

*“Though philosophers have traditionally been concerned with the pursuit of happiness, far greater wisdom would seem to lie in pursuing ways to be properly and productively unhappy. The stubborn recurrence of misery means that the development of workable approach to it must surely outstrip the value of any utopian quest for happiness”*

*- Proust*

The current research is titled: Influence of perceived attributes and perceived emotional climate on academic performance of students - An exploratory study. The researcher attempts to study a cluster of variables that fall broadly into two categories, based on their functioning. The first being beliefs defined as descriptive, inferential and imperative cognitions (Ellis, Dryden 2007) namely optimism, growth mindset, low frustration tolerance and metacognitive awareness of these beliefs. The second category consists of the components that contribute towards constructing the ‘emotional climate’ the learning environment as perceived by an individual learner, of the many factors that contribute, the current research focuses on the factors, namely – perceived peer empathy and perceived teacher empathy. The researcher proposes that a combination or a pattern formed by these variables determines the academic achievement of students. The researcher proposes that these variables exist on a continuum and the combination of these variables owing to the academic performance they result in can be termed adaptive and maladaptive. The researcher also proposes a skill building program developed along the lines of REBT principles (to enable the development of Optimistic explanatory style and high frustration tolerance), along with the Brainology (to nurture growth mindset) and exercises to cultivate metacognitive awareness. Such a skill building program aims to enable students to understand the concepts proposed to be deterministic of academic performance and empower them with tools to develop adaptive behaviour patterns to enhance academic achievement.

Education more often than not, is considered our passport to success and our question is, as education prepares to launch us into successful careers does it insure us against imminent failure. Does the education system nurture a culture where impaired

performance is not pitied, tabooed or just dealt with but is understood as a natural and necessary part of a learning process and equips students with skills to deal productively with this eventuality. The current research attempts to understand if education can include components that insure students against eventual impaired performance while enabling them to work to their maximum potential.

### **Countering the wear and tear of performance:**

Seligman 2007 in his book 'learned optimism' states that the way out of illness does not coincide with the way into happiness. He elaborates that often clients coming out of therapy experiencing relief from their anguish and distress, do not the next moment tumble into a state of happiness but rather a state of emptiness. The plan of action to achieve the state purpose/meaning back in to their lives as attempts to achieve happiness needs to be still chalked out. Performance is a continuous battle with many more instance of failure than success. The way out of failure is different from the way to success, especially if one is exiting a history of failure (who has not!). Consider the analogy of an individual who has just fallen on a running track, the skills even physical required to get back on feet are different from the one required to resume running. So also the mental skills required to counter the effects of failure are distinguished from the skills required to pursue success, as would be elaborated upon in the following sections.

In the discussion of each variable, it is generally found that each construct is extended on a continuum, with its adaptive and maladaptive extremes. It is more appropriate to understand the construct not in a narrow and judgemental purview of positive and negative extreme, instead based upon its suitability to a given circumstance term it as adaptive and maladaptive.

As the current research is an attempt to discern the patterns of behaviour based on the context of academic achievement and thus the discussion of each variable inclusive in the pattern would be along the continuum of adaptive-ness and maladaptive-ness.

### **Academic achievement an outcome of intelligence alone?**

The classical view of academic achievement was to consider it as a function of student's IQ a measure of inherent intelligence. An elaborate literature review of the predictors of academic achievement by Wang, Hartel & Walberg (1993), determined diverse factors that had been researched and received support in research findings of which cognitive ability of the student was the front runner.

The research spanning 50 odd years beginning with Thorndike (1963) pointed out the exact correspondence between intelligence and achievement. And continues to draw support for IQ as the predictor of Academic achievement (Farsides & Woodfield, 2003; Rindermann & Neubauer, 2001, Laidra, Pullmann, & Allik (2006), Deary, Strand, Smith, & Fernandes (2007) until recently. The strongest case perhaps for IQ was made by Herrnstein and Murray (1994), in their book *The Bell Curve*, where they showed that cognitive ability as measured by achievement test scores was not just related but in fact predictive of adult socioeconomic dimensions. Highlighting the long term influence of intelligence.

Researchers next began to examine the nature of this relationship and found that the correlation between intelligence and academic achievement is strongest initially during primary school and begins to decline thereafter being the lowest in college (Jensen, 1980). Cherniss (2000) mentions longitudinal study of 80 PhDs in science. The study found out that high IQ was decisive of gaining entry into higher education but thereafter the social and emotional abilities were four times more likely to predict professional success.

This is not to say that IQ is not important for academic success but IQ alone is not sufficient for academic achievement. This point of view was proposed by Wechsler 1940 who incidentally also developed the much popular assessment tools for measuring Intelligence in children and adults. Wechsler 1940 spoke about the importance of 'intellective' elements and 'non-intellective' elements which referred to three groups of factors – affective, personal and social. He states that "...the main question is whether

non-intellective, that is affective and conative abilities, are admissible as factors of general intelligence. ...that such factors are not only admissible but necessary. I have tried to show that in addition to intellective there are also definite non-intellective factors that determine intelligent behaviour. If the foregoing observations are correct, it follows that we cannot expect to measure total intelligence until our tests also include some measures of the non-intellective factors....”

The Perry pre school study that followed the influence of intervention in family environments of disadvantaged children with subnormal intelligence into their 40s. Among a sample of 123 low-income African-American children who were considered to be at high risk of school failure. Fifty eight of them were randomly placed in a group that had access to high-quality preschool program at ages 3 and 4, while the rest of the 65 were in a group that received no preschool program. Data was collected annually between the ages of 3 and 11 at which point the mean IQs of the experimental group that received the intervention and the control group were same. Data continued to be collected later at ages 14,15,19,27 and 40. The longitudinal study brought out marked difference and better performance on a variety of socioeconomic variables. Supporting the view that intervention had successfully targeted and changed for the better variables besides Intelligence.

Researchers Heckman, Stixrud and Urzua (2006) and Borghans, Duckworth and ter Weel (2008) were able to provide support for personality variables being just as powerful predictors of adult socioeconomic success as cognitive abilities.

### **Intelligence, stress and Academic achievement**

Verma, Sharma and Larson in 2002 published a study- School stress in India: Effects on time and daily emotions. Mentioned below are excerpts from the study –

“....Psychiatrists for sometime now have been expressing concern at the emergence of education as a serious source of stress for school-going children, leading to an incidence

of suicide deaths ..... Many adolescents in India are referred to hospital psychiatric units for school-related distress, exhibiting symptoms of depression, high anxiety, frequent school refusal, phobia, physical complaints, irritability, weeping spells, and decreased interest in school work .....

.....Fear of school failure is reinforced both by teachers and parents, resulting in children losing interest under too much school pressure. ....Indian studies reveal that school pressure is associated with general measures of anxiety, psychosocial disorders, and concomitant difficulties in the school learning situation.

.....It can be expected that this continuity of adult pressure, which the child receives from teachers in schools, tutors at tuition, and finally from parents at home, will result in negative emotions during the experience of homework.”

Verma, Sharma & Larson 2002, pointed out how Academic achievement in itself can be a stressor. They spoke of how while seeking admissions to highly competitive professional courses, the factor most considered is a good academic performance.

Malik & Balda 2006 state that –“A person under stress needs to fight the stress in order to survive. Adolescents whose minds are full of apprehensions are not free to use their energy and ability in achieving. There foremost priority is to nullify the effects of stress over their mind and they have to spend major part of their energy in this task. Hence a lot of highly intelligent children who are under mental stress give poor performance in academics.” In other words, children are constantly fire fighting and cannot be expected to be creative or even perform at their optimum potential.

Garg and Rastogi 2009, state that emotional intelligence along with high IQ played a vital role in determining the success of students both at personal and professional front.

Emotionally intelligent students are found to be “*more resilient to stress*” and tend to develop positive attitude within themselves. As their interpretive styles of perceiving stress empowers them (psychologically), their coping styles makes them resilient to stress. Other coping mechanisms, that utilizes behaviours like avoidance are associated

with poorer academic performance, students who are resilient to stress achieve higher academic performance compared with pessimistic students (Prola and Stern, 1984; Peterson and Barrett, 1987).

The above findings are in contingency with the study conducted by Rubin (1999) who stated that children who received high scores on EI (emotional intelligence) were rated by peers as less aggressive even teachers rated them as more “prosocial”, as compared to the students who scored low on EQ (emotional quotient) test. Healthy interpersonal relationships and ‘prosocial’ attitudes are properties associated with resilience that is being increasingly viewed as a principal factor for well being, as it allows for development and sustenance of positive social relationships and also persistent efforts leading to significant achievement.

Hoy, Tarter, Hoy in their study titled – Academic Optimism of Schools: A force for student achievement mentioned that stress occurred when people perceived that events were placing excessive demands on them. The degree of stress experienced depended on one’s perception. They further clarified that ‘perceptions’ and not ‘real events’ determined whether a given situation was experienced as an “*excessive demand*” or an “*opportunity*”. The ability to view a ‘real event’ as ‘an excessive demand’ or ‘opportunity’ depended on an individual’s “*interpretive habits*” which referred to specific thought patterns. Thus it were these interpretive habits or thought patterns that caused stress. If the interpretive style, were optimistic than the individual was resilient to stress.

In view of the myriad instances of stress experienced by a student who is being prepared to compete in today’s competitive scenario. It has become imperative to acquaint students with the concept of resiliency for confronting difficult events and immunizing them for future challenges Malik & Balda (2006).

## Optimizing conditions for achievement

The much believed and often endorsed view of achievement in schools is that success is a function of talent and motivation; the talented and motivated are high achievers (Seligman, 1998). Seligman suggested a third factor in success: optimism. He argued that optimism matters as much as talent or motivation in achievement. Also he emphasized that unlike talent optimism can be learned and developed.

### The role of Optimism

Seligman 2007 in his book *Learned Optimism* mentions the studies conducted along with Maier, Solomon (1969,70,76) proposed the model of learned helplessness to explain the surprising behaviour of dogs (who had been previously subjected to shocks they could not escape from), who failed to jump to safety when given (painful/safe) electric shocks in one of the experiments being conducted at Solomon's animal laboratory. Though, widely opposed by learning psychologists, who believed like the behaviourist that all learning is controlled by stimulus – response patterns and not cognitive abstractions which in the above case is “nothing I do matters”.

"...what reinforcement we may gain  
from hope.  
.. If not what resolution from despair  
..." John Milton, *Paradise lost*

The initial set of experiments consisted of subjecting laboratory dogs to “transfer” experimental conditions, which meant exposing the dogs to two kinds of stimulation-high pitched tones and brief shocks. The tones and shocks were paired, first the tone followed by the shock (allegedly not painful, more of a minor jolt). The objective being to associate the neutral tone to the noxious shock, so after repeated pairing, they would react to the tone as they would to the shock in fear.

The main part of the experiment consisted of taking the dogs to “two-compartment shuttle box”, a large box separated into two compartments by a low wall. The investigators aimed to see if dogs would respond to the tone the way they were responding to the shock and in the process jumped the barrier to get away. The

experiment was to gather support to the hypothesis that emotional learning could transfer and become generalized across a wide array of situations.

For this to be successfully tested the dogs had to first learn to jump the barrier when subjected to the shock. But what had ensued was uncharacteristic or even counterintuitive. Instead of jumping the barrier and avoiding the shock, the dogs lay whimpering and endured the shocks and refused to jump and escape.

The experiment was repeated and formed the basis of the theory of learned helplessness. Maier, Seligman (1976) designed to a 'triadic experiment' involving three groups of dogs yoked to each other. The first group was given a escapable shock, a shock that could be turned off by pushing a panel. The second group's shock giving device was yoked to the first so was unaffected by any behaviour of the dogs and would only be switched off when the first group would push the panel. The third group got no shocks.

After a few trials all dogs were replaced in order in a shuttlebox<sup>1</sup>, where every group would have the chance to escape the shock by jumping the low wall separating the two compartments. The hypothesis being that the dogs in the second group who were unable to escape the shock in the initial trials, would have 'learned helplessness' and would not jump the barrier and escape shock. The experiment was repeated on eight triads of dogs and of the eight that belonged to the second group, who initially could not do anything to control to the shock and thus were hypothesized to learn helplessness. Six of the eight dogs of the second group lay still enduring the shock as compared to the first group who had learnt to control the shock previously, all learnt to jump the low barrier to escape the shock.

The researchers compared the dogs' behaviours to the inmates of old age home, who learn that neither being docile or being demanding better their treatment and so give up, as they arrive at the understanding that nothing they do matters. The researchers also proposed an immunization to the condition of learned helplessness. Based on the dogs of

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<sup>1</sup> A wooden box divided into two compartments with a low wall, that can be jumped across.



the first group who learnt initially that, they could control the shock by pressing the panel initially and later in the shuttlebox by jumping the barrier. The researchers proposed that by teaching individuals that their responses mattered, immunized them from learned helplessness.

The experiment was repeated with human participants who were subjected to loud noise in three different groups (Hiroto, 1974). While the first group were able to control the loud noise by learning the combination of panel buttons that shut the noise off, the second group had access to the panel buttons, but no combination of pressing the button would turn off the loud noise, while the last group served as a control group.

The researcher then escorted the participants to another room, with a shuttlebox, when a participant placed their hand on one side they were subjected to an annoying loud noise and by moving their hand to another side of the box they could turn it off. The participants who had earlier experienced inescapable noise, remained immobile when exposed to the noise without trying to find a way to turn it off. The researchers inferred that these participants had carried their noise-helplessness to the new experimental condition, while the other two groups (control group and the one subjected to escapable noise) learnt to control the noise.

The research also highlighted that one in every three human participants remained immune to developing helplessness and one among every ten participants who belonged to the no shock (control group) remained immobile in the shuttlebox. These research findings were common in experiments conducted with varied nature of annoying stimulus and even in animals.

The learned helplessness model proposes the learned helplessness hypothesis that in an uncontrollable situation, organisms learn that behaviour and outcomes are independent, which leads them to develop cognitive, emotional and motivational effects of uncontrollability (Maier, Seligman 1976). The motivational effect of being exposed to uncontrollable situation is that that organism fails to initiate a response in novel situation,

remaining passive even in newer experimental conditions. The cognitive effect of exposure to the uncontrollable events seems to be that organisms fail to relate their responses to outcomes, even when their response does produce desirable outcomes they do not perceive them to be contingent upon each other and more importantly the organisms begins to expect uncontrollability of outcomes in later situations. The last of the effects of helplessness is the emotional price of anguish, depression or simply a larger than usual emotional disruption that accompanies the cognitive and motivational components of helplessness.

The two major arguments of the theory being, the first set of hypotheses (incompatible motor response theories) were based on the premise that the motor response learnt during the uncontrollable (inescapable) shocks interfered with the learning of the new motor response now required in controllable (escapable shocks) condition (Bracewell et al 1974). The second set of hypotheses (labelled motor deficit response theories) being that the uncontrollable (inescapable shock) is a severe stressor that releases a neurochemical that depletes the ability to initiate the motor response required in the next (escapable shock) condition (Weiss et al 1970).

The central argument against these theories as highlighted by Maier & Seligman 1976, is that the theories are based on the performance of the organisms i.e. they are inhibited physiologically from making the response required not necessarily from learning the contingency between their response and the reciprocating relief. Maier & Testa (1973) were also in addition to the above argument were able to demonstrate conclusively that, exposure inescapable shock condition produced an effect on associative processes (contingency between response and outcome) as well as motivational processes.

Having answered the main arguments against the theory, attention shifted to research findings itself. The exceptions of the research (organisms that remained immune to developing helplessness and organism that succumbed to helplessness even when exposed to previously controllable situations) now piqued the interest of the researchers to attempt to answer which of the individuals would be immune to developing

helplessness and who were prone to the condition. In their attempt to, understand the exceptional behaviours to the experimental conditions.

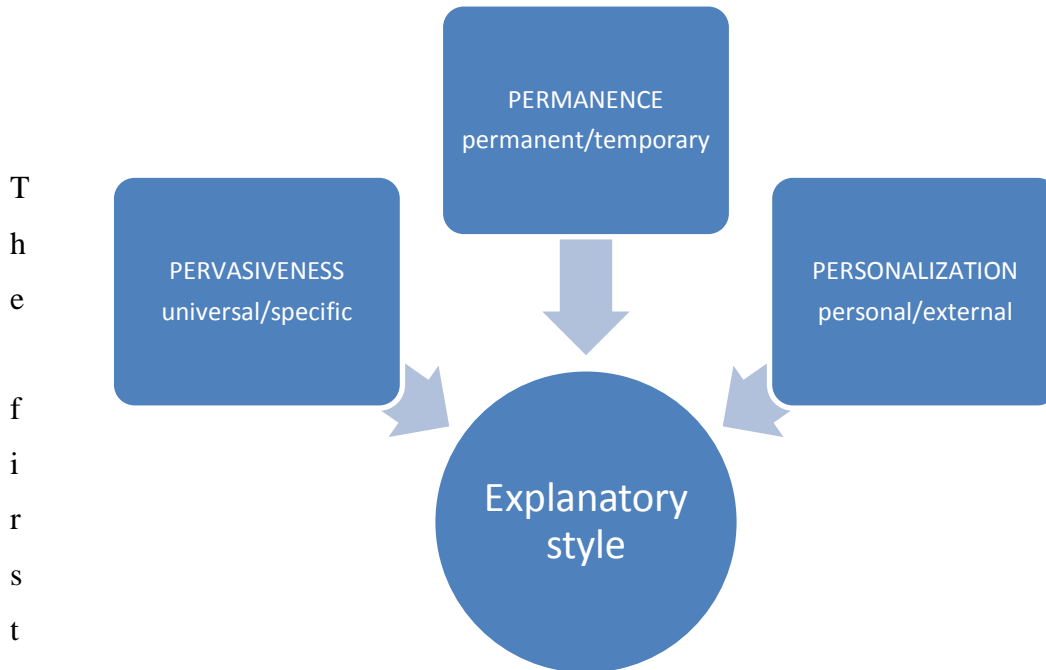
Seligman, Abramson & Teasdale (1979) tweaked the learned helplessness model and proposed that individuals developed or remained immune to the condition based on how they 'explained' the situation to themselves or in the researchers' terms attributed the cause of the helplessness to – stable or unstable, internal or external and global or specific. Wieners et al 1986 postulates that human behaviour is not controlled by “schedules of reinforcement” but how people construct explanations to understand the schedule of reinforcement in situ.

