaching and learning and to convey that zest to students has not been articulated in previous middle years of schooling reform literature. Passion for teaching and learning is a key focus in the mentoring conception of pedagogic connectedness. As such, teaching is seen as a profession rather than just providing a service. Teachers perceive that their enthusiasm for learning transfers to the students and impacts on students' lives within the classroom and outside the classroom in positive ways.

The concept of mentoring is not a recent one. The term originated as early as 800BC from Homer’s Odyssey in Ancient Greek mythology (Hine, Clarke, & Power, 2000). The original Mentor had the responsibility of caring for and guiding Odysseus’ son, Telemachus. Mentor acted as a “role model, guide, facilitator, and supportive protector for Telemachus” (DeBolt, 1992, p. 36). In the current study of pedagogic connectedness, teacher-mentors take on these same responsibilities for their students. Further, teacher-mentors are passionate advocates for their areas of classroom expertise and for teaching and learning generally. The mentoring model presented in this study challenges previous understandings of partnerships between
teachers and students. As such, this study has made significant contributions to the growing knowledge base that surrounds middle years education.

Prior to this current study, research relating to the middle years of schooling identified the significance of warm, positive and healthy teacher-student relationships and the importance of using pedagogic practices that are responsive to the specific and diverse needs of individual adolescent learners. However, these earlier studies have not addressed the specific qualities that the teachers of middle years students bring to the classroom to engage and challenge early adolescent learners. In particular, teacher enthusiasm and passion for teaching and learning have not been identified previously as significant in impacting on student learning in the middle years of schooling. Modelling as a learning strategy has been around for decades but had always missed the focus of previous research. While it is acknowledged that teachers may act as role models for some behaviours, it is argued that teachers need to model also a passion for teaching and learning. The findings of this study have revealed that teacher-student classroom engagements in the middle years should be emotionally charged interactions in which teachers demonstrate passion and enthusiasm for teaching and learning and for life. This has powerful implications for teacher education programs for the middle years, for school administrators and for teachers themselves.

References


