LITERATURE REVIEW

Three main approaches to the study of stress are the engineering model of stress, the physiological model, and the interactional/transactional model.

According to the engineering model, stress is simply pressures from the external environment acting upon the individual (Grinker and Spiegel, 1945). Such an approach to the study of stress, fails to place adequate emphasis on the role of the individual in the occurrence of stress. Stress, as conceptualized within the physiological model consists of the release of hormones which effect changes to the functioning of the body (Selye, 1956). While these changes may in turn effect changes in emotional, behavioural and mental aspects of the individual, these changes are not focused on in the physiological model. By contrast, the interactional/transactional model proposed by Lazarus (1966), has a psychological basis. Folkman and Lazarus (1985) defined stress as a relationship between the person and the environment that the person judges as being relevant to his or her well-being and in which the person's resources are taxed or exceeded.

Stress shall here be conceived of as process involving a number of interactions between elements of the individual and of the environment...
mechanisms, some of which are described by Folkman and Lazarus (1985) and some of which were described in the physiological model of stress. Folkman and Lazarus (1985) suggested that the processes involved in stress are perception, appraisals and reappraisals, coping, and emotional responses.

The perception of stimuli simply involves the individual becoming aware of existing conditions. Perception of stimuli precedes the appraisal of stressors and coping capacity. The appraisal of potential stressors, primary appraisal, and the appraisal of coping capacity, secondary appraisal, are both cognitive processes (Folkman and Lazarus, 1985). Primary appraisal involves individuals making judgments about the extent to which potential stressors are placing demands on them.

Secondary appraisal involves individuals assessing the resources available in the environment and within themselves, which will enable them to cope with the stressors encountered. Attempts at coping follow secondary appraisal. Coping is the attempts made by individuals to master, tolerate or reduce internal and external demands which are appraised as being present. Reappraisals of the potential stressors follow coping.

While Lazarus (1986) recognized that emotions were involved in stress, he did not recognize the role of physiological changes. Within this study, emotional and physiological changes are understood as constituting part of the stress process. These changes are viewed as being products of and influencing the stages described above (perception, primary and secondary appraisal, coping, and reappraisals).

As in this study, the emotional and physiological changes which are involved in stress are often assessed through symptomatology checklists. Long-term exposure to stressors has been found to be associated with reports of physical symptoms of stress, such as headaches (Kinnunen and Salo, 1994). Wilson and Otto (1988) identified that higher symptom scores were positively associated with judgments that potential stressors were encountered more frequently and were a greater source of stress.

Boyle, Borg, Falzon, and Baglioni (1995) described twenty stressors which are relevant for school teachers. These stressors related to students, colleagues, professional issues, time pressures and workload. Australian studies have identified a number of additional stressors which are relevant to school teachers: excessive societal expectations, problems with administration, Education Department policies and expectations, professional isolation in the classroom, lack of opportunities for part-time work, and pressure of involvement in educational research and development (Otto, 1985; Tuettemann and Punch, 1992; Louden, 1987).
Research investigating coping strategies, has identified that active direct coping is more commonly adopted than other coping strategies (e.g. Westman and Shirom, 1995). Examples of such types of coping are planning and setting priorities. The use of advice seeking and the use of direct action have both been identified as being associated with fewer reports of physical symptoms of stress (such as headaches).

In an Australian study investigating stress in secondary school teachers Otto (1985) identified nine coping scales. Otto (1985) also investigated the relationships between specific stressors and coping styles. Some of the findings were a) coping through reduced involvement was associated with administrative problems and a heavy workload, b) coping through increasing skills was associated with a heavy workload and with poor colleague relations, c) the use of social support was associated with a heavy workload, and d) coping through psychological detachment was associated with problems with Education Department policies.

