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1.1 ACTUALITY OF THE RESEARCH

Stress experienced by female participants in the primary and educational milieus is a problem today. An affective disorder provoked by 'a 'subjective state of physical or mental tension', pressure and strain, psychological stress can negatively affect the effective realization of teaching and learning (Anisman & Merali 1999: 242). Firstly, female stress is a problem for female educators whose mental health affects others in the home, school and other places of learning, where women and sometimes girls have always been and, generally, still are the main caregivers because of a biological, psychological and social tendency to nurture. Their role is central to education because as Dreyer (1994: 72) points out, 'true' education involves 'nurturing' as well as 'caring'. Secondly, stress is a problem for female learners in whom stress prevents adequate self-actualisation. Moreover, a large number of females appear to experience stress at an early age in contemporary society. In fact, many women and girls appear to be vulnerable to stress disorders today (National Institute for Mental Health 2003: 1-3; Wolcott 1991: 4). It is even possible that females may be predisposed to stress due to gender-related factors, although data regarding 'gender-dependent effects of stressors are relatively limited (Anisman & Merali 1999: 245).

Although stress may appear to be a particular problem experienced by female participants in the contemporary primary and secondary educational milieus, where debilitating stress disorders negatively affect the successful realization of teaching and learning, it may also be an age-old problem. Female stress may be a universal and timeless problem because there have always been reasons for experiencing stress over the millennia, even though the causes of stress (stressors) may have varied at times. It is also possible that females are predisposed to stress due to biopsychosocial factors prevailing since earliest times (McDonald & Van der Linde 1993: 141; Burns 1988: 16-28; Linde in Lister 1996: 75).

Ludwig Wittgenstein (1889-1951), one of the most influential modern philosophers, suggested that past ways of thinking and behaving sometimes continue in the post-modern era. On the other hand, what may appear to be unchanging habits are different in the constantly altering context of daily lives (Wittgenstein 1984: 7e). According to Wittgenstein, 'If we take eternity to mean not infinite temporal duration but timelessness, the eternal life belongs to those who live in the present' (Wittgenstein 1988: 6.4311). Thus, the researcher believes that stress, an affective condition characterised by feelings of pressure and tension, experienced by female participants in the primary and secondary educational milieus might be a timeless problem owing to both temporary and ageless factors.

Wittgenstein rejected the nineteenth-century progressive view of history (historicism) that cultures and societies develop progressively and believed instead in the 'eternal present' where past patterns of human behavior may endure in different time contexts (Triche 2003: 12; Wittgenstein 1988: 6.4311). The researcher supports Wittgenstein's viewpoint and believes that, although women and girls face trials at times, they have always been vulnerable to stress because of both temporal and eternal gender-related biopsychosocial factors (Jurgens 2002: 1; Northrup 1998: 35). According to Mazure, Keita and Blehar (2002: 17):

The etiology of differential rates of depression in women and men almost certainly results from complex and reciprocal interaction of biological, psychological, and social factors.

Mazure *et al.* add that contemporary research indicates a movement towards developing a model that integrates these factors to explain gender differences in stress related disorders (Mazure *et al.* 2002: 17).

In line with Wittgenstein's paradigm of the eternal present, this investigation adopts a historical-educational research methodology regarding the analysis of the contemporary problem of stress experienced by the female participants in the primary and secondary educational milieus. Thus, the problem is examined historiographically from a time perspective. This research may lead to insight as to how women and girls in the past and present, like all humans and creatures equipped with a stress response mechanism since earliest times, faced and continue to face life's pressures, manifest stress disorders and cope with stress (Shors, Pickett, Wood & Paczynski 1999: 163-171).

Historical research methodology or *historiography* has proven useful to psychological research and counselling professionals (Gladding 1985: 325-331; Engels 1980: 183-185). According to Sheeley (2002: 1), Sigmund Freud, for example, found it useful to interpret the past with a view to making recommendations for the future. Thus, since stress is a psychological condition, this research project analyses the aetiology, manifestations and coping mechanisms with regard to stress experienced by female participants in the past and present primary and secondary educational milieus with the aim of finding an educational solution to the problem.

A growing awareness of the need to manage stress has resulted in an ever-increasing body of research on the topic. If this chronic bio-psycho-socio condition is not properly dealt with negative emotional, cognitive, behavioural and physical manifestations emerge (Kruger 1992a: 2; Exclusive Recuperator 1996: 3; Interviews 13, 18 & 24, Klos 1995: 3; Greenberg 1995: 4; Roche Barocca 2001: 1; Naidoo 1996).

The Canadian physiologist, Dr Hans Selye (1907-1982), considered the pioneer of stress research, published the first scientific paper to identify and define *stress* in 1936 (Corsini 1975: 147-148). His investigation of the phenomenon popularised the work of the American physiologist, Dr Walter Cannon (1871-1945), who began his investigations in 1896 (Burns 1988: 7).