The attribution theory differs with the explanatory style as postulated in the learned helplessness model. While attribution studies achievement, learned helplessness focuses on mental illness and therapy, secondly attribution theory is situation specific, while learned helplessness indicates a habit or a repeated style of explanation. Lastly, while attribution theory enlists two dimensions permanence and personalization, explanatory style introduces a third one pervasiveness.) Thus reformulated attribution theory now decided the intensity of future helplessness being chronic or acute, whether generalization will occur and if helplessness will lower self esteem or not.

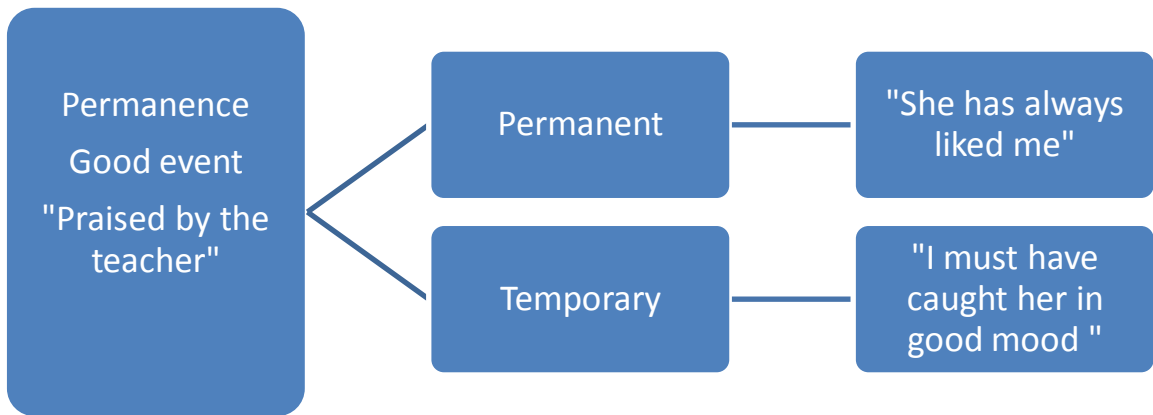
The researchers compared these findings regarding learning to be helpless in the face of trivial irritation to how individuals often responded to loss or rejection in their lives. They postulated that individuals have distinct explanatory styles (habits of thinking) that they use to interpret their situations, these explanations then directs their behaviours in the situations.

The explanatory style proposes three distinct dimensions that exist on a continuum namely – perseverance (specific vs. universal), permanence (temporary vs. permanent) and personalization (internal vs. external). The learned helplessness model postulates that the interplay of these continuums contributes to the development of a pessimistic

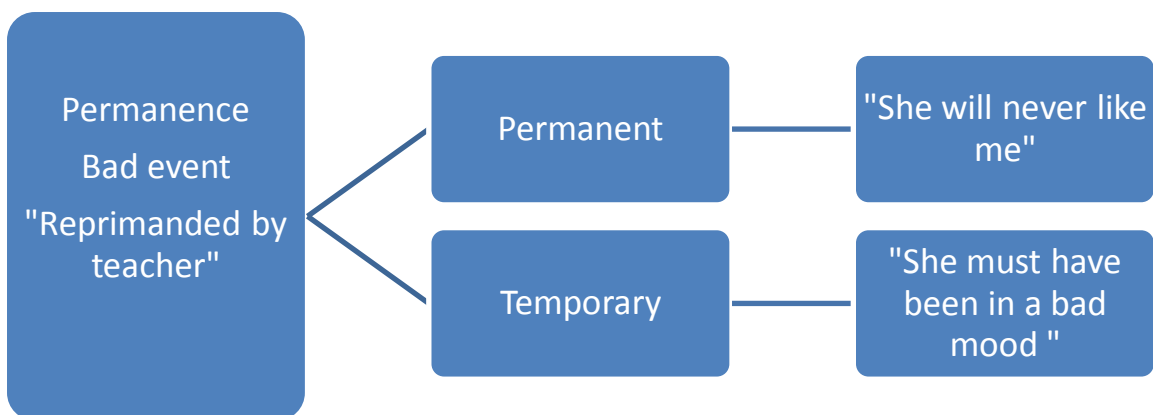
explanatory style or an optimistic explanatory style that then dictates the pessimistic or an optimistic outlook of the individual respectively.



The dimension of Permanence consists of two extremities, permanent and temporary. The theory postulates that individuals who tend to cease efforts in a difficult situation often view the event as insurmountable or permanent. While who don't succumb to helplessness view it as temporary occurrence.

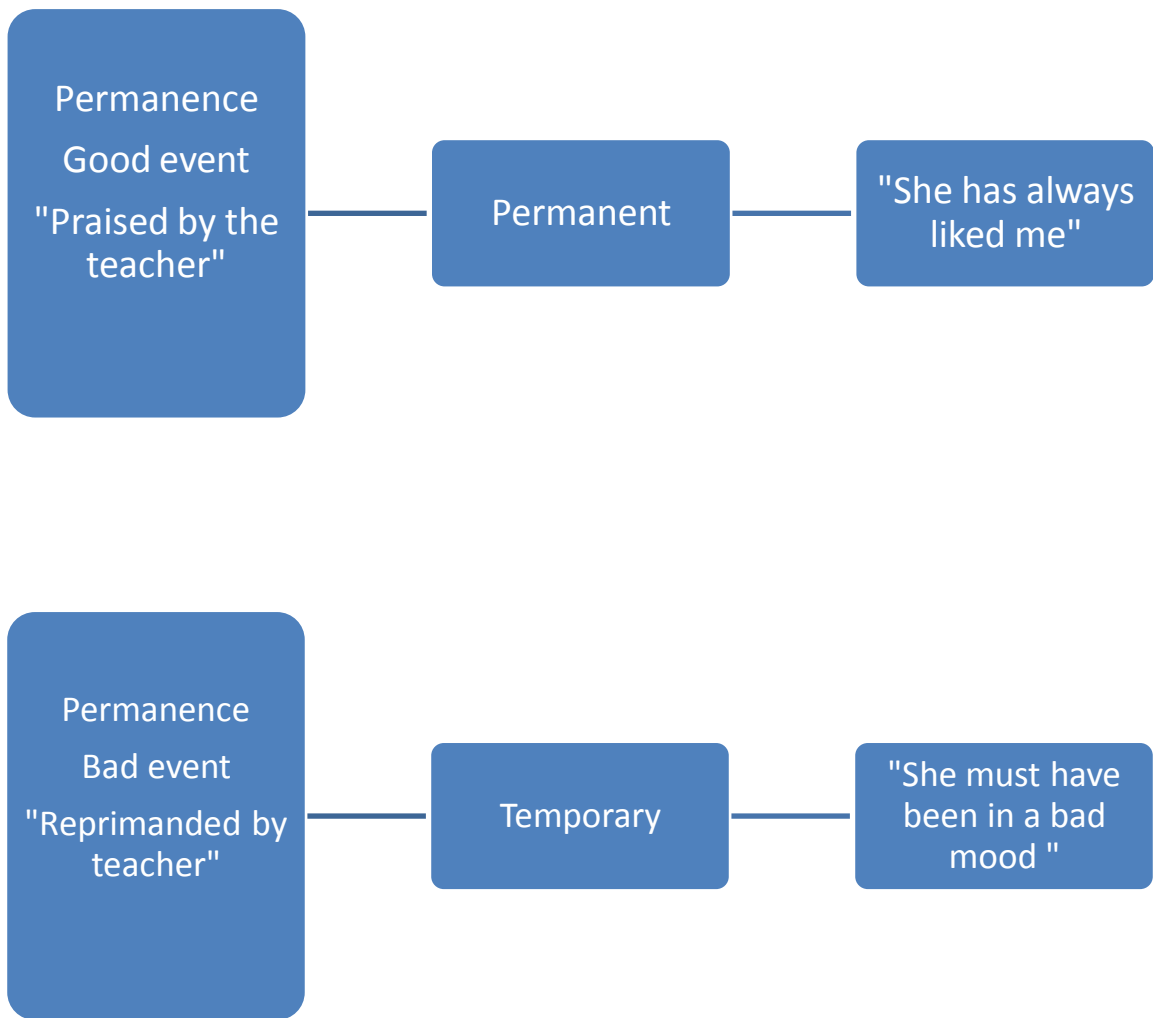


The dimension of Permanence decides the duration of the helplessness that is brought on by a setback. While for some it is momentary for others it could linger for days or even months after a minor setback. Thus response time for bouncing back if ever the individual decides to bounce back is prolonged.



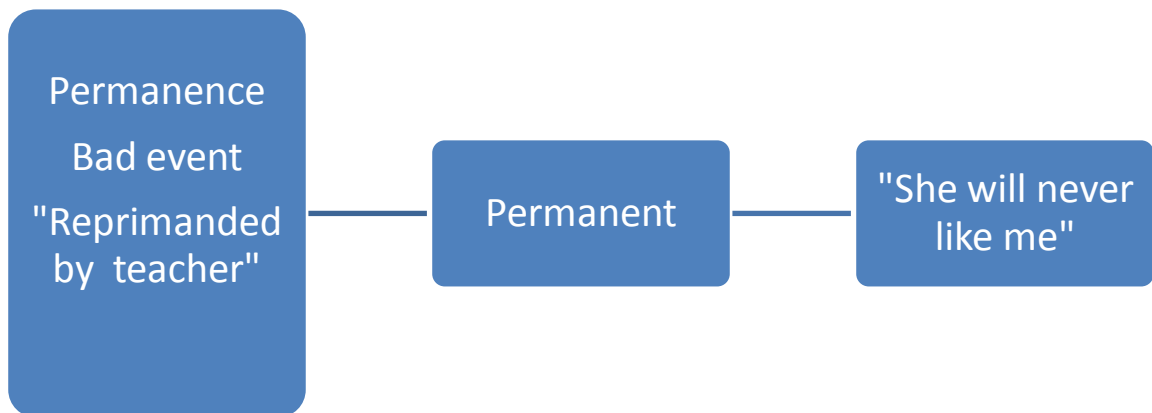
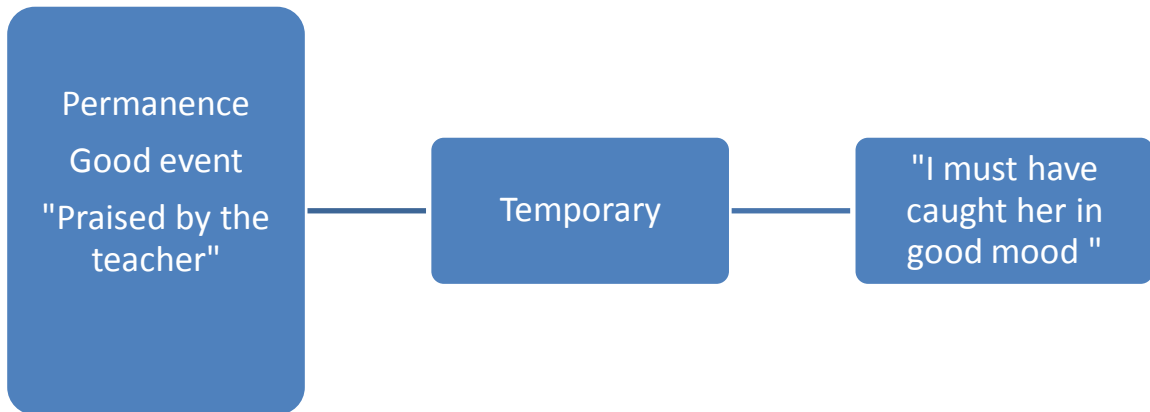
The optimistic explanatory style of explaining an event (good and bad) are diametrically opposite of the pessimistic explanatory style of an event (good and bad).

On the dimension of Permanence, the following example will illustrate the optimistic explanatory style for a good and bad event.



Thus the optimistic explanatory style along the dimension of Permanence attributes a good event to permanent cause and a bad event to temporary cause.

While the pessimistic explanatory style as illustrated below, does the attribution in reverse, i.e good event are attributed to temporary cause and bad event is attributed to permanent cause.

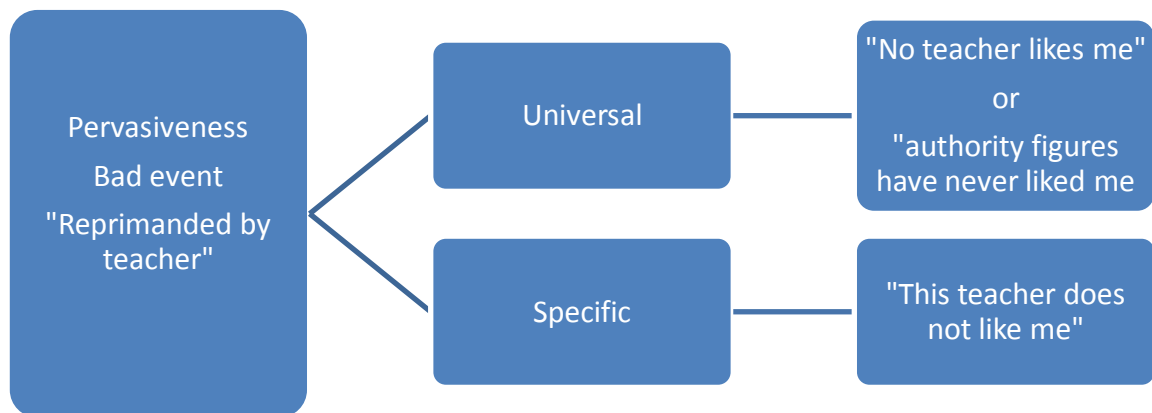


The second dimension is that of pervasiveness with specificity and universality being the two extremities of the continuum. While the first dimension spoke about the perceived length of time an (unpleasant) event would last, the dimension of pervasiveness talked about the extent to which the event would effect the rest of individual's life.

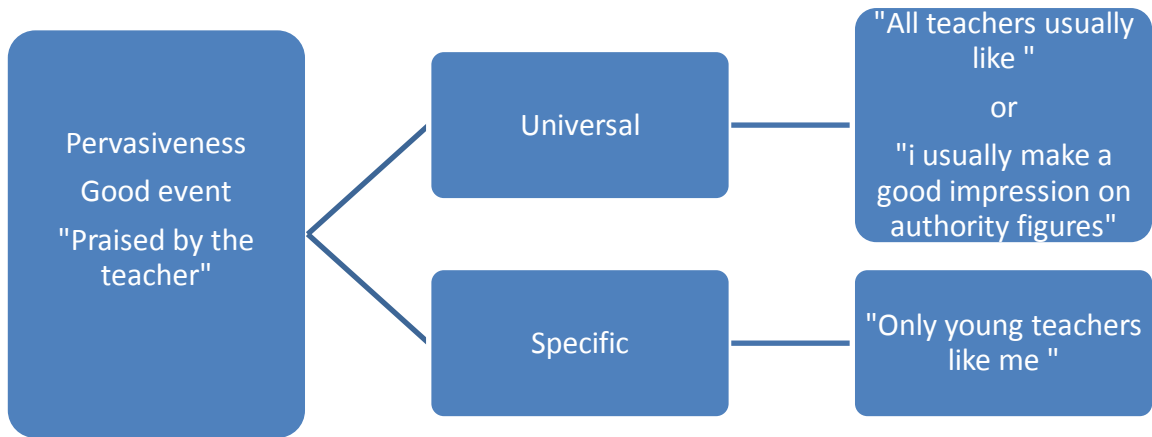
The theory of learned helplessness goes on to explain that when an individual engages in catastrophizing the cause of a perceived bad event, the unpleasantness of the event spreads over unrelated aspects of life as well thus multiplying the intensity of the unpleasantness experienced and reducing the ability to enjoy or engage fruitfully in other areas of life.

Instead of containing the damage the individual ‘universalizes’ the damage to healthier areas of life. The phenomenon of generalizing the cause of the bad event could occur at two levels within the category and across categories.