Carver, Scheier and Weintraub (1989) built on the work of Folkman and Lazarus (1980; 1985). In a study of stress in university students they suggested fourteen styles of coping, each of which should be considered as conceptually distinct, yet which may be associated with other coping strategies. For nine of their styles of coping Carver et al. (1989) used the theory of stress of Folkman and Lazarus (1980; 1985) as a guiding basis. The remaining five styles of coping were based on empirical studies that had investigated stress. The strong theoretical basis of the instrument used by Carver et al. (1989) makes it superior to that used by Otto (1985).

AIMS OF THIS STUDY
The majority of previous research investigating teacher stress has tended to focus on permanent teachers who have permanent positions teaching in secondary schools. Only a few studies have investigated teacher stress in Australian primary school teachers (e.g. Louden, 1987). The principal aim of this study is to explore the differences between casual primary school teachers and permanent primary school teachers in their experiences of stress. Differences may occur in: a) their appraisals of how stressful the experience of being a teacher is b) their appraisals of potential stressors in the workplace c) the ways in which they cope d) the extent to which they experience symptoms of stress

Related to this issue is the issue of whether the current research instruments which assess teacher stress are sensitive enough to the specific group of casual teachers. It is possible that stressors that
are uniquely relevant to casual teachers are not addressed in existing stressor measures.

Previous studies investigating teacher stress have failed to address the issue of which coping styles are associated with particular teachers stressors. A secondary aim of this study is to explore of the relationships between the types of stressors that are perceived as being stressful and the types of coping strategies that are adopted.

Another aim of this research is to establish whether the same stressor and coping scales, identified in studies carried out in other countries, exist in Australia.

Finally, it is an aim of this study to reconfirm relationships between stress variables identified in previous stress research.

METHOD

PARTICIPANTS
The number of participants included in the sample was 86. Participants were primary school teachers 29 of whom were teaching on a casual basis, 47 of whom had permanent teaching positions, and 9 of who had been teaching in temporary permanent positions (i.e. casuals who had block teaching appointments for 2 school terms or longer). At least 96% of the participants were primary school teachers who graduated from the Faculty of Education of the University of Sydney between 1993 and 1995.

MATERIALS
a) Quantitative data collection
Self-completion questionnaires consisted of the Teacher Stress Inventory, a coping questionnaire, and a reactions checklist. Assessments were also made of demographic information; appraisals of how stressful each teacher found teaching; judgments about the amount of influence teachers had over potential stressors.

The Teacher Stress Inventory, as it appears in this study, consisted of 26 items. Six items, based on the findings of Australian studies, were added to the Teacher Stress Inventory (Boyle, Borg, Falzon, and Baglioni, 1995). The Teacher Stress Inventory (TSI) aims to assess individuals' judgments about the demands posed by potential stressors in the school environment.

The coping questionnaire was an adapted version of the Cope as used by Carver, Scheier, and Weintraub (1989). The coping questionnaire was aimed at assessing the frequencies of different coping attempts that teachers make in response to stressors which occur within the school domain.
The reactions checklist, which was a symptomatology checklist was based on checklist used by Wilson and Otto (1988). Symptom scores were calculated by scoring items that had been marked as occurring "often" with 2 points, and by scoring items that had been marked as occurring "sometimes" with 1 point.

b) Qualitative data collection
A space for comments was provided below the Teacher Stress Inventory.

DATA ANALYSIS
The TSI and the coping questionnaire were factor analyzed. One way ANOVAs were carried out for all stress variables in order to establish significant differences between casual, permanent, and temporary permanent teachers. Correlational analysis was carried out between responses to the TSI, responses to the coping questionnaire, reactions scores, the general appraised stress ratings, and the appraised influence ratings.

Qualitative data was considered in relation to quantitative data.

RESULTS
a) Quantitative data
Factor analysis
Factor analysis of the coping questionnaire extracted four coping factors. The coping scales which arose from these factors and Alpha values are summarized in the table below.