Selye highlighted stress as an automatic physiological response to a threat or *stressor* that occurs in people today as in the past, since their psychobiological inheritance has not changed since the earliest times (Hanna 1990: 4; Ardrev 1961: 12; White & Brown 1973: 34, 11). Although a problem for both male and female participants in the educational milieu, this research focuses on the stress phenomenon from a female perspective. This is useful since the male perspective tended to dominate research in the past. For example, psychology and history has often ignored a female perspective (McClelland 1992: 4; Matlary in *Feminism beyond the power struggle* 1996: 16; Williamson-Fien in Söhng & Arjun 1996: 91; Swann 1992: 1, 3, 201, 233; Schützenberger 1993: 11-200). The female perspective adopted by the researcher in this inquiry arose out of a need to modify a paradigm (*African National Congress* 1995: 72) where:

Knowledge ... is construed as a male-dominated activity (for example, history as a record of the exploits of males).

1.2 ELUCIDATION OF THE CORE CONCEPTS OF THE RESEARCH

The key concepts of the research project are: *female participants*, *primary and secondary education milieus* and *stress*. The following paragraphs will clarify and define these concepts.

1.2.1 Female participants

Female participants refer to women and girls, who are the educators (mothers, teachers and child-minders) and child-learners, taking part in the education situation. These participants actualise themselves within the social context of the informal or home and formal or school learning situation, both being embedded in a wider socio-cultural reality (Kruger 1992b: 52-54, 57-58, 92-96). According to Coetzer and Le Roux (1996: 85), adults are supposed to:

...(structure) conditions under which children - our so-called hope for the future - can be raised to become happy, caring, well-balanced and responsible adults.

This research will study how stress may affect the fulfilment of the educational ideal described above with regard to female participants. For, the realization of this aim is to a large extent

determined by the health of females as primary and secondary educators as well as that of female learners who ‘in many cultures are devalued, deprived of human dignity and are subjected to unequal treatment’ (Coetzer & Le Roux 1996: 84). Moreover, female stress may be universally inherent in the past and present educational milieus.

1.2.2 Primary and secondary educational milieus

The *primary* educational milieu is the first, ontic and original environment of the home, where the child is led towards adulthood by his/ her parents or other primary care givers. According to Kruger (1992b: 54), the family ‘forms the basis of the child’s personal world of experience as well as the social and educational structure in which he/ she develops to adulthood. Representing a microcosm of society, the child forms his/ her self-concept and general ideas (including those regarding gender) ‘through his/ her social role within the family’ (Kruger 1992b: 56). The *secondary* educational milieu is the post-scientific educational environment of, for example, the school, (derived from *schola*, the Latin term for ‘learned investigation’), a formal institution of learning. The latter develops, reinforces and broadens, through formal teaching, and is an extension of, the education begun in the home (Kruger 1992b: 52, 56; Heinemann 1979a, s.v. “education”; Swann 1992: 3).

The term *education* is derived from *educio*, which is Latin for *to draw out* or *lead*, that is essentially the accompaniment of a child by adults on the road to adulthood, as the formal and ultimate or total aim of education (Gunter in Du Plooy, Griesel & Oberholzer 1982: 22). On the other hand, the term *milieu* is a French word and denotes environment, (social) surroundings, and state of life (*Concise Oxford* 1984b, s.v. “milieu”). The *educational milieu*, therefore, implies the particular circumstances or conditions surrounding the helping of the child as an individual to learn and become an adult. It is a social reality, which ‘indicates an existence as part of social relationships, and is embedded in the wider social reality of the wider human community’ (Kruger 1992b: 53). Thus, education in both the primary and secondary milieus involves the transferring of values, culture and knowledge, either inside the family or in the community of the school and society (Kruger 1992b: 52-61). In this inquiry, the researcher proposes to study both milieus in her investigation of stress in women and girls of various societies throughout history.

1.2.3 Stress

The term *stress* derives from the Latin *strictus* the perfect participle passive form of the verb *stringo* meaning *to draw tight*, as well as *to affect or pain (the mind)* (Heinemann 1979b, s.v. “stress”; Collins 1972, s.v. “stringo”; Kruger 1992a: 2). The term was used as early as the Middle

Ages century to mean *hardship, crisis, adversity, affliction and distress* (severe pressure of pain, sorrow, anguish) and is derived from the Middle English word *destrasser*, (from the Old French *estresse* meaning narrowness, oppression) (Corpus 2003: 1; *Concise* 1984c, s.v. “distress”). Only since the late 17th century has *stress* been used in the context of physical science to denote pressure exerted on material objects. The term used frequently in westernised contemporary society denotes the psychological ‘disease’ that impairs effective teaching and learning on the part of girls and women today. In this context stress is an affective disorder that can be debilitating and lead to physical, emotional, behavioural and cognitive manifestations of distress (McDonald & Van der Linde 1993: 141; Burns 1988: x; BehaveNet 2002a, s.v. “stress”; Sacom News 1996: 25; Reddy 1996: 19).

1.2.3.1 Stress models

Different models describe the stress phenomenon.