The opposite of ‘universal’ attribution of the continuum of pervasiveness is ‘specific’ attribution, wherein the unpleasantness of the event is contained to the area of life where the event is occurring.

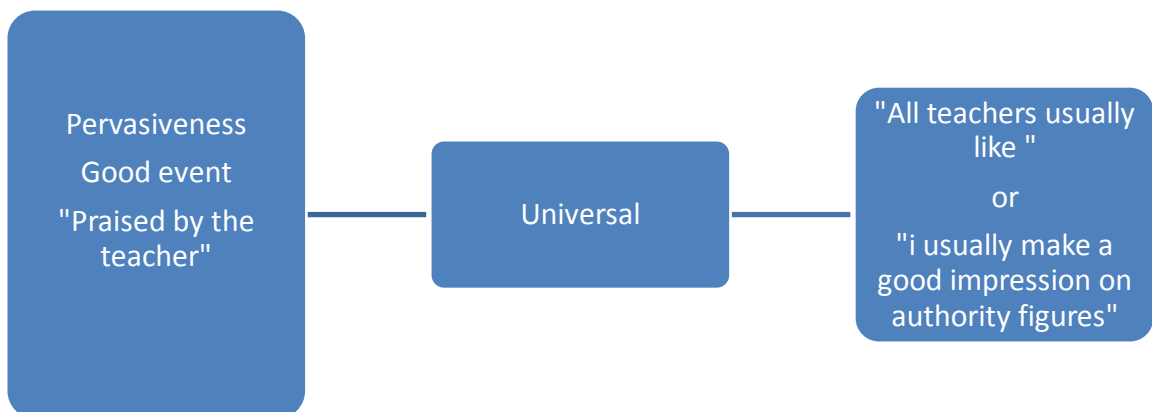


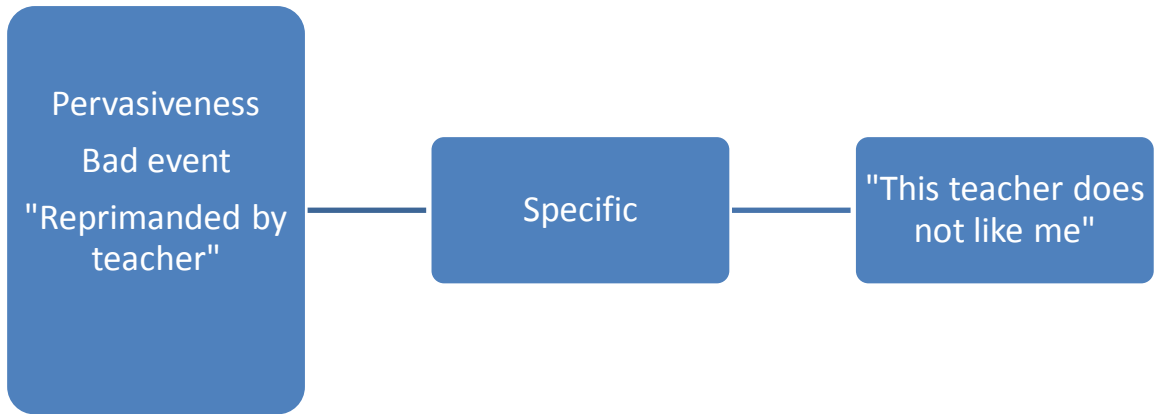




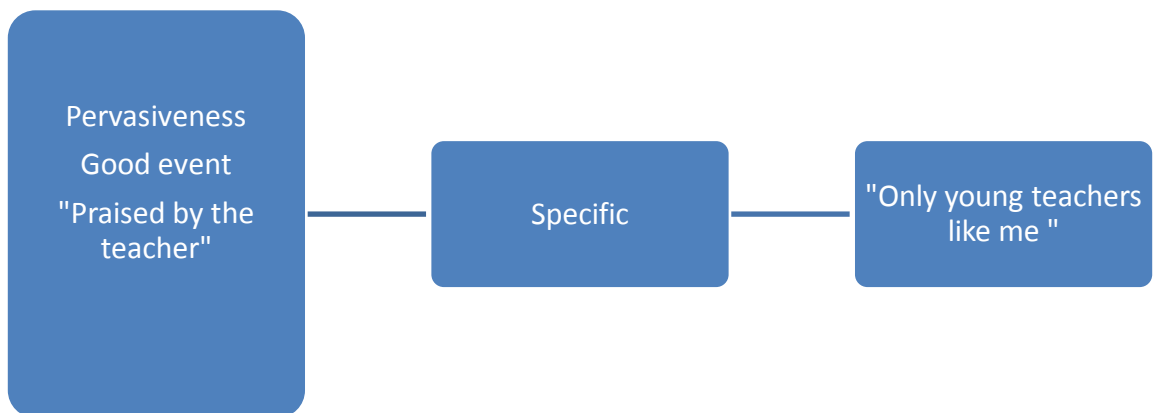
Just as in the case of the first dimension, the second dimension is also played out at opposing poles to determine a optimistic explanatory style and a pessimistic explanatory style.

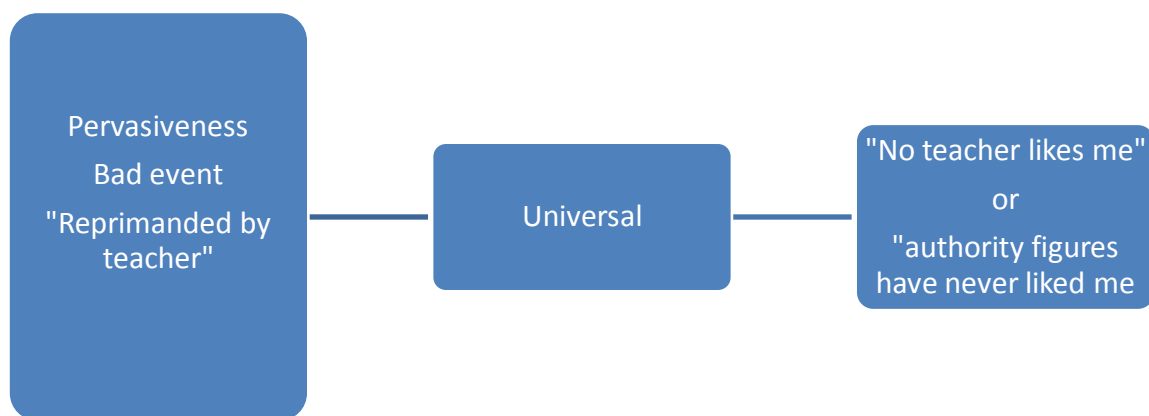
The following illustration presents an optimistic explanatory style for a good and bad event.





The next set of illustrations present the pessimistic explanatory style for good and bad event.



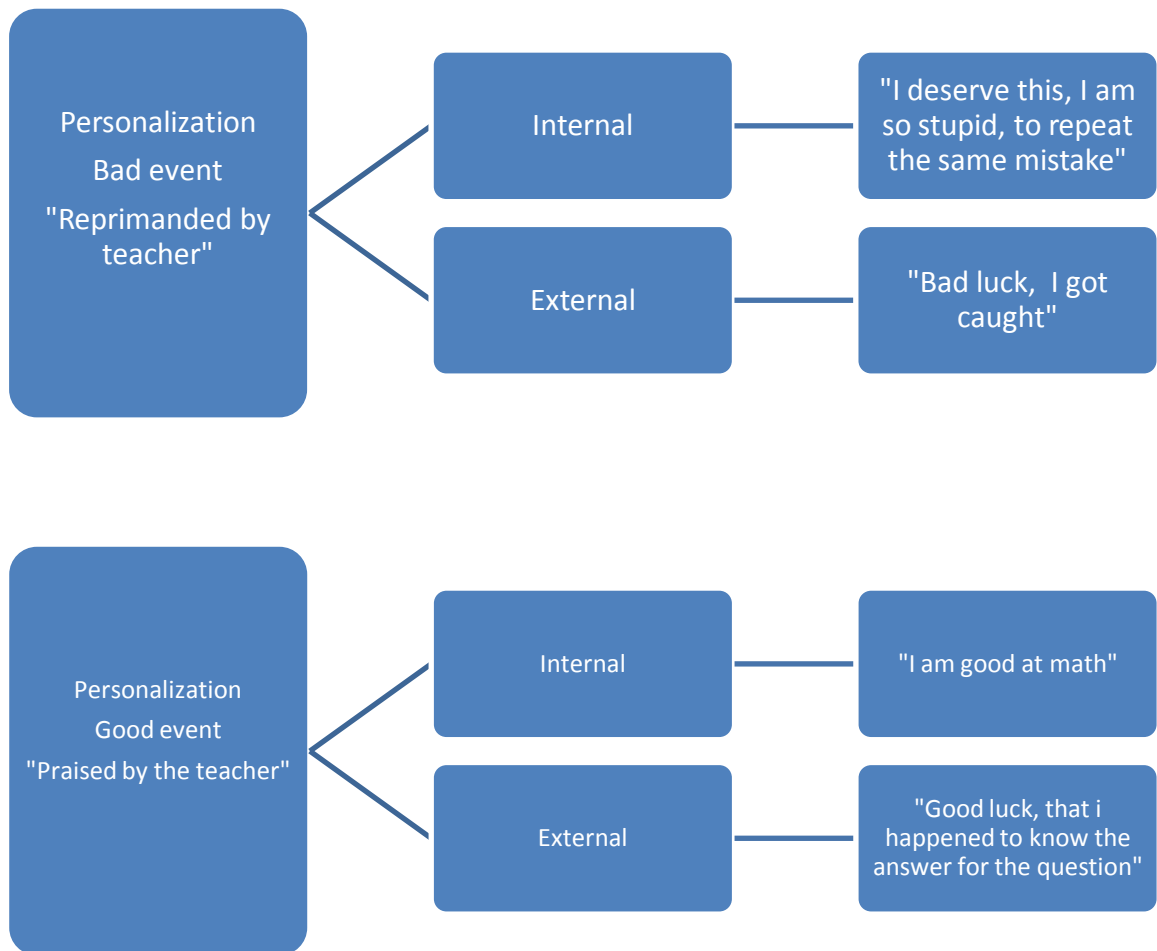


At this juncture the theory postulates that combination of the above two dimensions, permanence and pervasiveness decides whether the individual will remain hopeful in the face of adversity or experience helplessness and despair increasing the chances of giving up or cessation of effort to change the situation.

The theory explains that if in the context of a bad event individual attributes the same to temporary and specific causes then the individual continues to harbour hope. And therefore will continue to invest effort in the pursuit of changing the situation.

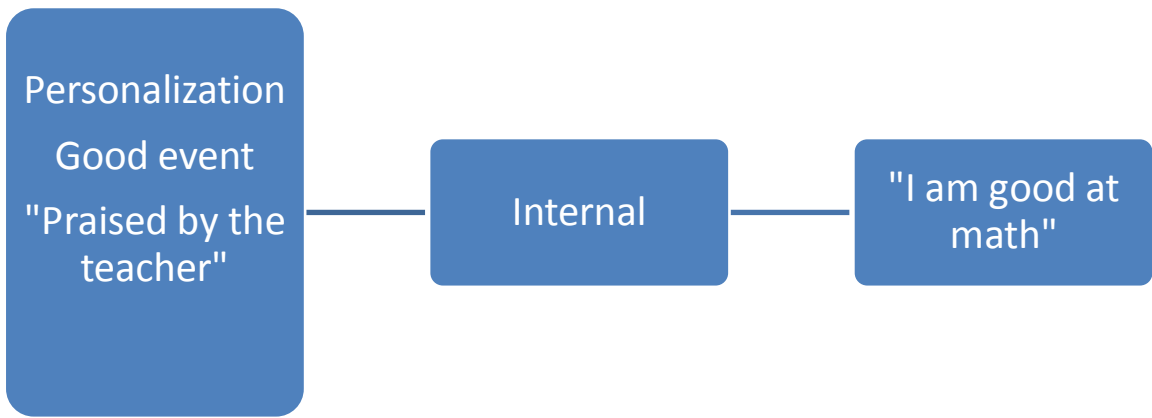
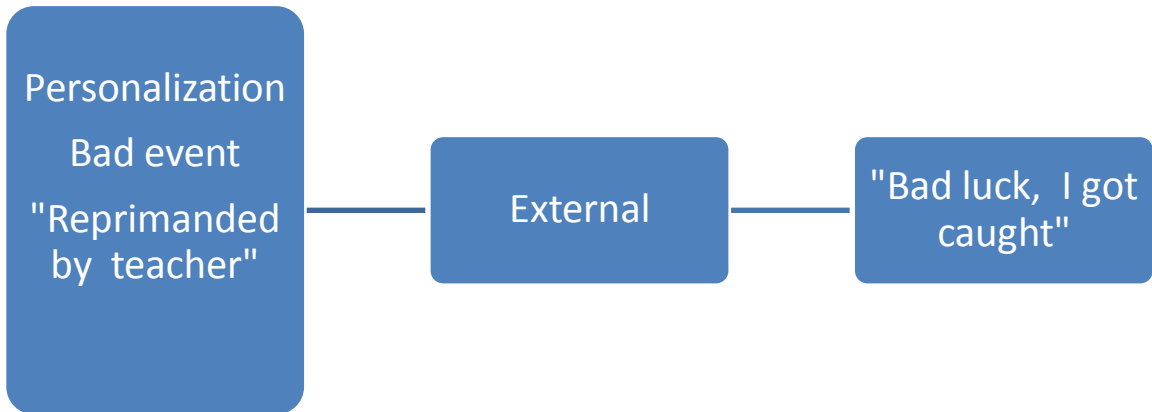
Instead when faced with an adversity the individual attributes the same to permanent and universal causes, they would experience helplessness and despair. This would lead them to cease all efforts and give up any pursuit of changing the situation.

The third and last dimension of the learned helplessness model is personalization, with internal and external style for attributions occupying the extremities of the continuum. The dimension of personalization, is explained in the theory as placing the blame on yourself (internal) or entities (people or circumstances) outside of self (external).

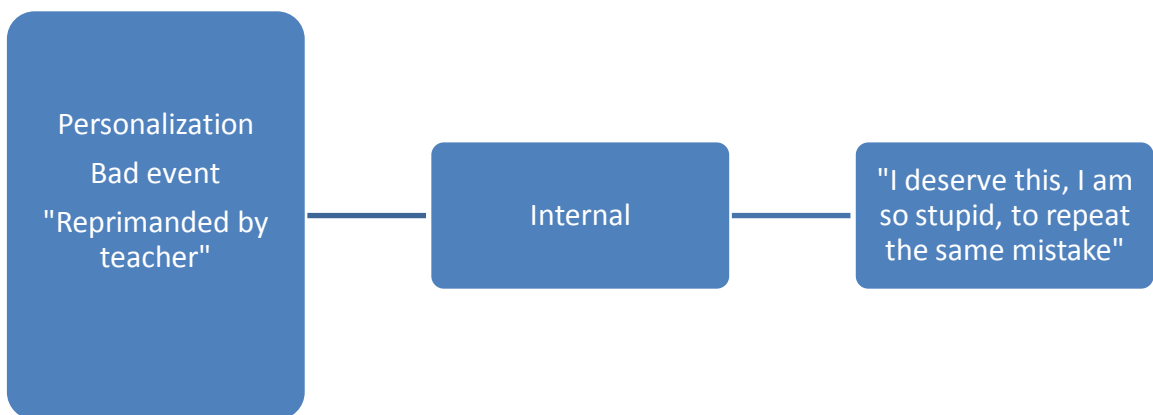
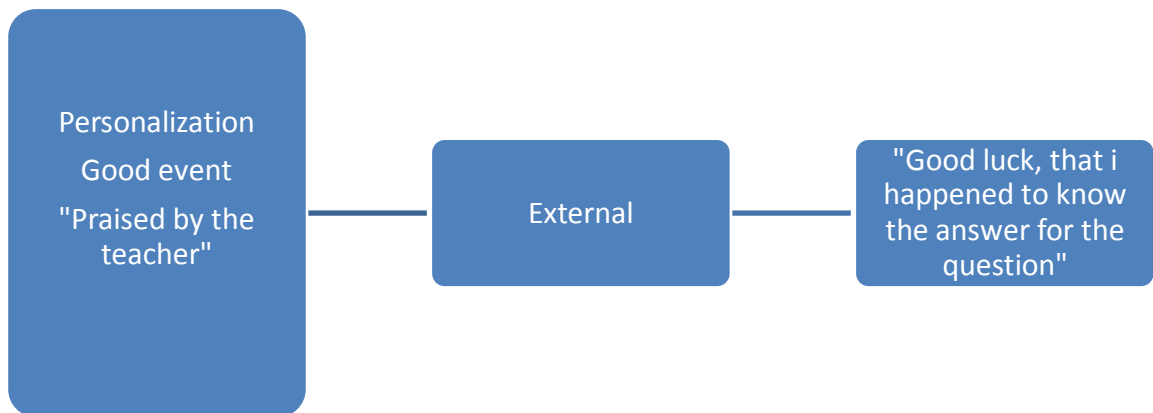


Similar to the previous two dimensions, the dimension of personalization two distinct opposing ways of comprising an optimistic or pessimistic explanatory styles of understanding good and bad events.