Coping scales identified in the present study
Alpha values

ACTION COPING
Planning
Active coping
Suppression of competing activities
Positive reinterpretation and growth
Restraint
Acceptance
0.92

SOCIO-EMOTIONAL COPING
Expression of emotions
Use of emotional support
Use of instrumental support
0.90

RELIGION
0.93
DENIAL AND DISENGAGEMENT
Use of alcohol and other drugs
Mental disengagement
Behavioural disengagement

Denial
(Acceptance)
0.69

Factor analysis of the items of the Teacher Stress Inventory (TSI) enabled construction of stressor scales. The five scales showed acceptable Alpha values (Alpha>0.61) (See table below).

Teacher Stress Inventory Scales      Alpha  Mean
Scale 1(Administration)             0.75    2.50
Scale 2(Students)                   0.88    2.86
Scale 3(Workload)                   0.70    2.96
Scale 4(Professional concerns)      0.76    2.28
Scale 5(Colleague relations)        0.62    2.31

Analysis of variance
An analysis was made of mean differences in TSI scale scores between casual teachers, permanent teachers, and temporary permanent teachers (i.e. casual teachers with block teaching appointments of two terms or more). One way analysis of variance showed that temporary permanent teachers differed significantly from casual and permanent teachers at the 0.01 significance level on only one aspect of stress. This dimension was scale three of the TSI (workload). Means for workload are shown below.

Teaching status      Means for workload stressors
Casual                2.67
Permanent             2.93
Temporary permanent   3.93

Casual teachers, permanent teachers and casual teachers working in temporary permanent positions did not differ significantly in terms of the types of stressors that were appraised as being relevant, their methods of coping, their reactions scores, or their sense of lack of influence over stressors to which they were exposed.
Associations between stress variables
The most acceptable correlation between measures of appraised stress was found between general stressfulness scores and teacher stressor scores (assessed by the student stressor scale and the workload stressor scale), with a correlation of 0.57 (p<0.01).

Correlation Coefficients Between Coping Scales and Stressor Scales and the Total Stressor Score

Analysis of the correlations between stressor scales and coping scales revealed a number of significant correlations. These correlations and their significance levels are shown in the table below. Significant correlations are shown in bold. Scale one of the TSI (administration) was positively and significantly correlated with coping scale four (denial and disengagement). There were no significant correlations between scale two of the TSI (students) and coping scales. Significant positive correlations were found between TSI scale three (workload) and coping scale two (socio-emotional coping) and between workload and coping scale four (denial and disengagement). TSI scale four (professional issues) was also found to be significantly and positively correlated with coping scale four (denial and disengagement), while it was also found to be significantly and negatively associated with coping scale three (religion). TSI scale five (colleague relations) was found to be negatively and significantly correlated with coping scale one (action coping).

<table>
<thead>
<tr>
<th>Action</th>
<th>Socio-emotional</th>
<th>Religion</th>
<th>Denial and disengagement</th>
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</thead>
<tbody>
<tr>
<td>Coping</td>
<td></td>
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<tr>
<td>Administration</td>
<td>.3045</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>P= 0.005</td>
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<td></td>
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<tr>
<td>Students</td>
<td></td>
<td></td>
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<tr>
<td>Workload</td>
<td>.2985</td>
<td>.2965</td>
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<tr>
<td></td>
<td>P= 0.006</td>
<td>P= 0.006</td>
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<tr>
<td>Professional</td>
<td>-.2407</td>
<td>.2529</td>
<td>P= 0.027</td>
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<tr>
<td>issues</td>
<td></td>
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<tr>
<td></td>
<td>P= 0.027</td>
<td>P= 0.020</td>
<td></td>
</tr>
<tr>
<td>Colleague</td>
<td>-.2390</td>
<td></td>
<td>P= 0.033</td>
</tr>
</tbody>
</table>

Reactions scores were found to correlate positively and significantly with all measures of appraised stress. The correlation between
reactions scores and total stressor scores (which indicates teachers judgments about how much a source of stress all of the potential stressors are) was 0.34 (p< 0.05).