(i) *The stimulus model*

This model views stress in terms of various sudden events or long-term circumstances, which might provide the *stimulus* for a stress reaction (Appley & Trumbull 1986: 34). These potential sources of stress, called *stressors* in the individuals concerned, may be found in society and culture at macro-level; the family or school at meso-level; or within the individual at micro-level (Kruger 1992a: 91). Lazarus (1966: 62; 1990: 3-51) distinguishes between life stressors and daily event stressors. Furthermore, many researchers including Beutrais, Fergusson and Shannon (in Papalia & Old 1993: 273), Coddington and Chandler (in Kruger 1992a: 74-75) and Burns 1988: 36) consider major, non-routine life-events as the main stress stimulus, such as:

- * Moving to a different house
- * Changing employment, school or scholastic grade
- * Serious or prolonged disagreement between family members
- * Death of a close friend, close relative or parents
- * Increased or serious financial problems
- * Unemployment
- * Divorce or separation
- * Reconciliation of parents after divorce or separation
- * Sexual problems
- * Abusive relationships
- * Serious illness or accidents suffered by parents, siblings or other family members
- * Pregnancy

- * Arrival of a new baby or addition of a new family member
- * Hospitalisation
- * Trouble with the law
- * Academic failure or learning problems in school
- * Failure at school
- * Acquiring a visible deformity, speech, hearing or vision problems
- * Becoming involved with drugs or alcohol
- * Frequent absence of one or both parents
- * Foster home placement
- * Change in a child's acceptance by peers

The stressful life events scale is often used by mental health workers. The following is an adaptation of the *Life Change Index* devised by Holmes and Rahe (1967: 213-218):

Events	Scale of impact
Death of partner	100
Divorce	73
Separation from partner	65
Jail sentence	63
Death of a close family member	63
Injury or illness to yourself	53
Marriage	50
Retrenchment	47
Reconciliation with partner	45
Retirement	45
Ill health in member of family	44
Pregnancy	40
Sexual problems	39
Addition of new family member	39
Major business or work changes	39
Change in financial status	38
Death of a friend	37
Change to a different type of work	36
More arguments with partner	35
Take on a large mortgage or loan	31
Mortgage or loan foreclosed	30

Change in responsibilities at work	29
Child leaves home	29
Trouble with in-laws	29
Outstanding personal achievement	28
Spouse begins or stops work	26
Child begins or ends school	26
Change in living conditions	25
Change in personal habits	24
Trouble with boss or employer	23
Change in working hours or conditions	20
Change in residence	20
Child changes schools	20
Change in religious activities	19
Change in social activities	18
Change in sleeping habits	16
Change in number of family get-togethers	15
Change in eating habits	15
Holidays	13
Religious holiday	12
Minor violations of the law	11

Holmes and Rahe, scientists at the University of Washington in 1967, based the above Social Readjustment Rating Scale, on a study of 394 individuals. According to Holmes and Rahe, the higher the score, the greater is the risk of developing stress related symptoms. Of those with a score of over 300, almost 80 percent will manifest stress in the near future. About 50 percent of the people with a score of 200 to 299 usually suffer distress soon. About 30 percent of the people with a score of 150-199 will eventually succumb to stress. A score of less than 150 indicates a low chance of manifesting stress. Nevertheless, a score below 50 may indicate that there may be too few stressors and a chance of stress from boredom (Mindwaves Institute 2002: 1; Musikanth 1996: 16):

(ii) *The response model*

This model, unlike the *stimulus model*, focuses on the individual's reaction to stress. According to this paradigm, people today react to stressors according to the same automatic physiological *response* as primitive man (Slaby 1991: 34). Selye (in Lau & Shani 1992: 461; Musikanth 1996:

19, 38) defines this bodily change as the *general adaptation syndrome*, also termed the *fight or flight syndrome*. Selye (in Lau & Shani 1992: 461) divided this response into the *alarm*, *resistance* and *exhaustion* stage. According to Selye, the *alarm* reaction appears to stimulate the mind, as well as the body, to cope with the stressor. It involves the following reactions:

- The front section of the brain receives stimulus from the sense organs.
- The hypothalamus, a part of the brain, activates the pituitary gland to release hormones, as well as the involuntary nervous system, which then sends signals via nerves to various parts of the body.
- The adrenal glands release the hormones adrenaline, noradrenaline and cortisone, leading to the bodily changes, outlined in the following points:
 - The individual becomes mentally and sensually alert.
 - The individual's breathing rate speeds up and nostrils and air passages in the lungs open wider, to get air in more quickly.
 - The heartbeat speeds up, blood pressure rises, the liver releases sugar, cholesterol and fatty acids into the blood, to supply quick energy to the muscles
 - Increased perspiration to cool the body.
 - The body's blood clotting ability increases, preparing for possible injury.
 - The muscles of the bladder and bowel openings contract, and non-life supporting activity of body systems ceases temporarily.
 - The immunity responses decrease, which is useful in the short term, to allow massive response by the body, but this is harmful over a long period.

If the body remains in this state of arousal for a prolonged period of time, without burning up the stress hormones and chemicals in *fight or flight* activity, it would enter the *resistance stage*. The body continues to withstand the stressor, even after the latter has disappeared, and does not return to a state of relaxation, homeostasis or balance. Physical and emotional resources are placed under strain and begin to *burn out* as the psychologists term this occurrence. When all internal resources for managing the stress are used up, the *exhaustion stage* is reached. This results in total burnout or physical and mental overload. The human body will rebel against this condition in the form of physical, emotional and behavioural disorders. The individual feels unable to cope with feelings of stress and pressure (Burns 1988: 2, 3, 5, 8, Kruger 1992a: 62; Musikanth 1996: 38; Interview 18; Arnot Ogden Medical Centre 1999: 1; *European College of Neuropsychopharmacology* 1999: S207-S253; Burns 1988: 6-8; Slaby 1991: 40-42). Moreover, according to animal research, negative stress response in females that impedes learning is often more likely than in males, due to higher estrogen levels that continue to increase with negative

stress. Although this research involved animals, it may be possible to assume that a similar stress response takes place in female humans (Shors *et al* 1999: 163-171).