The following example illustrates the optimistic explanatory style for good and bad event.



The following two illustrations presents the pessimistic explanatory style for good and bad event for the last dimension of personalization.

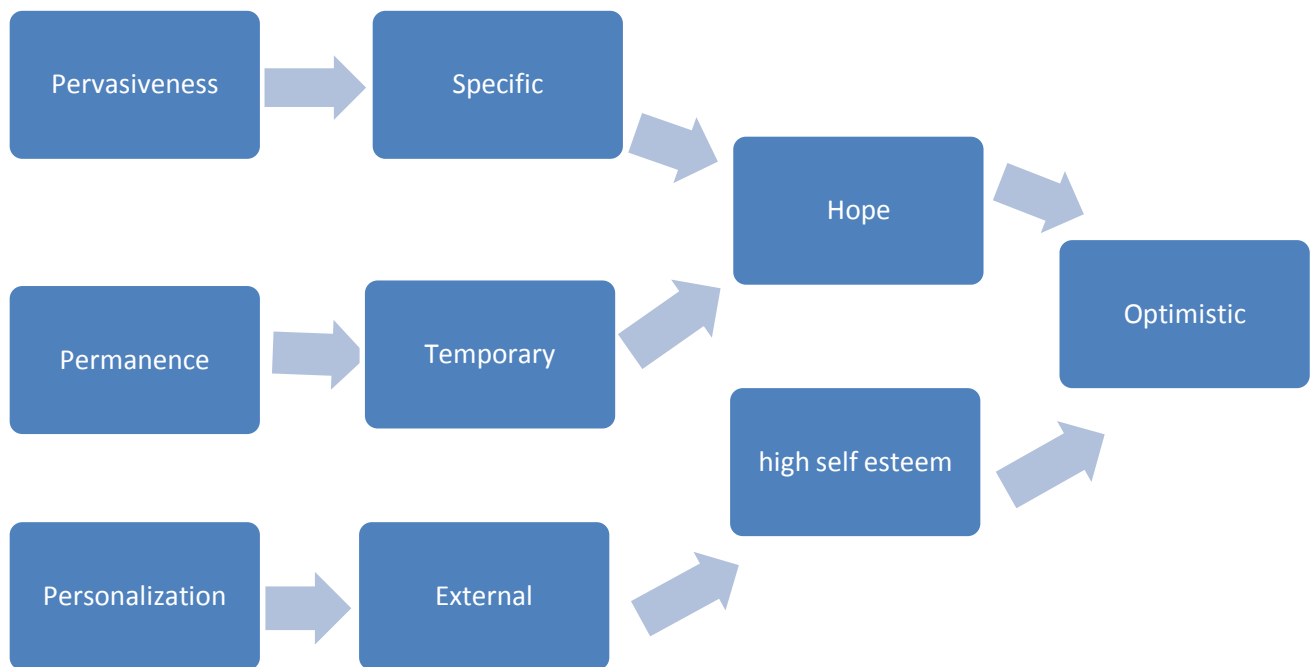


The theory of learned helplessness further postulates that internal style of attribution of a bad event also leads to low self esteem, as individuals hold themselves responsible for the bad event. Also that individuals who attribute good events to themselves tend to feel good about themselves more so than when they attribute the event to external causes.

The theory suggests that the dimension of personalization is the easiest to understand and also the most easy to fake, as verbal explanations of the attribution can be easily be switched from internal to external causes without firmly believing in the same.

Whereas the other two dimensions of pervasiveness and permanence have a stronger influence on the intensity of the unpleasant affect and its duration. And are more resistant to change unlike personalization and require the individual to consciously train themselves to rethink their explanatory style.

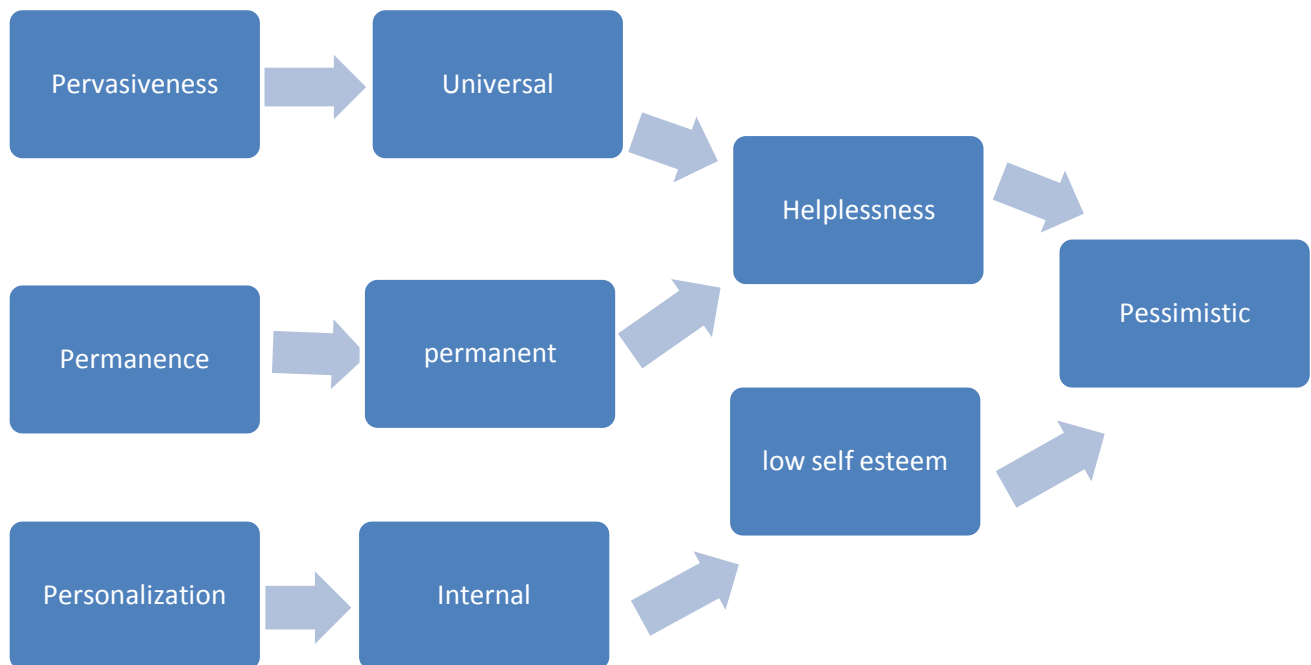
So in the face of an adversity/impaired performance the three dimensions will come into play as illustrated below:



Thus the theory proposes that adversity/impaired performance leads to momentary helplessness, the individual feels sad, to future appears dismal and investment in any effort seems overwhelmingly difficult. The length of time an individual suffers this symptoms is decided by their explanatory style for the adversity/impaired performance. An optimistic explanatory style as the one illustrated above, enables the individual to

think about the adversity/impaired performance as a temporary, specific and due to external causes. Empowering, the individual to, bounce back faster.

Whereas a pessimistic explanatory style as illustrated below. The individual explains the adversity/impaired performance in a self defeating style i.e they explain the adversity as a personal, permanent and global in magnitude. Thus prolonging their symptoms of helplessness across other areas of life and also suffer low self esteem.



The theory of learned helplessness also traces back on how individuals come about to learn these explanatory styles. The theory postulates citing other researchers work as well that as children, individuals learn explanatory styles from three distinct sources- mothers (primary care giver) explanatory style, criticism received from teachers/parents and the unfolding of adverse life events.

The theory presents research evidence that explanatory style are primarily learnt rather than inherited by primary care givers often times mothers. The evidence indicates that more often than not mothers and children (both sons and daughters) have received similar



optimism scores which is usually unconnected to father's optimistic scores. The theory suggests that children listen in when primary care givers are explaining bad events to themselves and soon follow along these lines.

The second source of learning explanatory styles is narrowed to the praise/criticism received during this period. For this the researchers refer to the work of Dweck 1966, the researcher studied the effect of praising/criticizing children for their traits as a result of a desirable or an undesirable outcome and compared it to praising/ criticizing them for their efforts. The research findings indicated significantly more helpless behaviours in children who received person centred criticism as opposed to process centred criticism. The learned helplessness theorists further build on this theory and isolated elements of pervasiveness, permanence and personalization (the three dimensions of learned helplessness) in the person centred criticism, that resulted in helplessness in children.

The last source of learning explanatory style is or are considered to be adverse life event/s that depending on whether were overcome or not deeply ingrain the explanatory style within the child. Here the learned helplessness theorists cite the work of Glen Elder who followed 164 children from their childhood in the period of great depression into their late adulthood to understand who survived intact the adversity and who continued to suffer long after the original stressor ceased.

Glen Elder found out that children from middle class families, witnessed how their families which were engulfed by the Great Depression were able to overcome the adversity and return to their normal lives. Came, to an understanding that adverse situations in life in spite of their magnitudes could be overcome. While children from lower middle class families, who remained poor before, during and after the depression, never witnessed their families surmounting the challenge and continued to live under its shadow long after the actual adversity concluded, for them it still continued.

Based on Glen's work the learned helplessness theorists proposed that when children witnessed the overcoming of real life adverse events the optimistic explanatory style

becomes deeply ingrained that adversity can be overcome. And when they witnessed the overwhelming, relentlessness of adverse life events, the pessimistic explanatory style that adversity will last forever becomes deeply ingrained.

Thus the theory for Learned Helplessness establishes that at the advent of failure individuals do experience depression and helplessness momentarily. There is either cessation of effort in changing the outcome of failure or if there is effort it is not persistent. This period of depression and helplessness that follows failure is significantly modulated by explanatory style, as postulated by the learned helplessness theory.

The theory as elaborated already in the above section, proposes that an optimistic explanatory style will enable a faster recovery from failure as it is viewed as temporary, specific and external. While a pessimistic explanatory style further reins in any proactive measures out of the situation, even minor setbacks reinforces, the experienced depression and helplessness.

The learned helplessness theory plays out in the field of academic achievement as well. The learned helplessness theorists build on the research findings of Dweck 1995, who studies two groups of students labelled mastery-oriented and helpless, based on their explanatory style. They were given a series of problems, initially solvable then unsolvable followed by solvable again.

The study demonstrated that initially the response of the two groups to solvable problems that lead to success were similar. The differences emerged when failure occurred, as they were given unsolvable problems. The problem solving strategies of the children in the helpless group deteriorated to lower grade levels, they voiced their displeasure of the task at hand and reminded themselves aloud of the skills they were good at. While the children in the mastery oriented group kept up their problem solving strategies to their expected grade level and conceded they were probably making mistakes but continued to remain engaged in the task.

When they next encountered success through solvable problems, the children from the helplessness group did not take ownership of the success and also predicted a lower success margin if next given the same task. While the children from the mastery oriented group, owned their success and predicted a significantly higher rate of success for similar tasks in the future. What is striking in the experiment was that, children from both the groups on an average had similar if not the same scores at the end of the experiment but felt distinctly different about it, which could significantly influence their latter efforts that would in turn effect their outcomes.

The learned helplessness theorists assessed students across school and colleges and repeatedly found that the traditional wisdom of who succeeds at school, as being a relative function of talent/ability (in the case of academic success the ability in question being IQ) was ignoring an important component that is as decisive if not more decisive of academic success, explanatory styles.

Through the application of their research findings, the theorist were able to predict, based on the explanatory styles of students who would graduate successfully from demanding ivy league and professional courses.<sup>2</sup>

The current research proposes that irrespective of potential/ability the academic performance of a student is also determined by their predominant explanatory styles. Thus, a student who would possess an optimistic explanatory style would persist in the event of failure while a student with a pessimistic explanatory style would quit.

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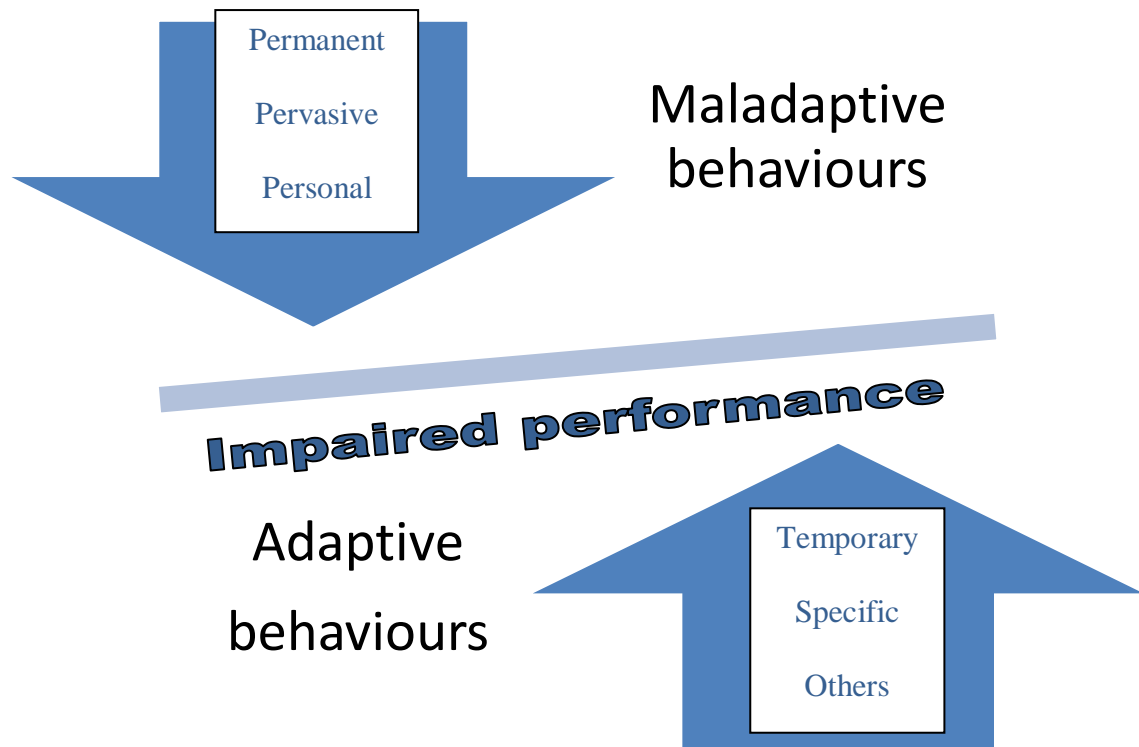
<sup>2</sup> For more details refer to the book *Learned Optimism*, where the aforementioned study was conducted on recruits for the undergraduate program at UPenn and the elite army college West Point (USA).

### **The fallacy of (Learned) Optimism:**

The criticism levied on the above mentioned theoretical construct is that, firstly optimistic explanatory style relinquishes personal responsibility in the event of failure by attributing it to an external factor. And discounting the play of external factors in the event of one's success, would distort the understanding of one's abilities

Secondly, process-oriented evaluation of strategies used, as successful or unsuccessful, is not cultivated as the part of the theory. The theory seems to jump from the explanatory style at the onset of the task to the outcome at the conclusion of the task. The intermediary steps that bridge the start to the finish line is not focused upon. Thus the significant portion of the learning process and its experience is not explained.

Thirdly, when a student is optimistic what is she/he optimistic about external opportunities, results or internal abilities (i.e does the student function on the assumption that circumstances or the tests will get easier or their abilities will get better or their performance will improve)?



**Figure2.1: Seligman’s Learned Optimism in the context of impaired academic performance**

These lacunae are addressed by the rest of the constructs that comprise the model proposed in the current research.

### **The theory of MINDSET**

Dweck (2006) in her mindset theory presented two distinct orientations that individuals possessed that determined whether they continued to persist in their goals and took up challenging opportunities with an eminent risk of failure. She defined them as – growth mindset individuals and the other fixed mindset individuals.

Dweck studied how fifth graders would respond to a series of puzzles, which progressively got difficult to solve. While, some fifth graders enjoyed solving puzzles when they were easy, they lost the ability to enjoy when they got difficult and remarked that they were not interesting anymore and did not want to carry on with the task. Whereas some fifth graders, would remain persistent on the task and ask for more time to work on them and got more engaged as the puzzles got more difficult.

Dweck called the later Growth mindset individuals who believed that their potentials or abilities were not set in stone but in fact grew with effort. This belief made them resilient, open to feed back and more importantly perseverant on their task and designing strategies to achieve the desired results. While the opposite is true for fixed mindset individuals (the fifth graders who lost interest when the puzzles got more difficult) who believe that their abilities/ potentials are set in stone and therefore if they face failure repeatedly they interpret it as a judgment on their abilities rather than consider it as feed back and evaluate their strategies. Fixed mindset individuals do not take on opportunities which are challenging and involve a considerable chance of failure.