Only one significant correlation was found between reactions scores and coping scales. The correlation between reactions scores and coping scale two (socio-emotional) was 0.24 (p<0.05). This indicates that teachers in this study who experienced symptoms of stress more often also expressed emotions and used social support to cope more often.

Appraised lack of influence over stressors was significantly and negatively correlated with coping scale one (action coping) (p<0.02). This represents trend of an increase in use of action coping strategies with an increasing sense of influence.

b) Qualitative data
Many of the casual teachers who made comments, explicitly stated that the stressors that they experienced were different to those of permanent teachers. For example:

As a casual, pressure is different than that of full-timers.

As a casual stress is different from a permanent teacher. Constantly you have to impress because there is always competition! You are always asking yourself - have I done everything - duties, etc.? On top of this you have to try and find a permanent position!!!

The previous quote illustrates the stressor of pressure to impress employers.

The following comment by a temporary permanent teacher shows how lack of recognition that they are fulfilling the same role as a permanent teacher is a stressor. In addition, this comment is one of a number that identify the lack of opportunity for permanent employment is identified as a stressor.

I feel stressed also because I am a "casual" and do the same work and oftenmore, than my "permanent" teacher counterparts, yet I get no recognition for this. I am no closer to becoming a "permanent" even though I have worked 5 days per week for 3 years, since graduating. There is very little incentive to stay in the profession.

The following two quotes are amongst a number that indicate that lack of job stability is a stressor for casual teachers.

Casual teaching is terribly uncertain.

I find the lack of job security very stressful.
DISCUSSION

Coping
The four coping scales that were identified in this study were labelled action coping, socio-emotional coping, religion, and denial and disengagement. The coping scales identified in this study are similar to the coping scales identified by Carver, Scheier, Weintraub (1989). The table below illustrates the similarities and differences between coping scales identified in this study, and coping scales identified by Carver et al. (1989). Overall, the findings of the current study provide support for scales that are very similar to those proposed by Carver et al. (1989).

<table>
<thead>
<tr>
<th>Coping scales identified in the present study</th>
<th>Coping scales identified by Carver et al. (1989)</th>
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<tr>
<td>ACTION COPING</td>
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<td>Planning</td>
<td>Planning</td>
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<td>Active coping</td>
<td>Active coping</td>
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<td>Suppression of competing activities</td>
<td>Suppression of competing activities</td>
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<td>Positive reinterpretation and growth</td>
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<td>Restraint</td>
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<td>Acceptance</td>
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<td>SOCIO-EMOTIONAL COPING</td>
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<td>Expression of emotions</td>
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<td>Use of emotional support</td>
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<td>Use of instrumental support</td>
<td>Use of instrumental support</td>
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<td>RELIGION</td>
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<td>Positive reinterpretation and growth</td>
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<tr>
<td>Restraint</td>
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<td>Acceptance</td>
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<td></td>
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<tr>
<td>DENIAL AND DISENGAGEMENT</td>
<td></td>
</tr>
<tr>
<td>Use of alcohol and other drugs</td>
<td>Use of alcohol and other drugs</td>
</tr>
</tbody>
</table>
Mental disengagement
Behavioural disengagement
Denial
(Acceptance)

Mental disengagement
Behavioural disengagement
Denial

Stressors
The present study identified five stressor scales, which arose out of factor analysis of an expanded form of the Teacher Stress Inventory.

The scales of stressors that arose out of factor analysis in this study were very similar to the scales that arose in a study which investigated stress in primary school teachers working the Mediterranean (Boyle et al., 1995).

Both studies identified four stressor scales. There was substantial overlap between the studies in terms of the items included in the scales. Importantly, this study found that student stressors and workload stressors were the scales that were most closely associated with appraisals that in general teaching is stressful. This parallels the findings of Boyle et al. (1995) who found that student and workload stressors were the only significant predictors of appraisals that teaching is a stressful experience.