The response model prioritises the functioning of the *hypothalamus*, a region in the forebrain that balances and coordinates automatic functions on which bodily health depends. According to Deepak Chopra, contemporary proponent of mind-body health, one can consciously control the particular mind-body mechanism that involves a stress response. Chopra believes that individuals are able to manage their stress response via various coping strategies such as meditation and certain dietary measures (Chopra 2001: 25, 26, 111, 112, 188, 235).

Whatever factors may contribute to an individual's particular stress response, if the initial stress reaction to a stressor does indeed lead to negative manifestations of stress, then one can be sure that stress had not been successfully handled. In that case, stress would have become dysfunctional *distress*, which is 'beyond the real or perceived carrying capacity of the individual's physiological, psychological or social systems' (Appley & Trumbull 1986: 43). In other words, if a *stressor* is perceived in a negative light or if stress continues for an extended period or is too easily triggered, then it becomes *distress*. On the other hand, if the individual adaptively copes with stress and sees a stressor as a challenge, not a threat, then it becomes *eustress*, which promotes personal and social growth (Selye in Appley & Trumbull 1986: 7; Hanna 1990: 8-9; Burns 1988: x). According to Selye (in Hanna 1990: 8-9), *eustress* is essential to our lives because it provides us with the energy to deal with life successfully.

(iii) *The transactional model*

The *transactional model* was first described by Lazarus, an American psychologist, in the 1950s. According to this model, an individual's initial stress response to a stressor may depend on various factors. Examples of these factors are: the amount, timing and type of stressors encountered; the individual's personality; mental and physical health; self-concept; cognitive processes; specific beliefs; values; needs; motives; expectations; economic status and social support. Other examples include: interpretation of past experience; perception of one's ability to cope with stress; specific coping strategies; locus of control; whether one is already under stress; relationship skills; adaptability; social skills; genetic disposition and social development. The development of this model paralleled a gradual movement in psychology from normative research to an increased emphasis on individual differences. Whether a stressor is stressful or not depends on the individual's experience of it (Burns 1988: 3-4, 44; Lazarus, Deese & Osler 1952: 293-317; Kruger 1992a: 136-137; Johnson in Woodbridge 1998: 60). Moreover, experiments have shown that if these factors that influence perception and coping styles, are

manipulated and adjusted, it is possible to alter the individual's perception of a stressor. This perception will influence the ability to deal with stress and, ultimately, his/ her resilience to stress (Louw 1994; Slaby 1991: 88).

The *transactional model* may offer particular insight into the problem of stress in girls and women in the informal and formal educational situation. Gender-related social, biological and psychological differences may determine the stress experienced by female participants in the primary and secondary educational milieus.

Most contemporary psychological and biological perspectives on stress disorders have adopted a stress-diathesis model that focuses primarily on the vulnerability factors that predispose some individuals to stress disorders in the face of life's stressors (BehaveNet 2002b, s.v. "stress-diathesis").

Research in the US has shown that females have higher levels of the stress hormone *cortisol* than men do when confronted by a stressor. This research involving 22 women and 19 men investigated their stress response to media violence. Research revealed that most harmful of the stress hormones *cortisol* suppresses the immune system and prolongs the negative effects of others hormones such as adrenaline and noradrenaline (The Dove Foundation 2003: 1). Moreover, the biological predisposition to stress in females is also due to a generally lower serotonin level. Serotonin is a brain chemical or *neurotransmitter molecule* that carries information (*neurotransmission*) to and from brain cells termed *neurons* Scientists have been able to identify specific neurotransmitter abnormalities in a number of psychiatric disorders. Since serotonin regulates mood, sleep, appetite and aggression in animals and human beings, lower levels of this neurotransmitter has been linked to depression and many other stress disorders (Brizer 1993: 145-148; Leibenluft 1999: 29; *Science of Sin* 2002; Williams 1998: 95-96).

Lower serotonin levels could possibly be linked to the low social status of women and girls throughout history. Animal research using animal models (monkeys) has shown that those with a high social status have higher serotonin levels than those who are subordinate. Moreover, serotonin levels increase if subjects are allowed to rise in status (Williams 1998: 95-96). It is, therefore, possible that females in contemporary patriarchal westernised and traditional societies will have low serotonin levels owing to generations of gender-related suppression. Moreover, these low serotonin levels will lead to various manifestations of stress underpinned by a belief in female powerlessness rooted in culture. Thus, in the face of further stressors, this belief in female powerlessness will lead to further perceived stress that may have biochemical effects. Moreover, emotional stress involves the release of corticosteroid hormones from the adrenal glands that may

prevent white blood cells from protecting the body from cancer and infection for example (Northrup 1998: 35).