"...but if an unusual necessity forces us to press onward a surprising thing occurs. The fatigue gets worse up till a certain critical point. When gradually or suddenly it passes away and we are fresher than before..." William James

Drawing from the discussions of cultivating an optimistic explanatory style, being optimistic about one's abilities would mean, taking away the debilitating power from the phenomenon of failure, thus removing the stress and intense negative affect surrounding failure (Dweck 2006) or a negative/unfavourable evaluation of one's ability. Thus changing the focus from outcome to the process of learning

### **Why Failure is debilitating?**

Dweck 2006 in her book 'Mindset the new psychology of success' also in her research efforts leading to and after this book extensively talks about the role of 'growth-mindset and fixed-mindset' in achievement and performance. The 'mindset' is the belief system that an individual holds about their abilities, even their personality characteristics.

Dweck 2006 draws support from the work of Binet 1975 and Sternberg 2005 who emphasized the importance of ‘practice, training or purposeful engagement’ in improving intelligence or achieving expertise.

A ‘growth mindset’ individual understands that abilities are ‘not set in stone’ and improves with effort, while a ‘fixed mindset individual’ understands abilities to be ‘fixed entities’ that do not change. Dweck 2006 proposes and with substantial research evidence that the primary difference between ‘growth – mindset and fixed – mindset individuals is their responses to failure. While fixed-mindset individuals consider that failure and need for effort as indicators that “it is not meant for them” growth mindset individuals simply look at it as the requirement to double up efforts. Dweck 2006 proposes that people share the mindsets even in the context of interpersonal relationships (this aspect will not be focused upon as it is outside the scope of the current research endeavour).

Outcomes of success and failure are considered as evaluative judgments of abilities and not merely performance at a given task. These judgments are either created or sustained based on the praise or criticism received for these outcomes. If the praise or criticism are process / effort centred they encourage future task engagement and persistence in spite of failure/impaired performance. Where as if the praise or criticism is ability centred then it increases task disengagement and individual could cease all efforts in this direction. As the meaning of, failure transforms from “I failed” an action statement to “I am a failure” an identity.

### **HOW failure takes on such debilitating power ?**

Dweck 2006 basis the playing out of the theoretical constructs on myriad research findings and case studies. The theory of mindset separates and explains the several parameters along which fixed and growth mindset individuals differ. **The first being success taking precedence over learning**, while fixed mindset individuals look at learning as a process to prove that they are smart as opposed to growth mindset individuals who look at learning as a process to becoming smart. Rendering the eventual

success or failure/impaired performance as an evaluation and validation of whether they are smart or not instead of considering it as a step towards getting smarter. Whereas growth mindset students being mastery oriented as opposed to performance oriented are guided by the objective of ‘becoming smart’ than ‘looking smart’.

Dweck 2006 mentions the study conducted at the University of Hong Kong, students were measured and divided based on their mindsets and then given the choice to accept or reject an additional English language class to improve their skills. Irrespective of their skill level, more often than not fixed mindset students as compared to the growth mindset students passed on the opportunity to get better<sup>3</sup>. Dweck 2006 explains that this is because fixed mindset students find it threatening to expose their deficiencies. The threatening nature of accepting ones ‘areas of improvement’ is better understood by how these two mindsets differently view the next two parameters failure and effort.

As success takes precedence over learning process, fixed mindset individuals work predominantly from a ‘performance’ oriented motive than a ‘learning’ or ‘mastery’ oriented motive. Therefore, fixed mindset students guided by a ‘performance’ oriented motive, though approach success they also **with equal vigour avoid failure**. The agenda of the fixed mindset student is to ‘maintain the appearance of being smart’ than risk the label of ‘not smart enough’ in the event of a failure.

Thus developing self handicapping behaviours like waiting till the last minute to start an assignment and then racing it to completion, studying in the nick of the moment for an upcoming test etc. So when they receive a poor grade or even fail they hide behind the excuse of not having the time to prepare enough than not being smart enough for receiving a good grade (Dweck et al 2011). Thereby escalating, failure at, a specific task to, ‘permanent, haunting trauma’ leading to, a global depreciating rating of the self.

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<sup>3</sup> For more details on the study refer to Dweck, Carol. 2007. Mindset. U.S.A.: Random House Publishing. New York. Oxford University Press.



The fixed mindset does not also offer a productive way out in the event of failure. Fixed mindset, students because they consider failure as an evaluation of ability than, as an attempt at a given task. So, when failure/impaired performance strikes their self esteem suffers and they try ways of fixing it than strategizing about their next attempt at the task, which is more the prerogative of the growth mindset individuals.

Dweck 2006 mentions the study conducted on college students who after receiving their grades were given the options to look at other students' papers. While the fixed mindset students picked the papers of students who had done worse than them, stating that it made them 'feel better' to learn that they were worse case scenarios<sup>4</sup>. The growth mindset students chose to see the papers of, students who had done better, stating the reason that they could 'learn from the right answers'. Growth mindset students took ownership of their performance objectively and looked hard at what to do next to get better result rather than just nurse their wounds like fixed mindset students in the aftermath of a failure.

Dweck 2006 posits that growth mindset also buffers the impact of depression often seen in student population. While the fixed mindset student succumbs to depression and cease efforts, the growth mindset student though has their share of the blue days persists in their struggle to keep the head above the water, thereby coping better and coming out of it faster and less battered.

Considering that fixed mindset students believe that abilities are set in stone, it would also carry the implication that their deficiencies were also unchangeable. The primary indicator of whether a given task tapped their ability or inability (which according to them are fixed unchangeable constructs) is their distorted **attitude towards effort**.

Dweck 2006 proposes that fixed mindset students believe in 'effortless performance', they believe that if one is meant to achieve on a particular task, then success in the task

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<sup>4</sup> For more details see Dweck, Carol. 2007. Mindset. U.S.A.: Random House Publishing. New York. Oxford University Press.

needs to be achieved without (arduous) effort. Dweck 2006 explains that fixed mindset students often look at achievers who seem to perform with ‘effortless ease’ and misconstrue the need and role of effort, in what seems like ‘effortless performance’. The fixed mindset students do not realize that such ‘flawless ease of performance’ is a result of persistent effort rather than lack of it.

Dweck 2006 adds that fixed mindset students further believe that need for effort means lack of ability. This is the most threatening information that ‘presence of effort’ can convey to fixed mindset student. Who believe that ‘natural talent’ is either present or absent and cannot be improved upon by effort.

At this point Dweck 2006 mentions the case of Nadja Salerno-Sonenburg a music prodigy, labelled as a natural talent by the media. Recollecting her initial days at the professional training school of music at the hands of the legendary teacher Dorothy. Sonenburg came up with the following insights about her initial resistance at working hard for auditions or at school. In Sonenburg’s words “ Everything I was going through boiled down to fear...Fear of trying and failing..” Dweck 2006 highlights through this case study, the risks that fixed mindset individuals associate with effort. The first being that “.geniuses are not supposed to try hard..” so investing effort would mean that one is not a natural talent.

The next related risk of investing effort is, “...If you go to an audition and don’t really try, if you are not really prepared, if you did not work as hard as you could have... you have an EXCUSE..” Sonenburg adds that the most threatening aspect of investing effort is the acceptance of the reality that “I gave it my all and it was not GOOD ENOUGH”.

To summarize, Dweck 2006 proposes that fixed mindset students are threatened by the idea of investing high effort as it would mean that they were not ‘talented enough’ and if high effort failed to harvest into success, then they were not ‘good enough’. And as they believe that abilities are set in stone, so they also harbour that lack of ability is fixed or

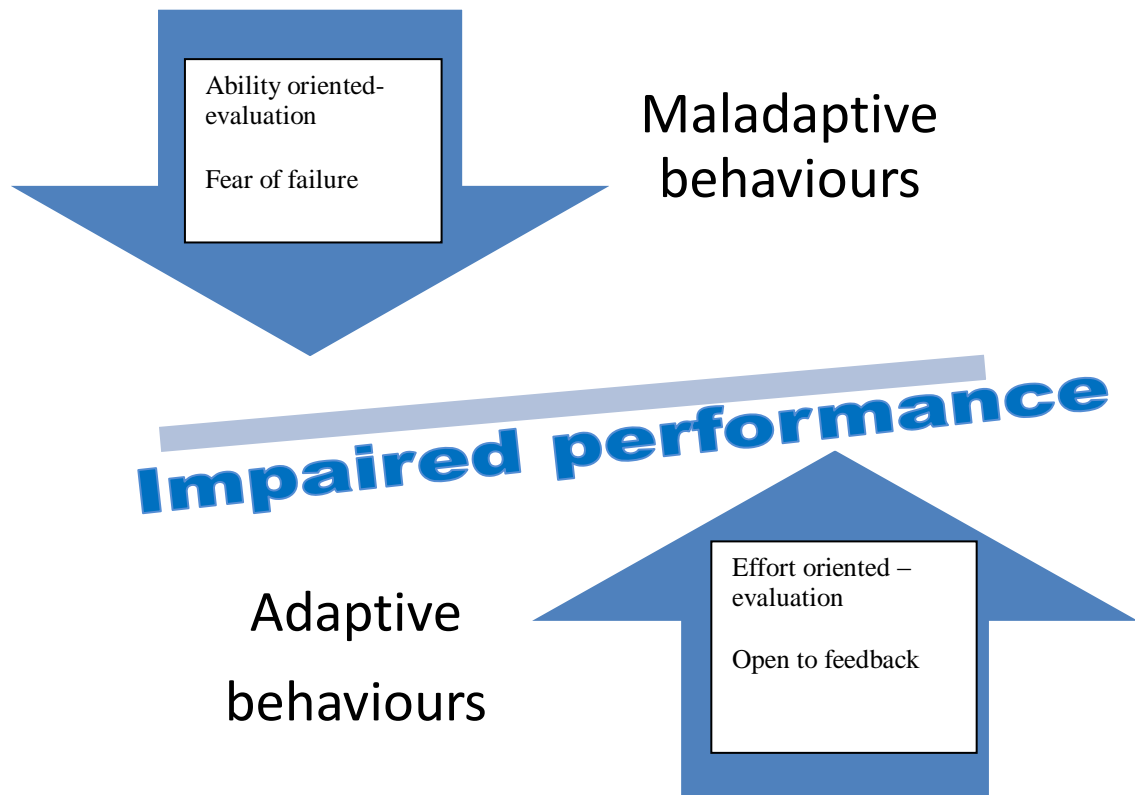
unchangeable. Thus the conclusion of fixedness of their probable lack of ability translates into lack of effort further handicapping their chances of success.

On the other hand Growth mindset students understand the irrefutable role of effort in their journey to success and understand it is arduous but are not threatened by it. As they are guided by the belief that effort improves talent.

### **Mindset in concise**

Dweck's 2006 conceptualization of fixed and growth mindset students, varies along the parameters of, the meaning associated with success, failure, effort, the presence and absence of self-handicapping behaviours and their coping styles when depressed. She adds that these mindsets are themselves not cast in stone and having recognized their own mindsets students can be induced and reinforced in learning environments. Students themselves can observe their behaviours and learn to 'catch themselves when indulging in fixed mindset behaviours. Often these mindsets are imbibed and reinforced in learning environments, where feedback in the form of praise or criticism is person (ability) focused or process focused.

Having, made a compelling case for growth mindset and educating about the counter productive behaviours associated with fixed mindset. Dweck 2006 does not guarantee the discovery of a pot of gold at the end of the rainbow called growth mindset. Dweck 2006 as well as Seligman acknowledge that (larger socio-economic-political) context and unpredictability of life circumstances could prove insurmountable to even the most optimistic, sincere and persistent of efforts.



**Figure2. 2: Dweck's mindset in the context of impaired academic performance**

What the growth mindset proposes is, keeping the larger contextual factors at a conducive state (non-abusive/intrusive), it releases the student of self handicapping behaviours and significantly improves the chances of success at a given endeavour.

Dweck 2006 also does not propose that fixed mindset individuals are guaranteed failures, she accepts that they are fixed mindset accomplished achievers as well. Who may not be averse to the idea of high effort, but could still harbour the other behaviours associated with fixed mindset, seeking constant validation, being overly sensitive to criticism, considering their talent to be inseparable component of their identity, so much so that failure at their chosen endeavours spills over the ensuing frustration and depression onto other parts of their lives as well. Thus, significantly reducing their quality of life, in the event of, a failure/impaired performance.

Dweck 2006 also does not mean to proliferate the notion that an individual must harbour the growth mindset in all aspects of life. The growth mindset can be cultivated to counter handicapping behaviours already present. To, empower students achieving below their known potential. For individuals who have set specific goals in areas not considered their strengths to maximize their chances of accomplishment. And, in general to establish a learning conducive environment, to, enable individuals to achieve on par to their potential in educational institutions or commercial organizations.

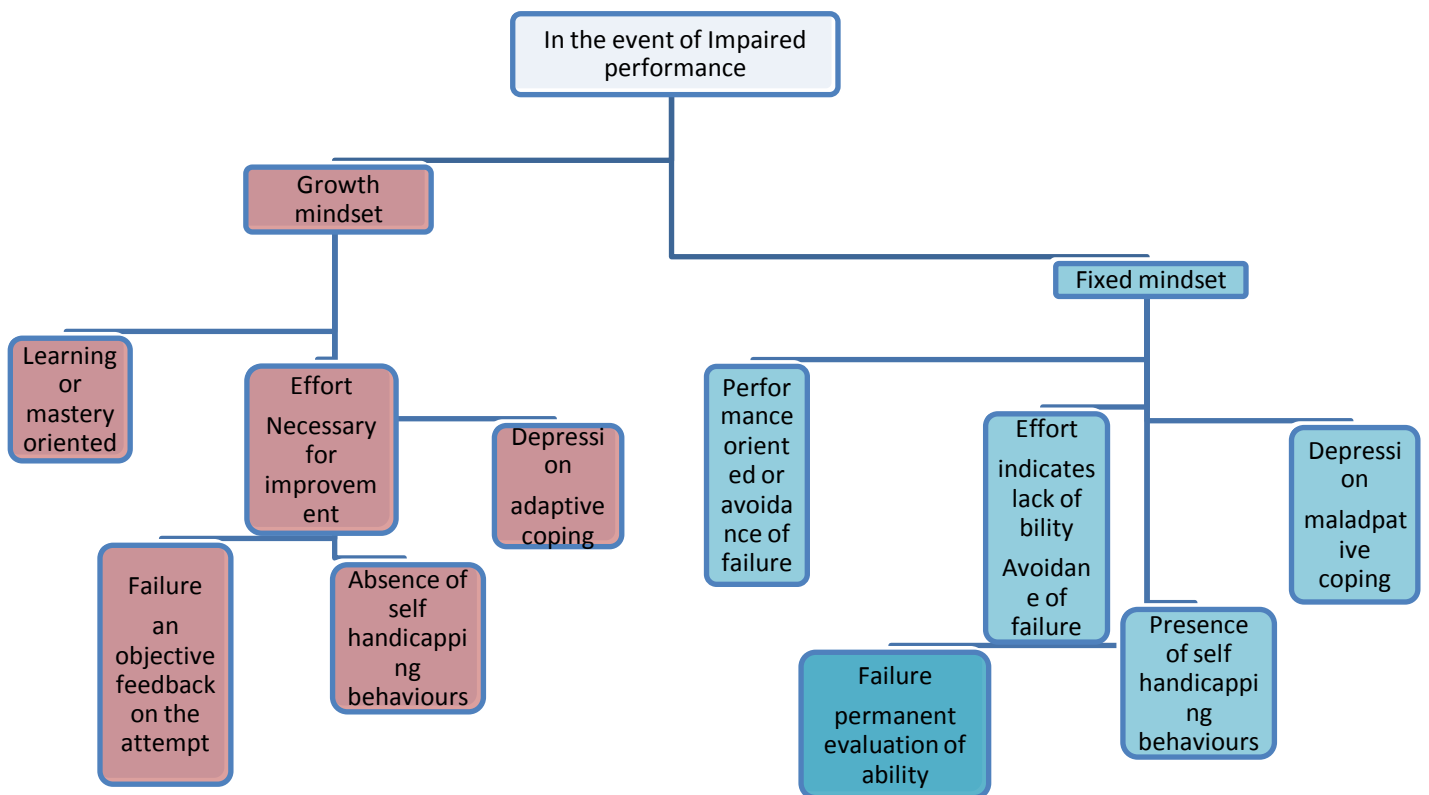


Figure 2.3: Adaptive and Maladaptive behaviours related to mindset

**Major criticism: Would growth mindset allow for an inflated sense of abilities?**

The foremost criticism levied on the theory is, whether growth mindset or fixed mindset individuals would allow for accurate assessment of their abilities. Dweck 2006 asserts with the backing of research findings that in general people did not estimate their abilities accurately. This is seen more frequently with individuals with fixed mindset than with growth mindset.

As growth mindset individuals are open to accurate information about their abilities, this is received in the form of feedback on their performance even if the feedback seems unfavourable. Such feedback is essential for growth mindset individuals as they reassess their standing in the journey to the goal and reconsider their strategies for achieving the same.

Growth mindset individuals are able to assess the feedback they receive on their abilities as they do not suffer exaggerated emotional impact following success or failure/impaired performance which according to Dweck 2006 would not be the case with individuals with a fixed mindset.

Dweck 2006 draws from the works of Gardner 1997 and Sternberg 1999. The works mention that exceptional achievers and creative individuals harbour the ability to have a keen sense of their strengths and weaknesses and have the ability to persevere resiliently beyond most individuals. Dweck 2006 claims that Growth mindset oriented individuals imbibe these features.