Relationships between teaching status and stress variables

The quantitative data indicated one difference in experiences of stress amongst casual teachers, permanent teachers, and casual teachers teaching in temporary permanent positions. This difference was that casual teachers teaching on a permanent basis felt that workload was a greater source of stress than did permanent teachers or other casual teachers. Qualitative data suggests that there may be sources of stress which are encountered by casual teachers that are not experienced by permanent teachers, but which were not assessed by the TSI. In particular, the pressure to find a permanent teaching position, the pressure to impress employers, and the lack of job stability are potential stressors that require further investigation.

It is possible that a more exploratory study involving open-ended interviews with casual primary school teachers may be an appropriate method by which to investigate this issue. Differences between casual teachers on block appointments, and other casual teachers should also be investigated.

The difference suggested in this study is only a possibility that
should be further investigated as the number of temporary permanent teachers in this study (nine) was very small, and the information gathered about the nature of this difference was minimal.

Casual and permanent teachers did not differ in the degree to which they found the other four types of potential stressors (administration, students, professional concerns, or colleague relations) to be a sources of stress. This suggests that casual and permanent teachers experience essentially similar stressors to the same degree.

Importantly, it is possible that differences between casual and permanent teachers who have little teaching experience may not reflect the differences that exist between casual and permanent teachers who have more teaching experience.

Relationships between stressors and coping styles
In this study a number of strong associations were found to exist between styles of coping and the types of potential stressors that are sources of stress. The correlations between coping style and stressors indicate a number of trends. Firstly, greater stress from problems with administration, greater stress from workload, and greater stress from professional concerns are each associated by increased use of behavioural and mental disengagement and denial. Secondly, teachers with greater stress from workload teachers tend to use social support for emotional and instrumental reasons more and express their emotions more. Thirdly, greater stress from colleague relations is also associated with a less use of action coping. This suggests that particular stressors elicit particular coping strategies.

Associations between coping and other variables
Reaction scores were significantly and positively associated with the use of social support and the expression of emotions to cope with stress. In this study, it was found that a greater sense of influence over the stressors experienced by teachers was associated with greater use of action coping styles. This parallels the findings of Carver et al. (1989) who found that active coping and planning were likely to adopted when university students felt that they could do something about a stressful situation.

EDUCATIONAL IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH

There are a number of suggestions for educational changes which arise from this research study. Other teaching staff and executive staff should be made aware of the workload-related stress that temporary permanent teachers experience, as proposed in this study. In addition, if future research verifies that lack of recognition for teaching is a significant stressor for casual teachers, executive and teaching staff
should be made aware of this.

In the area of research issues, this study found that stressor scales very similar to those suggested in a previous study (Boyle et al., 1995) existed for primary school teachers in Australia. Future researchers should adopt and clarify the stressor scales originally suggested by Boyle et al. (1995) and verified in the current study. Similarly, further verification of coping scales identified in this study should occur. It should be ensured that items in future questionnaires assessing coping make clear the motivations accompanying coping attempts.

Future research should attempt to explore the nature of stressors experienced by temporary permanent teachers and other casual teachers, in order that stressors specific to these groups be identified. Such research should involve open-ended qualitative questioning. In particular, differences in workload stressors between temporary permanent teachers and other teaching groups should be investigated.

Further examination of the relationships between coping styles and stressors, as established in this research study, should be carried out to investigate whether the association found in this study exist for other teaching groups.

Finally all of the findings of the current study suggest possible relationships between variables in the specific group of casual and permanent primary school teachers who have had less than four years teaching experience. The nature of these relationships should be investigated in teachers who have more teaching experience, in order to identify whether these relationships are true for all casual and permanent primary school teachers. In particular, studies involving larger numbers of casual teachers who work on a temporary permanent basis need to be carried out.

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