Research in the US has indicated that manifestations of stress, especially depression are linked to gonadal hormonal change at particular stages in the female reproductive life cycle, when women and girls are particularly sensitive to psychosocial, environmental and physiological stressors that face them. Emotional stress in turn then causes, for example, an imbalance between oestrogen and progesterone manifesting in PMS and other biochemical changes in the body and mind (Mazure *et al* 2002: 13; Northrup 1998: 132). Sex hormones may explain the connection between the gender gap and stress disorders like anxiety disorders including Post Traumatic Stress Disorder (PTSD), eating disorders and depression. Moreover, female susceptibility appears to increase during pregnancy, after childbirth and during the perimenopausal stage of female life. Other female biological causes may be a gender dissimilar thyroid function, circadian rhythm patterns that regulate sleep and neurotransmitter (serotonin) levels that are affected by oestrogen (Blumenthal 2003: 1. National Institute for Mental Health 2003: 1).

Certain stress disorders may be genetically inherited. For example, there is a 25 % likelihood of clinical (major or unipolar) depression in 'first-degree relatives' but an even greater susceptibility in first as well as second-degree female relatives (Mazure *et al* 2002: 13; Kendler, Neale, Kessler, Heath & Eaves 1993: 863-870; Kendler, Thornton & Gardner 2002: 582-586).

Gender differences in diseases, such as breast cancer, cardiovascular disease and osteoporosis as well as in matters of health care (especially in developing countries) place special physical strain on females as opposed to males (Reproductive Health Outlook Organization 2003: 1).

Cognitive mediators also play a role in stress disorders. In women and girls, a cognitive style termed *ruminative thinking style* increases the risk for stress disorders like depression. A ruminative thinking style involves a repetitive and passive focusing on symptoms of distress and their possible causes and consequences. Ruminative thinking is also associated with longer and more severe episodes of depression (Gurnakova 2000: 75-86; Mazure *et al.* 2002: 16). Another cognitive style has been termed *unmitigated communion* that refers to the notion that relationships and empathy are central to the female self-concept. Although successful relationships are important to the male self-concept, other factors such as physical self-concept, social status, work success, competency, financial success, fortitude are often also very important with men and boys. Generally, these consistent psychological gender differences are most probably due to gender stereotypes and traditional socialisation practices that are prevalent in contemporary society (Kirsten, Roothman & Wissing: 2003; Hegelson & Fritz 2000: 1032-1057; Nolen-

Hoeksema 2000: 504-511). Women and girls with the characteristic of *unmitigated communion* take on others' problems as their own and neglect the self in efforts to please and serve others. This style has been associated with stress disorders and may help to account for gender difference in depressive manifestation (Mazure *et al* 2002: 17).

Generally, women and girls display an unassertive personality that tends to be passive (Pease & Pease 1999: 8, 12, 14, 16). One of the theories put forth by Boone, de Branbender and van Witteloostuijn (1999: 343-377) is there is reason to support the *locus of control theory* developed in 1966 by Rotter. According to this theory, personalities who believe in external forces controlling their lives see themselves as passive and helpless. Personalities who display an internal locus of control believe that they are in command of their lives (Boone *et al* 1999: 343-377). According to research in the US, assertive females cope with stress, such as that experienced in giving an impromptu speech. They perceive and cognitively appraise stress as a challenge to which they respond with various effective coping strategies. On the other hand, unassertive women and girls view feelings of stress as a threat to which they respond with residual feelings of stress and negative emotions (Tomaka, Palacios, Schneider, Colotla, Concha & Herral 1999: 1006-1021). Certain personality disorders more widespread in women and girls are mediators for stress disorders such as depression. For instance, the personality disorder *neuroticism*, common in females, can lead to affective disorders such as dependent personality disorder and depression (Widiger, Verheul & Van den Brink 1999: 347-366).

Many typically female psychological traits can be observed in both contemporary and past societies. Even though they may be stereotypical as Bennet (1993: 174) points out, there is validity in 'generalization' and 'continuity in women's history'. According to Bennet (1993: 174), there is also a 'need to historicize patriarchy' in particular. In other words, many of these typically personality characteristics have been observable in past and present patriarchal society in particular. Whether these gender-related psychological stress mediators are due to nature or nurture is debatable. Possibly, both nature and nurture are responsible for these typically female personality characteristics. For most of history, female participants in the primary and secondary educational milieus of patriarchal societies have been regarded as second-class citizens. This negative social perception of femaleness may have, thus, been responsible for female psychological and biochemical vulnerability, since low status lowers serotonin levels may cause women and girls to become more submissive, to collude in their own oppression and perceive stress as inescapable when faced with possible causes of stress (Williams 1998: 95-96; Northrup 1998: 35).

1.2.3.2 Causes of stress

The aetiology of stress could be rooted at macro-level in society and culture, at meso-level in the informal and formal educational milieu and micro-level in the individual psychobiological and social self. In the case of female participants in the learning situation, gender-related biopsychosocial factors may predispose vulnerability to stress syndromes. These factors may be directly related to many causes of stress and rooted in a negative perception of femaleness at macro/meso /micro-level linked to basic psychobiological and social gender differences regarding the natural and the nurtured female identity as the nurturer of society.