The current research effort as mentioned earlier proposes to integrate explanatory style and mindset as follows, that impaired performance/failure needs to be viewed as transient and not be considered as a permanent evaluation of one's unchangeable ability, so as to restrict the ensuing frustration and depression to the specific area of life.

At this point the model addresses the limitation of the optimistic explanatory style, where impaired performance/failure is blamed on others and replaces it with the Growth

mindset where impaired performance/failure is viewed as an objective feedback on one's attempt. Thus allowing for, remedial strategizing for the next attempt.

The theory of mindset further adds to the model the construct of 'effort'. That effort should be viewed as necessary and not as a threat that affirms the lack of talent and using lack of effort as an excuse to avoid accepting impaired performance/failure. The growth mindset also checks the self handicapping behaviours following impaired performance/failure like procrastination and decrease or cessation of effort. The dimension of effort added by mindset now bridges the way for the next theoretical construct in the proposed model – low frustration tolerance (identified as one of the core irrational beliefs in the theoretical framework and practice of Rational Emotive Behaviour Therapy).

The current research attempts to build on the aspects of how the mindsets differentially effect attitude towards effort and the interpretation of impaired performance/failure. The current research proposes that in order for the individual to persist in the event of impaired performance/failure, the student requires to cultivate a growth mindset. So, that the current impaired performance/failure is viewed as a feedback rather than a permanent evaluation of ability ("I failed/ did not perform well" an action statement as opposed to "I am a failure/ not a good performer" an identity statement).

Also in the event of impaired performance/ failure, student must not associate high risk with high effort (i.e high effort is equivalent to lack of ability and instead hide behind the rationale of 'nothing ventured nothing lost'). Instead working on the principle of growth mindset, view lack of effort, as a bigger risk.

Therefore the conscious awareness and cultivation of the growth mindset along with training in optimistic explanatory style would aid developing life skills to tide over troubled waters or to reach a determined goal (the current context being academics).

How explanations of impaired performance/failure and associating high risk to effort leads repeated frustrating attempts, bringing in to the model the next construct low frustration tolerance and other intense emotions accompanying impaired performance/failure and attempts to overcome the same. The current research attempt considers low frustration tolerance as explained primarily in the context of REBT (Rational Emotive Behaviour Therapy) school of thought.

### **Low frustration tolerance : The origin and principles of REBT school of thought**

“I have had a lot of trouble in life, most of it never happened.” Mark Twain

The school of REBT is founded by Albert Ellis. Ellis formulated the theoretical framework of REBT in a paper presented at the annual convention of American Psychological association in 1955. Ellis’s interest in philosophy led to his underpinning of human disturbance on the stoic philosopher Epictetus’s words –“Men are not disturbed by things, but by the view which they take of them” (as quoted in Diguseppe etal 2014).

Though trained originally in the school of psychoanalysis the passive and slow pace of the therapy and the long durations of it with clients feeling better but not moving on led him to reformulate the his therapeutic framework. This attempt took the shape of the first formal system of therapy proposed in the category of cognitive behaviour therapy (Diguseppe etal, 2014). Initially called Rational therapy as it focused primarily on the cognitions as the seed of behaviour. It was renamed Rational - Emotive therapy by Ellis, as he felt that the role of emotion which is used as the navigational device to home in on the beliefs that cause it. It finally received its current name Rational Emotive Behaviour therapy, when Ellis was made to realize by a friend that he often used many behavioural techniques / methods in therapy (Ellis, Diguseppe etal 2014).

It is proposed that Ellis’s psychoanalytic training influences can be traced in his formulation of the REBT theory (Diguseppe etal, 2014). Especially the pivot of the theory rests on ‘demandingness’. REBT postulates that people are themselves the source



of much of the emotional distress they experience. People's self engineered emotional distress stems from their synonymising their desires or wants into absolute demands. Emotional adjustment therefore involves in acknowledging the rationale that the "Universe has no obliged to cater to your wants". Ellis labelled the dysfunctional thinking of treating desires as demands, in line with the psychoanalytic school of thought as primary process thinking and the functional (adjustment) form of knowing the distinction between desire and demand as the secondary process thinking. Ellis claimed that REBT focused much on the primary process than on the secondary process (Digiuseppe et al 2014). Ellis is considered to be among the pioneer proponents of therapeutic process focusing on changing the underpinning beliefs. Also, amongst the first therapists to, use 'between – session homework assignments' and 'in-vivo' behavioural exposures.

Ellis based REBT on Kelly's Personal construct therapy (Digiuseppe et al 2014). Personal construct theory is guided by the premise that people reconstruct reality to form their personal world in order to live in it. They need to reconsider these self engineered worlds when faced with contradictory information from the real world. This served as a basis for the formulation of other cognitive behaviour therapies. Ellis (and Beck, Cognitive therapy) proposed that irrational beliefs, automatic thoughts and dysfunctional attitudes stemmed from these self engineered schemas built by people to make sense of the real world (Digiuseppe et al 2014).

Thus Ellis roots REBT in scientific tradition of looking for logical, empirical, functional evidences for peoples' dysfunctional irrational beliefs. He vigorously promoted the practice of scientifically evaluating one's assumptions, values, beliefs and perceptions and when found unreliable and un-validated to be open to alternative points of view, hence leading to positive personal adjustment. REBT promotes that people cannot but help developing these personal constructs as they navigate their way through life. What they next need to do is to treat these personal constructs as hypotheses and seek to falsify them rather than validate them which would lead to confirmatory biases. REBT also goes

one step ahead in being directive with clients to replace their irrational beliefs with rational beliefs if they fail to engineer them on their own.

### **Misconceptions and popular Criticism about REBT**

The first criticism levied on REBT is, it supports stoicism which purports “immunity to feelings”. REBT does not advocate ‘no feelings’, what it proposes is the distinction between dysfunctional positive and negative (stemming from irrational beliefs) feelings from functional but also intense positive and negative feelings (stemming from rational beliefs). REBT practitioners claim that while functional even intense positive and negative feelings lead to adaptive behaviours the contrary is achieved by dysfunctional feelings. When irrational beliefs are identified and replaced by rational beliefs, emotions are not negated instead functional (even intense, positive and negative) feelings are experienced.

The next criticism is more concerned with the personal epistemology that individuals construct of their worlds. The criticism levied on REBT is that they propagate logical reasoning as the only mechanism of building personal epistemology, while the practitioners lay emphasis on both logic as well empiricism for doing so. REBT practitioners, encourage clients to test out their existing (irrational) beliefs and replaced (rational) beliefs for empirical evidences, to confirm their validity.

The next most popular criticism against REBT is that it promotes rationalization. REBT practitioners point out that rational thinking is not the same in any which way to rationalization. While rationalization is a classic defence mechanism, where once the ego is threatened comes up with explanations to ward off the threat. Rational thinking allows for the individual to evaluate the ‘reality’ of the threat and come up with rational/functional/adaptive emotions and thoughts to deal with it.

Another common misconception that leads to undeserving criticism is confusing ‘rational thinking’ to mean ‘unemotional’. REBT repeatedly stresses that even an individual functions from rational belief, negative events do result in negative emotions even strong negative emotions. The point of distinction being that, these (strong) emotions are ‘adaptable’ in nature thus conducive for constructive behaviour when dealing with the event. As emotions are motivating in nature (intense/strong) positive/negative emotions would result in emotional (psychological) disturbance thus interfering with behavioural efficiency.

### **The principles of REBT**

The main ideas that comprise theoretical framework of REBT are as follows:

1. Cognition or thoughts are considered as the root of human emotions.
2. Emotional distress or dysfunctional emotions (not to be confused with intense emotions) stems from irrational beliefs.
3. The best ways to deal with dysfunctional emotions is to, replace the root cause – the irrational belief to rational beliefs.
4. Many factors including genetic and environmental factors contribute to forming irrational beliefs.
5. Emotions like the sensation of pain are considered to be indicators of need for action. Also REBT practitioners distinguish between healthy and unhealthy emotions which are indistinguishably experienced by individuals. The unhealthy emotions need to be looked into as they lead to dysfunctional and maladaptive behaviours.
6. REBT practitioners, look into current influences that maintain dysfunctional behaviour rather than historical influences. Though they do not negate the role of heredity or environmental influences in determining behaviour, they strongly recommend that these dysfunctional behaviours are maintained by continual rehearsal of the irrational beliefs that underlie the dysfunctional behaviours.
7. Though deeply ingrained and requiring persistent effort, irrational beliefs can be recognized, challenged and replaced by rational beliefs.

### **What are Beliefs, what makes them rational and irrational.**

Beliefs, refer specifically to evaluative or derivative cognitions and imperative or demanding cognitions. Evaluative or derivative cognitions refer to the individual's cognitive appraisal (in other words evaluation) of the event / themselves based on the event or others comprising the event. While imperative or demanding cognitions are the demands that individuals place on how the circumstances must have or must not have occurred.

These beliefs are well concealed, rehearsed and deeply embedded in the schemas the individual builds to understand their environment (Digiuseppe et al 2014). Thus embedded beliefs generate several automatic thoughts (which are congruent to the beliefs) that bubble into consciousness.

The beliefs are considered to be irrational when they defy logic, do not comply with empirical reality or non-facilitative in reaching one's long-term goals (Maultsby 1975). A rational belief will be the adaptive counterpart of the above paradigm, in that they follow logical reasoning, comply with empirical reality and are conducive to reaching one's long term goals.

The irrational beliefs can also be explained as 'cognitive expressions' of an inherent resistance to accept an unfavourable outcome of real life situations especially in the path of goal achievement or to avoid dealing with a negative outcome. Irrational beliefs are usually formulated in 'musts', 'shoulds' and 'oughts'. While the rational beliefs serve the opposite purpose, it is a 'cognitive expression' of an inherent acceptance of an unfavourable outcome in the path of goal achievement in spite of the degree of deviation from one's original thought or the intensity of the desire being obstructed, and an openness of dealing with a negative outcome (Digiuseppe et al 2014).

Based on the definitions above the following characteristics of irrational and rational beliefs have been distilled, as follows (Digiuseppe et al 2014):

Irrational beliefs –

1. It is absolute, dichotomous, rigid and unbending

2. It is not logical
3. It is not consistent with reality
4. It does not help to achieve ones goals
5. It leads to unhealthy/dysfunctional emotions

Rational beliefs –

1. It is flexible (rational thinking recognizes that they are several options that make up the continuum between the two extremities)
2. It is logical
3. It is consistent with reality
4. It is helpful in pursuing ones goal
5. It leads to healthy functional emotions, even when the person is facing negative events.

### **Types of irrational beliefs**

Ellis's original list of irrational beliefs lacked structure or ordering. The thirteen original irrational beliefs comprised a selection of factual errors, demands, catastrophizing statements, condemnation of self and others or to do with low frustration tolerance (Digiuseppe et al 2014).

The thirteen irrational beliefs were periodically reformulated and currently have been condensed into five irrational beliefs, demandingness, awfulizing, low frustration tolerance, self condemnation or other-condemnation (the last two are also combinedly referred to as global evaluation of human worth:

*Demandingness* – an absolutistic and unrealistic expectation of events or individuals being the way a person desires/expects them to be. Often, noticed in individuals' use of words like “must”, “ought”, “should”, “have to”, “got to” and “need” followed by a description of their desires of the world, themselves and others. REBT, discerns between an individual's preferences or choices and absolute demands. An individual's preferences

concerning how, a situation may turn out, or of how one may behave and how others may behave. REBT posits that such desires when presented as a preference do not lead to any disturbed emotions. Also these preferences need not be evaluated as rational and irrational. Only, when these desires are ‘demanded’ to be fulfilled is when they turn irrational and lead to disturbed emotions.

REBT postulates that individuals often construct schemas to comprehend the world around them, when they are confronted by discrepancies between these schemas and the reality, they experience emotional arousal. Individuals proceed to resolve the discrepancies through processes of assimilation and accommodation (Piget 1954). In accommodation involves an individual changing the, existing schema in the context of new information that is causing the discrepancy. This process of accommodation is the ‘rational’ response to the situation. In assimilation, an individual retains the old schema and merely changes/distorts their perception of it, thus leading to an ‘irrational’ response.

REBT, maintains that individuals may not change their core beliefs at every encountered discrepancy. But in the face of significant discrepancy, The rigidity of an individual to maintain the belief irrespective of the evidence against it leads to emotional disturbance. In, other words using assimilation rather than accommodation when encountering significant expectancy – reality – discrepancy results in emotional disturbance in individuals.

REBT explains that individuals often maintain assimilation over accommodation because they confuse acceptance of situation for approval of the situation. Individuals believe that when they are ‘accepting’ the way of the world they are also validating/approving of them, instead of merely acknowledging them.

Awfulizing – an exaggeration of negative consequences of a situation to an extreme degree, so that an unfortunate occurrence becomes terrible. Awfulizing or catastrophizing is a type of negative thinking that anticipates ‘hyper-negative outcomes’ often divorced

from reality. And individuals harbour such exaggerated negative assumptions, without checking if such occurrences in fact result in the extreme assumed negative feelings.

The negative events to which individuals attach such unrealistic strong negative valence to, exists along a continuum of events that warrant (life-threatening, painful, distressful life events) and events that do not warrant such emotions (like failing a test or a romantic break up). The exaggerated negative valence is maintained by two common irrational beliefs, that “This should not have happened” – a demand placed on the world and “I cannot stand it – Awfulizing”

Global evaluation of human worth – either of the self or the others, imply that human beings can be rated and that some people are worthless or at least less valuable than others. Such evaluations lead to depression or guilt when applied on self and anger and contempt when imposed on others. REBT proposes Unconditional Self/Other - Acceptance (USA), as the rational counterpart of global evaluation of self and others. The concept refers to the acceptance of self and others in spite of the imperfections not despite it. REBT advocates that worth of any human being is an immeasurable quality and thus cannot increase or decrease with their behaviours(or performances).

REBT posits that Global evaluation of self worth is distinct from self esteem. As often self esteem is contingent to self efficacy. Thus presence or lack of self efficacy, increases or decreases self esteem. Lack of positive feedback on performance also depletes self esteem. Most importantly, self esteem does not educate on how to cope when one is performing poorly. On the other hand, REBT’s concept of, Unconditional Self/Other Acceptance draws focus on one’s performance and keeps it there, and does not like self esteem extend it to determine self/other worth. Therefore whether one performs well or not well enough, their (immeasurable) worth remains unaffected.

Low frustration tolerance – stems from demands for ease and comfort, and reflects an intolerance for discomfort. Originally referred to as, Frustration intolerance (FI). REBT re-termed the construct as Low frustration tolerance (LFT), on the recommendation of

Joyce (1999). The psychologist during her work with parents of neurologically disabled children, whose difficulty of raising their children was intensified because of their neurological condition, felt misunderstood when she challenged their low frustration tolerance. Joyce proposed that these parents did not have frustration intolerance, but need greater frustration tolerance and hence the proposed change of term to low frustration tolerance.

Ellis (2003), proposed that, individuals hold beliefs regarding their ability/strength/effort/endurance to suffer/withstand/tolerate/survive the intensity of the frustration, discomfort or pain, in a given situation. Ellis termed the disturbed emotion that results from the above stated irrational belief is 'discomfort anxiety'. REBT proposes that an individual with self control and an attitude of commitment and endurance results in the behaviour of persistence, in the face of frustrating/discomforting/painful circumstances (DiGiuseppe et al 2014).

Ellis, was much inspired by the works of Korzybski (1958) and Raimy (1975) (as quoted in DiGiuseppe et al 2014), that much of, emotional disturbance occurred from avoiding to accept emotional discomfort and exaggerating the negative valence of the anticipated emotional discomfort. REBT draws support from other researches who, hold the view that, to achieve psychological adjustment one of the essentials is high frustration tolerance.

The concept of frustration tolerance also echoes in other forms of cognitive behaviour therapies like Dialectical Behaviour therapy, Acceptance Commitment therapy.

Ellis extended the concept of frustration tolerance, as an avoidance of discomfort, resulting in 'discomfort anxiety' but also leading to secondary disturbance about the discomfort. Eg. Being "anxious about the discomfort" or "depressed about the discomfort" or "angry about the discomfort" each stemming from a different irrational belief.



The current research focuses on the irrational belief of frustration tolerance and the belief content of achievement as highlighted in the above table. In the context of academic achievement or lack of it individuals may experience dysfunctional (intense) emotions of depression, anxiety, anger or guilt as a result of these irrational beliefs.