1.2.3.3 Manifestations of Stress

According to Rohrbaugh (1981: 396), a 'pattern of emotional distress is...more likely to occur in females than in males'. These gender-related symptomatic differences appear already in childhood, when boys are 'aggressive, destructive, antisocial and competitive', whereas girls reveal 'personal attitudes and feelings such as excessive fears and worries, shyness and timidity, lack of self-confidence, and feelings of inferiority'. In adulthood, male symptoms of stress manifest themselves as 'destructive hostility towards others and pathological self-indulgence', and female manifestations may be 'destructive hostility and criticism aimed at the self ... self-deprecation, depression, and suicidal thoughts and actions'. Nevertheless, certain manifestations of stress may be observed particularly in females. Examples of these are indicated in the following list:

(i) *Physical manifestations*

- * Insomnia or hypersomnia
- * Tearfulness
- * Psychomotor agitation or retardation
- * Weight loss or gain or decrease or increase in appetite
- * Heart beating fast
- * Trembling or shaking
- * Grinding of teeth or nail biting
- * Asthma
- * Menstrual problems
- * Stomach pains, indigestion, heartburn, constipation, diarrhoea or flatulence
- * Headaches, migraines or tension headaches
- * Fatigue, constant tiredness or waking up feeling tired

- * Nose-bleeding
- * Excessive sweating without exercising or sweaty palms
- * Dizziness, wobbly legs or fainting spells
- * Nausea
- * Auto-immune diseases such as rheumatoid arthritis and multiple sclerosis
- * High blood pressure or hypertension
- * Muscle pain, weakness or spasms (back, neck shoulders, chest or limbs)
- * Tachypnea (rapid, shallow and difficult breathing) or hyperventilation
- * Frequent urination or incontinence
- * Frequent vomiting
- * Throat irritations
- * Difficult breathing or breathlessness without exertion
- * Skin disorder including intense itching and hives
- * Dry mouth
- * Dental problems
- * Nervous twitches
- * Impotency or frigidity
- * Peptic ulcers
- * Frequent infections
- * Susceptibility to viruses such as colds and flu
- * Speech problems, stammering, stuttering
- * Diseases such as leukemia, heart disease

(ii) *Emotional manifestations*

- * Lowered self-confidence and self-esteem; feelings of worthlessness
- * Irritability, ill temper and aggression
- * Suicidal attempts or ideation or recurrent thoughts of death
- * Pessimism or negativity
- * Jealousy or envy
- * Moodiness or mood swings
- * Feelings of sadness
- * Feelings of emptiness and boredom
- * Feelings of hopelessness
- * Diminished pleasure in all, or almost all activities
- * Lack of motivation
- * Anxiety

- * Indecisiveness and uncertainty
- * Wanting to withdraw, feeling shy or socially inept
- * Extreme self-consciousness or self-criticism
- * Feelings of frustration or quickly frustrated
- * Sensitivity and touchiness
- * Feeling panicky
- * Use of denial and avoidance
- * Suspiciousness
- * Anger (chronic or suppressed)
- * Excessive or inappropriate guilt
- * Emotional numbness and inability to laugh or cry readily
- * Reduced initiative or lack of risk-taking behaviour
- * Feeling overwhelmed by demands and unable to cope
- * Dread of getting out of bed or of the future or of disease
- * Hysteria
- * Obsessions
- * Phobias; paranoia
- * Fear of failure
- * A feeling of being the target of other's animosity
- * Emotional overreaction

(iii) *Cognitive manifestations*

- * Absent-mindedness, forgetfulness or memory loss
- * Diminished ability to concentrate
- * Setting of unrealistic goals
- * Confused thoughts
- * Diminished ability to think deeply; poor judgment

(iv) *Behavioural manifestations*

- * High-pitched, nervous laughter
- * Inability to sit still without fidgeting
- * Accidental injury or accident proneness
- * Academic failure or lowered academic performance
- * Sleep disorders such as nightmares, insomnia, frequent waking or hypersomnia
- * Less involvement with others, social ineptitude or anxiety

- * Relationship problems
- * Inability to complete tasks before beginning the next
- * Impulsive behaviour
- * Restlessness or inability to relax or observable psychomotor agitation
- * Obsessive and compulsive behaviour
- * Abuse of or addiction to substances such as alcohol, cigarettes and drugs
- * Inability to show feelings
- * Incessant talking or talking quickly
- * Daydreaming or retreats from reality
- * Procrastination
- * Wasting time on irrelevant activities
- * Reduced productivity or inefficiency
- * Easily startled
- * Argumentative behaviour
- * Frequent screaming
- * Frequent swearing
- * Emotional, verbal and physical aggression and abuse
- * Exaggerated gestures and body language
- * Regressed behaviour
- * Tardiness; observable retardation and slowness of movements
- * Loss of sense of humour
- * Burnout or inability to function
- * Absenteeism, truancy or running away
- * Eating disorders including anorexia nervosa and bulimia nervosa
- * Sexual dysfunction

The above list was adapted from various sources. In particular, the American Psychiatric Association's 4th Diagnostic and Statistics Manual clusters many of the above symptoms into stress disorders such as Major Depression, Bi-polar disorder and Post-traumatic Stress Disorder (Hull 1999: 87-88; Kruger 1992a: xxiv, 143; Burns 1988: ix; Slaby 1991: 40-41; Kruger 1994: 231-232; Papalia & Old 1993: 469; American Psychiatric Association 2000: 1-943; Chopra 2001: 114, 157, 201).

1.2.3.4 Coping mechanisms for stress

According to Burns (1988: 75), an individual may not be able to avoid all stressors, eradicate a stress response or even remove stress vulnerability or other factors that influence stress levels.

However, an individual may be able effectively to manage the stress that he or she experiences. This may be achieved through, for example, an awareness of the phenomenon in one's personal life, including the stressors faced, one's manifestations of being under stress and knowledge of strategies to deal with feelings of pressure and strain (Burns 1988: 75-211). In other words, coping mechanisms will affect individual stress levels and provide relief from negative stress. Effective stress management means being in control of one's responses to life. As Bertrand Russell (in Slaby 1991: 7) said:

It is not the experience that happens to you; it is what you do with the experience that happens to you

Stress management techniques should be taught to and learnt by all children and adults since stress is a common problem. Kruger (1992a: 4) echoes the insight of many educationists when she maintains that the inability to cope with stress is detrimental to becoming adult. However, this research specifically examines the problem from a female perspective in order to identify coping skills that may be particularly useful to and mastered by women and girls. Educationists could play a role in this education and training. The aim of the research is to make recommendations regarding education for female stress coping strategies. The researcher hopes to arrive at these conclusions after gathering and describing the data concerning past and present females, including information about stress management strategies used both successfully and ineffectively in history.

1.3 FORMULATION OF THE PROBLEM

The following questions are formulated regarding stress experienced by female participants in the primary and secondary educational milieus:

- What is *stress*?
- Did the female participants in past primary and secondary milieus suffer from stress?
- If so, when and why did the problem originate?
- What were the causes, manifestations and coping mechanisms, with regard to stress, experienced by the female participants in the past primary and secondary educational milieus?
- Do the female participants in the contemporary primary and secondary educational milieus, suffer from stress?

- If so, what are the causes, manifestations and coping mechanisms, with regard to stress, experienced by the female participants in the contemporary primary and secondary educational milieus?
- What are the similarities and differences regarding stress experienced by the female participants in the present and past primary and secondary educational milieus.
 - Do female participants in contemporary primary and secondary educational milieus suffer more from stress than in the past?
 - What recommendations can be made for the future of education regarding the empowerment of women and girls participating in the formal or informal learning situation to cope successfully with stress?

Through this historico-educational investigation of the problem of *stress experienced by female participants in the primary and secondary educational milieus*, the researcher hopes to provide insight into the current problem and recommend guidelines for the future. Moreover, the following statement may serve as a tentative hypothesis for the problem under investigation:

Although stressors, manifestations of stress and coping mechanisms may have varied over time, stress is a universal and eternal problem in the primary and secondary educational milieus for female participants who are predisposed to this affective disorder owing to certain biological, psychological and social factors.

1.4. THE HISTORICAL-EDUCATIONAL RESEARCH METHOD

History of Education largely uses a systematic method that is mostly qualitative and inductive. The historical-educational research method involves the following interrelated research steps that continually reformulate and revise the hypotheses (Venter & Van Heerden 1989: 111-117; Sheeley 2002: 1):

- Identification, understanding and formulation of a problem
- Formulation of hypothesis
- Investigation of the problem in the educational past and present by means of data collection
- Analysis, interpretation and synthesis of data from primary and secondary sources
- Evaluation of data according to internal and external criteria to establish the validity, credibility and usefulness of the source material
 - External criteria establish validity and authenticity.
 - Internal criteria help establish the meaning of the content

- Final evaluation of hypothesis in the form of a written report
- Recommendations for the future of education

This historical research study deals with a topic of relevance to health scientists in general and experts in the field of gender-related educational psychology in particular. Historical research allows a blending of the past with the present, thereby allowing better speculation about the future both in terms of what will be and what should be. Historical researchers work with the past by searching for, rather than producing, new data. Much of what happened in the past remains submerged and implicit, even with the best historical inquiry. Thus, historical research in the health sciences including educational psychology is an alternative method that may not be as empirical and qualitative as that obtained from other methods, but is a legitimate and useful method of gaining knowledge (Sheeley 2002: 1).

The derivation of the term *method*, is the Greek word *methodos*, which means *a way of doing something; pursuit of knowledge*, from *meta* (with) + *hodos* (way) (*Concise Oxford* 1984a, s.v. “method”). The historical-educational research method refers to the way in which the researcher questions an educational problem. Unlike an approach, which presupposes a particular viewpoint, a method is a formal and systematic procedure. The research problem of stress in this particular investigation is informed by the historical-educational research method.

The point of departure of this particular research project is the problem of stress experienced by the female participants in the primary and secondary educational milieus. The problem-historical method is to be used in this investigation because it involves the selection of a problem in contemporary educational theory or practice, as the point of departure. The educational past is then examined, which will lead to a greater understanding of the current problem and the recommending of guidelines for the future of education. The past is ‘laid bare’ by the seeking of answers to questions arising from actual educational problems (Venter 1979: 167).