Figure 2. 4 Model of Irrational beliefs Diguseppe etal 2014

Irrational beliefs	Demandingness	Low Frustration tolerance	Awwfulizing	Global evaluations of human worth	
				Self-worth ratings	Other-worth ratings
Belief content					
Social relationships	Demanding about affiliation	Low Frustration tolerance about affiliation	Awwfulizing about affiliation	Self-condemning about affiliation	Other-condemning about affiliation
Achievement	Demanding about achievement	Low Frustration tolerance about achievement	Awwfulizing about achievement	Self-condemning about achievement	Other-condemning about achievement
Comfort	Demanding about comfort	Low Frustration tolerance about comfort	Awwfulizing about comfort	Self-condemning about comfort	Other-condemning about comfort
Fairness	Demanding about fairness	Low Frustration tolerance about fairness	Awwfulizing about fairness	Self-condemning about fairness	Other-condemning about fairness

Demanding about achievement	<ul style="list-style-type: none"> <li>• "I must get high marks always"</li> <li>• "I must never fail"</li> </ul>
Low frustration tolerance about achievement	<ul style="list-style-type: none"> <li>• "Its too difficult/boring to study"</li> <li>• "I can't stand failing"</li> </ul>
Awfulizing about achievement	<ul style="list-style-type: none"> <li>• "Its awful if I don't succeed"</li> </ul>
Self Condemning about achievement	<ul style="list-style-type: none"> <li>• "I am stupid to have failed"</li> </ul>

**Figure2. 5 Irrational processes affecting achievement and the resulting inferential cognitions**

Low frustration tolerance about affiliation	<ul style="list-style-type: none"> <li>• "I constantly feel like I dont belong here"</li> </ul>
Low frustration tolerance about comfort	<ul style="list-style-type: none"> <li>• "I can't stand following a timetable. its so boring"</li> </ul>
Low frustration tolerance about fairness	<ul style="list-style-type: none"> <li>• "Its unfair that i need to work hard that other's seem to get easily"</li> </ul>
Emotional Intolerance	<ul style="list-style-type: none"> <li>• "I can't stand the feeling in my stomach, just before a test"</li> </ul>
Entitlement intolerance	<ul style="list-style-type: none"> <li>• "I deserve nothing less than 'A' for my effort, I can't stand getting a lower grade"</li> </ul>
Discomfort intolerance	<ul style="list-style-type: none"> <li>• "I need to be in the right place to study, I can't stand any unnecessary noise"</li> </ul>
Achievement intolerance	<ul style="list-style-type: none"> <li>• "I can't stand failing at anything"</li> </ul>

**Figure 2.6: The inferential cognitions stemming from different kinds of low frustration tolerance**

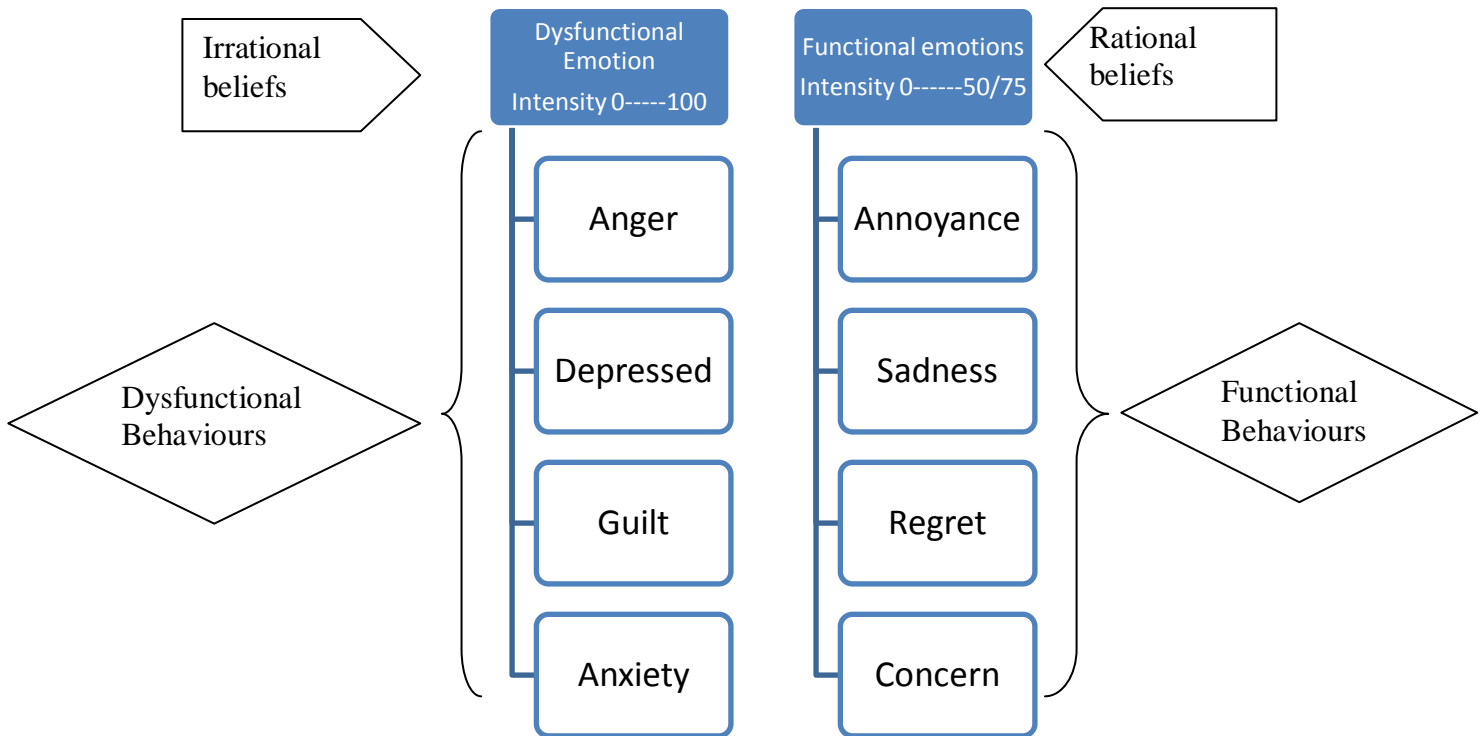
REBT notes and recommends that as there are no healthier terminologies to denote the functional emotion alternative to frustration, not just in English but in other languages of

the world. Thus relegating the functional (rational) alternative, to ‘acceptance’. The choice of the term acceptance leads to much resistance as it is confused for ‘giving up’, ‘approving’ or ‘condoning the behaviour’ (Digiuseppe et al 2014). As Individuals when asked to accept the difficulty/unfairness faced in a situation, they think it is an added unfairness to ‘accept’ the situation and instead demand the situation to be changed. Not realizing that the only way to change the situation is to continue efforts in the direction of the goal and persist rather than succumb their efforts.

### **How irrational/rational beliefs (cognitions) result in emotion.**

As stated earlier, REBT postulates that irrational beliefs result in dysfunctional, maladaptive positive and negative emotions leading to emotional/psychological disturbance that impairs behaviour efficacy. While rational beliefs result in functional, adaptive (even intense) positive and negative emotions, resulting in emotional/psychological adaptation that maximizes behaviour efficacy. Ellis proposed that irrational beliefs lead to unhealthy emotions – anger, anxiety, depression and guilt. Rational thinking leads to intense healthy emotions – annoyance, concern, sadness and regret.

REBT also proposes a model to comprehend the intensity of the emotion experienced. One of the major proponents of REBT, Dryden (2008), states that the more intense the emotion, higher is the accompanying sympathetic arousal leading to cognitive constriction, that impairs judgement and often resulting in irrational behaviour, which further worsens the situation being experienced. REBT basis the above on the Yerkes-Dodson (1908) law that “.high sympathetic arousal impedes performance resulting in dysfunctional attention/problem-solving and maladaptive performance skills”. REBT maintains that emotions are not eliminated, just changes tracks from dysfunctional to functional. And as per the Yerkes Dodson’s law, owing to the nature of functionality, functional emotions largely remain away from extremity to sustain its functionality.



**Figure2. 7: Ellis's model of maladaptive emotions and their adaptive alternatives**

The journey of (inconspicuous) belief to palpable (conspicuous) emotion, happens through cognitive appraisals of the event being experienced by the individual, these appraisals or evaluations determine how the current experienced event is being represented as being relevant or otherwise in achieving a goal or well being. The theory of appraisal postulates that cognitive evaluation (appraisal) occurs at two levels – primary and secondary (Lazarus 2000, as mentioned by Digiuseppe et al 2014).

While primary appraisal decides the motivational relevance (whether the occurrence of the event is in line with the person's goal) and motivational congruence (the degree/intensity of the relevance). The secondary appraisal decides based on the presence of the type of the rational or irrational belief the subsequent functional or dysfunctional emotion

chosen from one of the families of emotions (depression/sadness, anxiety/concern, anger/annoyance, or guilt/remorse).

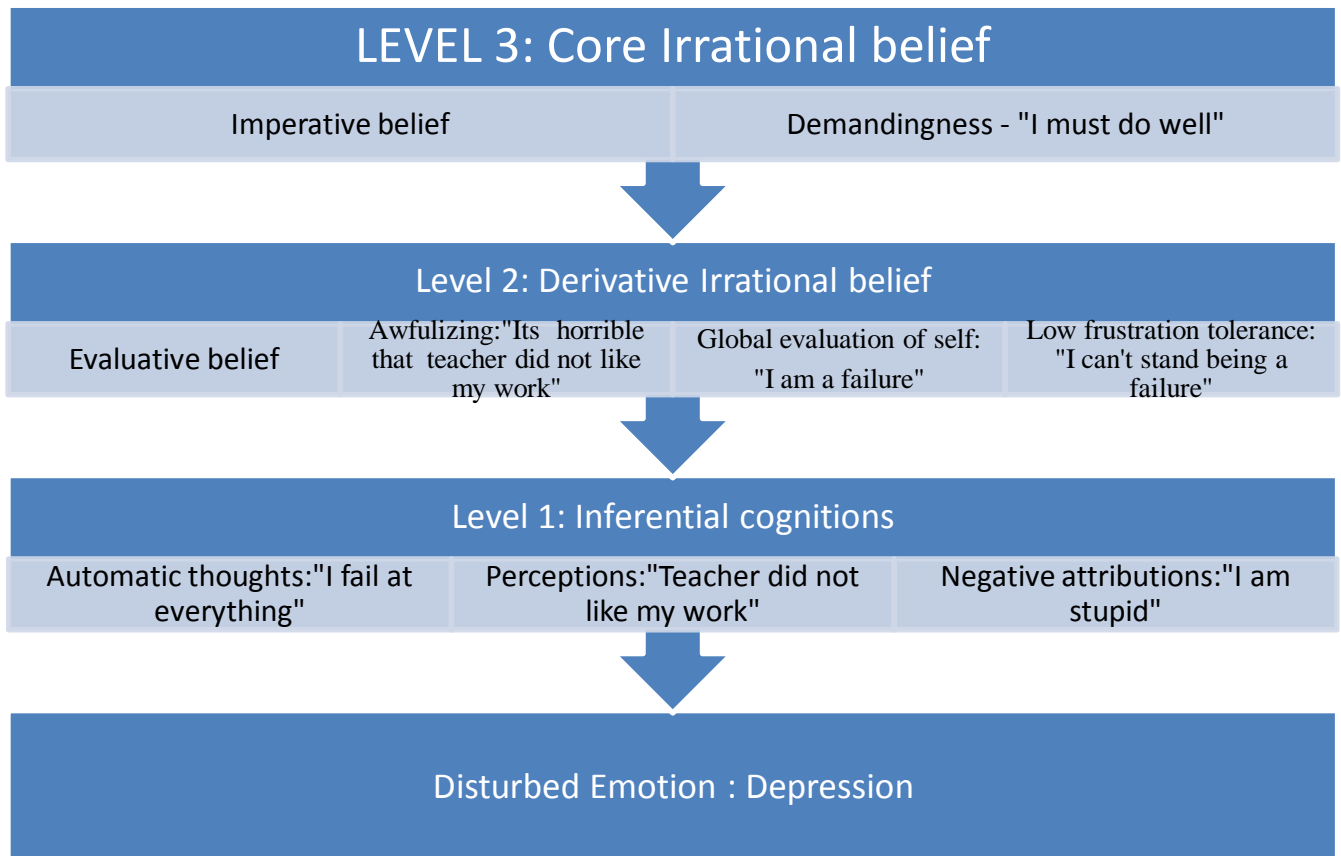
REBT also demarcates the levels of cognition that lead from the irrational/rational belief to the emotional disturbance in the context of consciousness and nature of evaluation.

The first level occurs in the stream of consciousness are ‘inferential’ in nature i.e it comprises of the perceptions of the event and the inferences arrived at based on the perceptions. These inferences are automatic thoughts that an individual is aware of.

The second level constitutes of evaluative cognitions, these cognitions attach values to the inferences in terms of their motivational relevance and motivational congruence (in other words, whether they align themselves towards goal achievement and the intensity of the alignment). REBT considers that second level cognitions as derivative irrational beliefs that can be grouped into three categories – awfulizing, low frustration tolerance and global evaluation of human worth. They are evaluative in the sense that, they decide how bad the inferences drawn are (awfulizing), whether they can be tolerated (low frustration tolerance) and lastly it determines the worth of the person involved (global evaluation of human worth).

The last level constitutes the imperative/schematic cognitions, these cognitions frame the schemata of the world as construed by the individual and thus place demands on how the world ought to be (in other words confirming their schema). REBT proposes three types of demands or musts that an individual inhabits: I must ...; Others must.... and The world must....(Ellis etal 2005, as mentioned by Digiuseppe etal 2014).

Though, the level 1 (inferential) cognitions are proximal to the event and readily available to the consciousness. It is the level 2 and 3 (evaluative and imperative) cognitions that are the fundamental cause for the occurrence of the emotional/psychological disturbance.



### **The ABC model, The A<sub>2</sub>IB<sub>2</sub>C<sub>2</sub> and The ABCDE model**

The ABC model postulates that an activating event A, perceived as an unfortunate environmental occurrence due to the irrational belief (I) B, resulting in dysfunctional behavioural consequences C.

The A<sub>2</sub>B<sub>2</sub>C<sub>2</sub> model conceptualizes the 'meta-disturbance' or the 'secondary emotional problems'. Where the secondary activating event A<sub>2</sub> is the preceding ABC model's consequence (behavioural and feeling), processed by (another imperative) secondary irrational belief (I)B<sub>2</sub>, resulting in a secondary consequence C<sub>2</sub>. REBT postulates that individuals demonstrate the 'meta-disturbance' or 'secondary emotional problems' when they find themselves – angry about their temper tantrums or depressed about being depressed or guilty about their angry outbursts or angry about their depression or anxious about their anxiety attacks. In other words individuals demonstrate problems about their problems.

The ABCDE model

REBT postulates this model as the therapeutic expansion of the ABC model. Once the individual is able to backtrack their consequence C to the relevant irrational belief (I)B.