Literature and empirical studies will provide data for this research project. In the case of the former primary and secondary texts (articles, books, brochures, letters, symposia, talks, speeches etc) will be analysed for data concerning the research problem of *stress experienced by female participants in the primary and secondary educational milieus*. As for the latter unstructured interviews and observation will be the research techniques employed.

By means of both techniques of data gathering, relevant information will be extracted and used to support generalisations regarding the problem under investigation with a view to confirming or

rejecting the hypothesis and providing new insights and recommendations for the future of education.

Documents, films and audio recordings, that are eyewitness accounts of present and past events are some examples of sources that provide primary evidence for the researcher. Letters, speeches, symposia, talks, lectures, lessons, sermons, newspaper/ television/ radio reports are also exemplars of this type of primary evidence to be used in this research project. Unstructured interviews will be undertaken to obtain data relevant to this research project as these will be conducive to the obtaining of information about *stress*, often considered a sensitive and personal subject suited to idiographic research. Information and deductions regarding stress experienced by the female participants in contemporary primary and secondary educational milieus will be made by means of observation as well. An attempt will be made to define behaviour in specific and concrete terms, to be able to record observations systematically and objectively (Le Roux 1989: 87; Venter & Van Heerden 1989: 114).

Various textbooks, encyclopedias, dissertations, scientific journals, newspapers, magazines and other written or audiovisual documents will be consulted during the search for data. These sources are not first-hand accounts. They may be factual reports and may include interpretation.

1.5 DELIMITATION OF THE CHAPTERS

The following is an outline of the contents of the chapters in this thesis.

CHAPTER ONE: This is the orientation chapter, consisting of: an introduction; statements regarding the actuality of the research; the elucidation of key concepts, the problem formulation, the methodology; the delimitation of chapters and the summary.

CHAPTER TWO: This chapter will involve a historical survey of the causes, manifestations and coping strategies, with regard to stress experienced by women and girls in the educational milieu of early hunter-gatherer societies ($\pm 700,000-8,300$ BC).

CHAPTER THREE: In this chapter, a study will be made of the primary and secondary educational milieus of ancient Greece and Rome (± 1500 BC-400 AD) in the search for knowledge concerning stress in the female participants.

CHAPTER FOUR: In this chapter, the researcher will attempt an analysis of stress experienced by women and girls in the educational situation of the Middle Ages in Europe ($\pm 500-1500$).

CHAPTER FIVE: This chapter will involve an investigation of the educational milieus of the Industrial Era (±1750-1940) for evidence of stress experienced by female participants.

CHAPTER SIX: This chapter analyses the stress experienced by the female participants in the contemporary westernised and transitional-traditional primary and secondary educational milieus (1950- current).

CHAPTER SEVEN: This final (evaluation) chapter will involve an analysis of the findings, based on data surveyed in the retrospective and contemporary study (chapters two to six). In the light of these findings, conclusions will be made with regard the current problem, as well as recommendations for the educational future.

1.6 SUMMARY

In the preceding paragraphs, the researcher attempted to orientate the reader regarding the problem of stress experienced by female participants in the primary and secondary milieus. Stress, a current problem that was first systematically identified and described by Selye (1987-1982) may be essentially an ageless one because as Wittgenstein (1889-1951) maintains eternal factors underpin ever-changing temporality. A factor underpinning female stress may be inherited female biological, psychological and social identity that a historical analysis of the problem may reveal (Cf. paragraph 1.1).

The researcher explained the core concepts of the project in paragraph 1.2 to introduce the reader to the key issues. This included the matter of the female perspective of the study that has often been a neglected area of academic analysis (Cf. paragraph 1.2.1). The researcher also explained why the problem of stress in females deserves special examination since their natural identity as nurturers makes them necessary participants in the educational activity both at home and in formal situations of the primary and secondary educational milieus (Cf. paragraph 1.2.2). Since the topical concept of *stress* is complex, the researcher defined the condition and described the stress models and the notions of cause, manifestations and coping mechanisms regarding stress (Cf. paragraph 1.2.3, 1.2.3.1; 1.2.3.2, 1.2.3.3, 1.2.3.4).

In formulating the problem of stress experienced by the female participants in the primary and secondary educational milieus, the researcher asked specific questions regarding this past and present phenomenon (Cf. paragraph 1.3). These questions will direct the gathering and

description of data that will be evaluated in the final chapter of the project where the researcher will attempt to articulate answers to these questions.

In paragraph 1.4, the researcher explained the methodological aspects of her research project. The researcher chose the historical-educational research method for a study of the problem of female stress that could be effectively dealt with in the educational situation. The researcher believes that the problem is not peculiar to contemporary westernized society, and that historical-educational research might prove this essential truth as well as providing solutions to the problem that could be actualized in future educational milieus.

Certain periods and societies in the present and past were chosen as the field of research for this project that is limited to prehistoric hunter-gatherer society, Graeco-Roman antiquity, medieval Europe, the western world from 1750-1950, contemporary western society and to a limited extent, traditional indigenous South African society. In paragraph 1.6, the researcher delimited the field of study. In the ensuing chapters, the researcher aims to search for possible stressors facing women and girls in the educational present and past, manifestations of dysfunctional stress and adaptive and maladaptive coping strategies. Moreover, the researcher hopes to discern eternal and universal factors that determine negative female stress across time and in different societies with the aim of suggesting a solution to the problem.