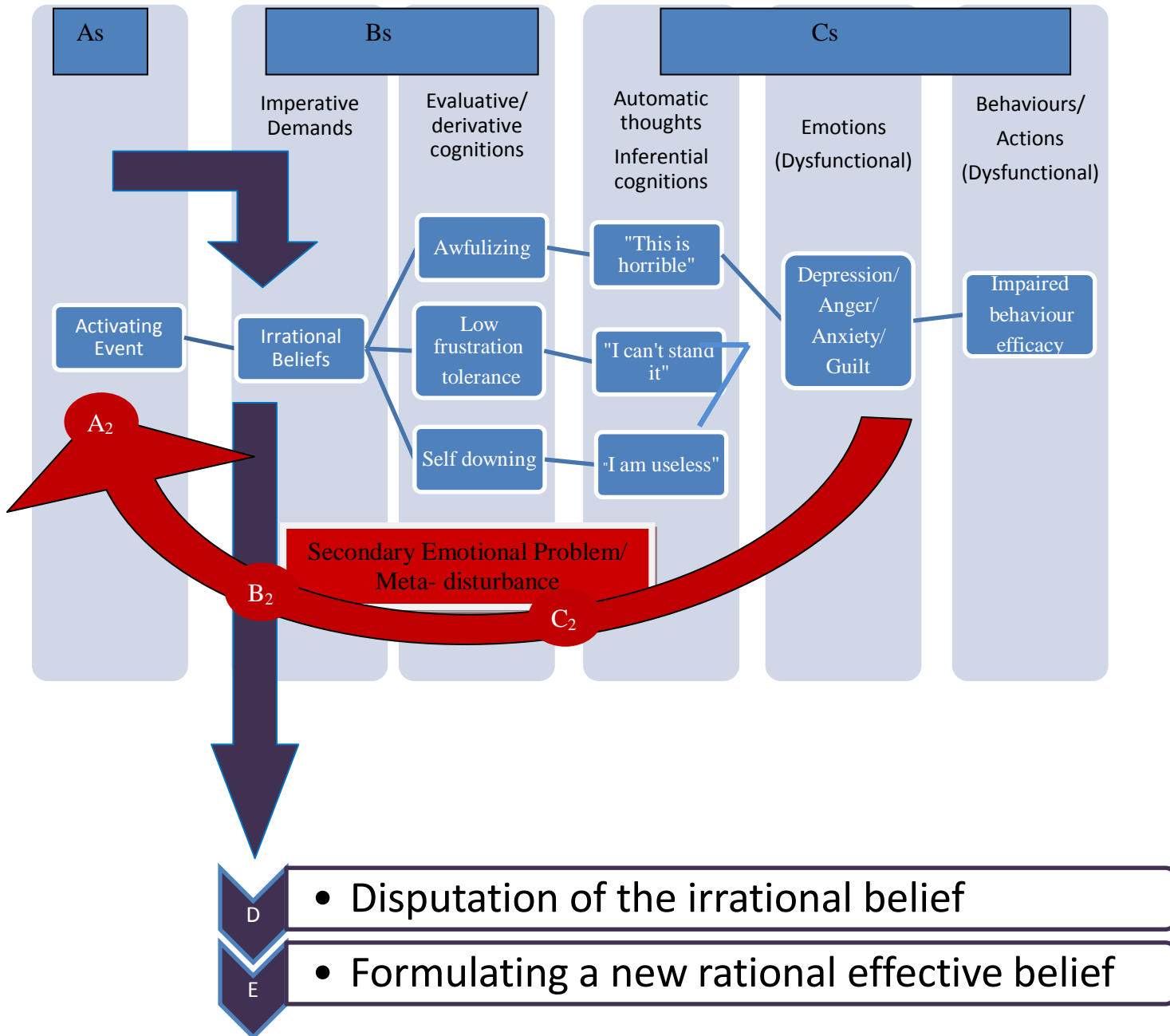
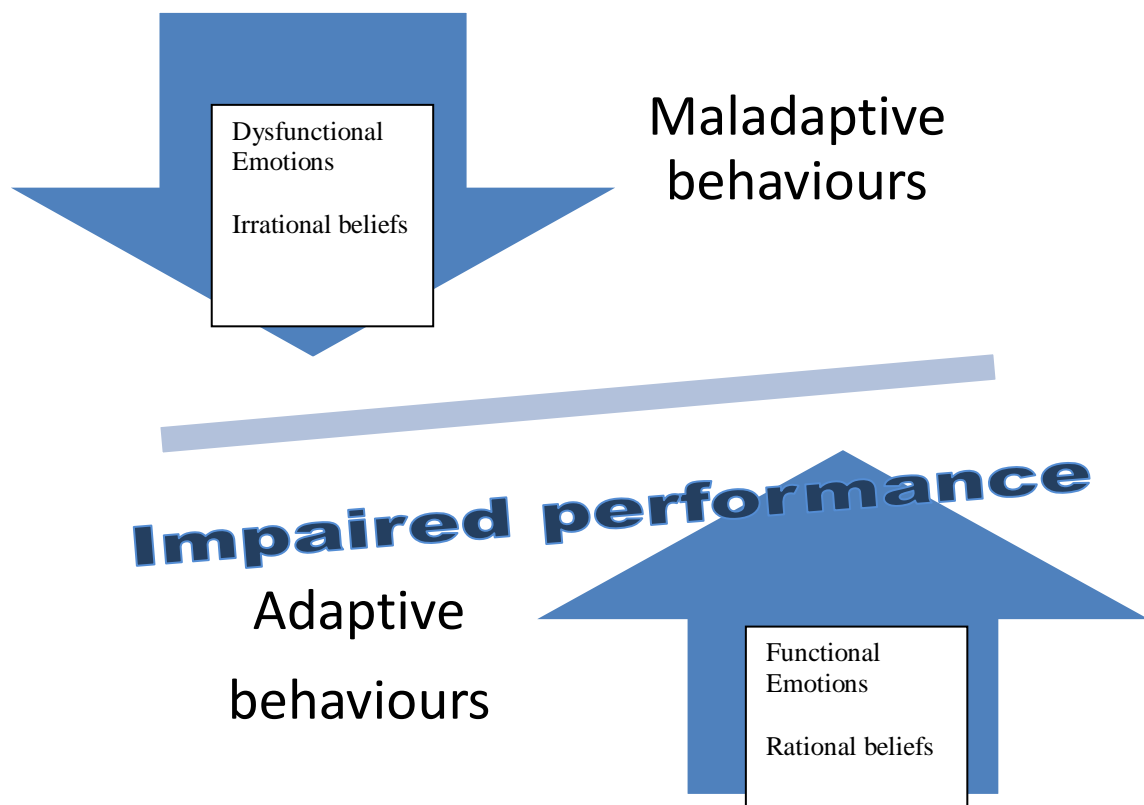


Figure 2.8: The ABCDE model

The next therapeutic step consists of disputation D of the irrational belief (I)B, and replacing it with the effective/rational belief (E).

The current research, uses the theoretical framework of REBT, to understand a) the distinction between functional and dysfunctional emotions and b) to replace the irrational beliefs with rational beliefs, which are considered to be the seed of the emotion. The research lays much focus on the belief content of ‘Achievement’ in the five irrational processes (five principles of irrational beliefs) among them more importantly on the irrational belief of low frustration tolerance (see fig 2.3).

The previous two constructs of Seligman’s 2007 learned optimism and Dweck’s 2007 growth mindset, leads to the importance of persistence of effort and ensuing emotions that accompany frustrated goals. REBT provides the constructs of beliefs (cognitions) being the source of emotion and not the situation. And thus promotes the substitution of irrational beliefs that are the source of intense maladaptive (positive and negative) emotions to rational beliefs that lead to adaptive (positive and negative) emotions.



**Figure2.9: Role of REBT in the context of impaired academic performance**



Having successfully countered the road blocks namely irrational beliefs and dysfunctional emotions that, could impede sustenance of efforts. The current research now explores the next construct, in the model in focusing on the effort that ensues towards goal achievement. When embarking on a new path/plan, what primarily decides success is the factor of following the plan. This requires a continuous evaluation and regulation of behaviours as being conducive or not to the set plan. The next construct in the model is akin to cultivating such a skill that makes ongoing assessment and necessary regulation of one's behaviour, with regard to goal achievement.

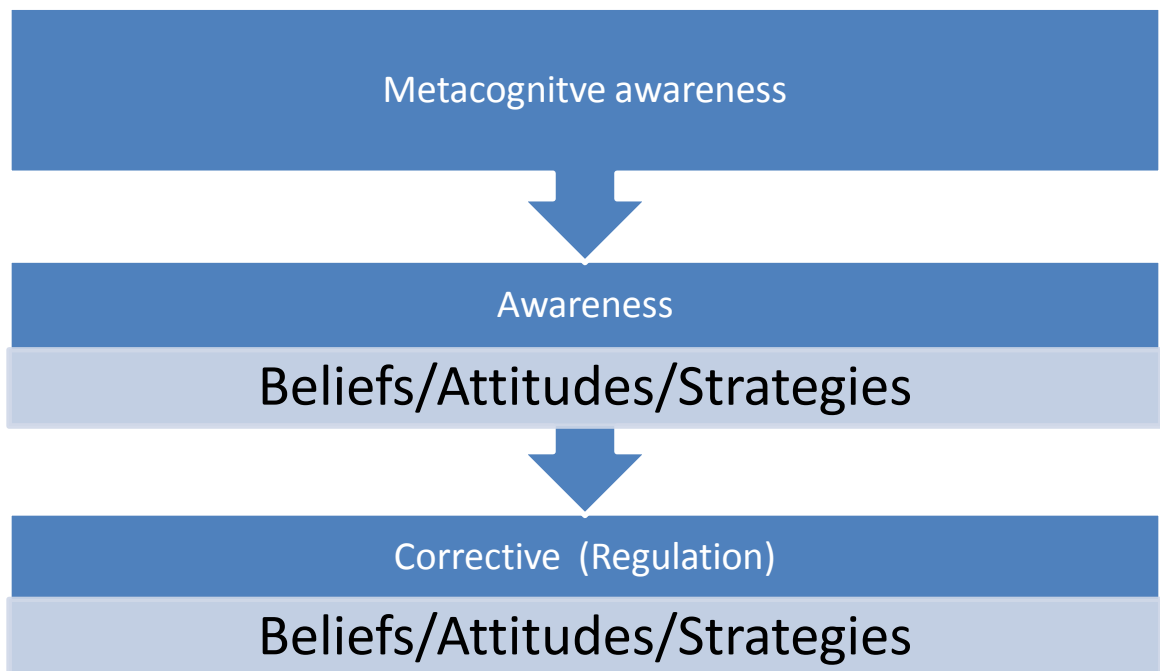
### **Metacognition**

Metacognition can most simply be understood as “thinking about thinking.” Metacognition consists of two components: knowledge and regulation. Metacognitive knowledge includes knowledge about oneself as a learner and the factors that might influence performance, knowledge about strategies, and knowledge about when and why to use strategies. Metacognitive regulation is the monitoring and changing of one's cognition and includes planning activities, awareness of comprehension and task performance, and evaluation of the efficacy of monitoring processes and strategies. Metacognitive awareness is often looked at as an integral component of the larger theoretical construct of self regulatory learning. Metacognitive awareness enables a learner to be aware of the governing cognitive constructs and in replacing maladaptive cognitive skills. Also metacognitive awareness will enhance the individual's awareness of strategies to improve upon the learning process while continuing to pay attention to motivational component as well. Thus a learner develops a personal feedback system to evaluate one's own learning and instead of one size fits all, individuals' self design the strategies best suited for them keeping in mind their individual optimum conditions to learn, thus decreasing resistance on imposed strategies.

Metacognitive awareness allows individuals to fine tune strategies once the plan of learning begins to roll out. Thus, paying attention to, the external process of, learning

than to, draw attention towards internal-ability related concerns thus, decreasing chances of self-doubts on ability.

Metacognition has been referred to as “mental self government”, Sternberg 1988,97. It is a higher order cognitive function that is aware of and regulates other cognitive functions. Flavell first introduced the term ‘metacognition’ in 1975,



when he wrote in his seminal work with regard to problem solving as “...One’s knowledge about one’s own cognitive processes or products..or anything related to them...refers among other things..the active monitoring and consequent regulation and orchestration of these processes.. usually in the service of some concrete goal or objective..” In these lines Flavell 1975 highlights the executive role of regulation played by metacognition. Flavell 1975 expounds by providing the suitable examples like, “...I am engaging in metacognition, if I realize that I am having more trouble learning ‘A’ than ‘B’....If it strikes to me that I must double check ‘C’ if I need to accept it as a fact..If I become aware that I am not really sure what the experimenter really wants me to do..If I sense that I better make a note of ‘D’ before I forget..If I think to ask someone about ‘E’, to see that I have it right..”.

Flavell's 1975 conception of 'metacognition' led research in diverse aspects of the process, namely –checking, planning, selecting and inferring (Brown 1978, Scardamalia and Berierter 1985); Self interrogation and introspection (Chi etal 1994); interpretation of ongoing experience (Flavell and Wellman 1977) or simply making a judgement of what a person knows or does not know about an upcoming task (Metcalf and Shimamura 1994).

Schraw (1998), describe metacognition as a multidimensional set of general, rather than domain-specific, skills. These skills are distinct from general intelligence, and may even help to compensate for deficits in general intelligence and/or prior knowledge on a domain during problem solving. This brings to light another functional aspect of metacognition – critical evaluations of one's cognitions.

Martinez defines critical thinking as “evaluating ideas for their quality, especially judging whether or not they make sense,” and considers it as one of three types of metacognition, along with metamemory and problem solving. Hennessey (1999) identifies a list of metacognitive skills that are quite similar to skills commonly associated with critical thinking:

- evaluating the basis of one's beliefs;
- isolating one's conceptions in order to assess competing conceptions;
- assessing the relationship between one's conceptions and instances that might or might not support those conceptions;
- evaluating objectively the status of one's own conceptions;
- assessing the consistency and generalizability present in one's conceptions.

Cross and Paris (1988) have stated that metacognition includes affective and motivational states. Martinez (2006) argues that metacognition requires the management of affective states, and that metacognitive strategies can improve persistence and motivation in the face of challenging tasks. Paris and Winograd (1990) agree to the preceding argument and add that affect is an inevitable element of metacognition, because as students monitor and appraise their own cognition, they will become more aware of their strengths and

weaknesses. Thus metacognition sustains efforts in the eventuality of failure and ensures the quality of the effort harnessed, keeping the objective of the effort in sight.

The Self regulatory Executive function (S-REF) model as proposed by Wells and Mathews (2009), makes the principal contention that rather than the content of the thought, the style of thinking about a situation maintains the emotional distress of the situation. This ‘extended thinking’ about the situation termed the cognitive attentional syndrome (CAS) is often held responsible for causing and maintaining psychological ill health. Metacognition thus involves a cultivation of a distinct style of private speech or speaking to self ...for example “Wait !! here i go again .. i got low marks not bad marks .. and i am getting too sad to do anything about it ... if i continue like this i will not do what it takes to improve ... which is study!!...i need to first reduce my sadness .. by understanding that this process is difficult, i need to try again and not jump to conclusions about my ability... and more importantly getting low marks does not mean i am stupid ... i would have loved to see that my efforts converted to high marks but it does not mean i must always get high marks..”

This unravels the less researched aspect of metacognition that of ‘self –reflection’ of attending to ones thoughts in the moment and reconsidering one’s actions during the moment.

### **Self- reflection as an integral component of metacognition**

Schon in “The Reflective Practitioner” (1987), mentions two processes – reflection-in-action and reflection-on-action. While the former describes thinking about the situation in vivo, the later speaks about thinking about the situation in its aftermath. Thus, earning ‘self-reflection’ an essential constituent of, metacognition.

Boud etal 1985 described reflection as “..he [the student] has to see on his own behalf and in his own way the relations between means and methods employed and results achieved. Nobody else can see for him, and he can’t see just by being \_told‘, although the right kind of telling may guide his seeing and thus help him see what he needs to see” (as cited in Bormatova 2010).

Bormatova 2010, considers metacognitive reflection of learning, as recounting of his/her experiences and/or feelings related to a particular situation. Such recounting usually adopts a narrative form, to work through the attitudes and emotions influencing their academic behaviours. Or as stated by Powell (1985) “for encouraging students to explore the nature of their own learning experiences and thus deepen their understanding of themselves as learners..”

In discerning the stages of reflection Boud et al. (1985), state that first stage involves returning to the experience. Wherein “...the learner stands back from the immediacy of the experience and whatever personal challenge it may have presented at the time, and simply reviews it...” Bormatova 2010. The individual next learns to consider the experience from other perspectives, or look deeper into the embedded contextual factors that may have caused the situation.

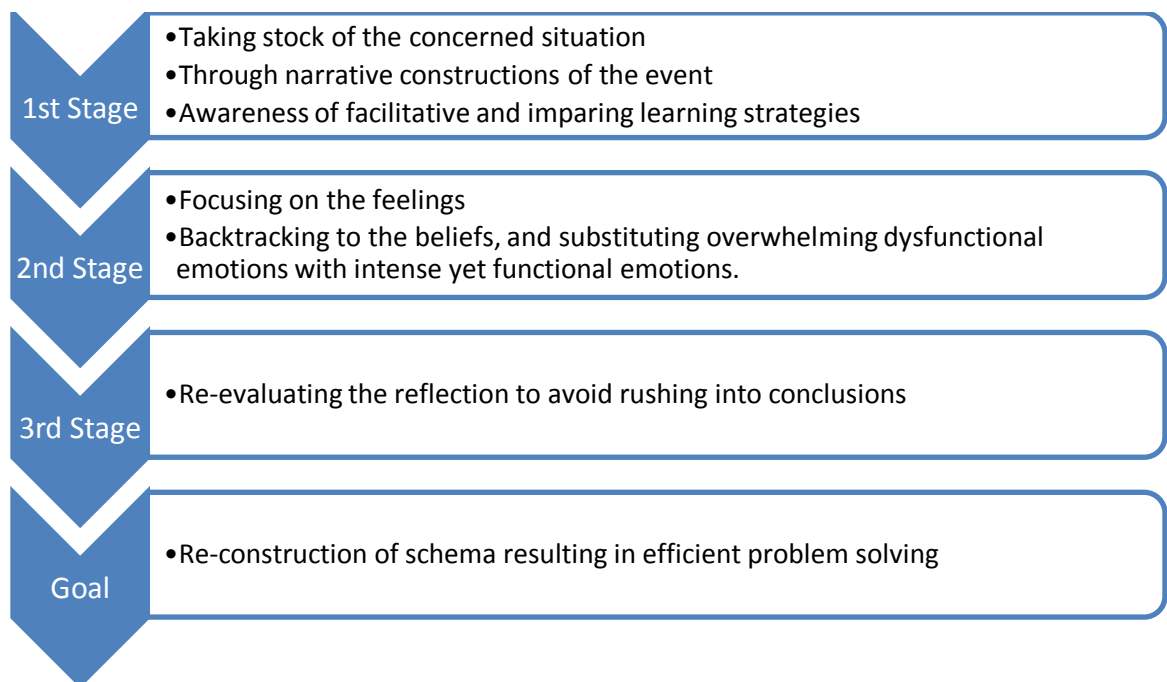
The next stage consists of acknowledging the ‘feelings’ accompanying the experience, though according to Boud et al 1985, these feelings depending on their ‘positivity or negativity’ either aid or impede the process of learning.

In the light of the theoretical framework of REBT, the researcher proposes that awareness and deciphering of these feelings whether positive or negative will aid in educating the individual about their sources of perception. Such redefinition counters successfully the concerns of being overwhelmed by the emotional intensity of the situation, as (REBT posits) emotions are regarded as the gateway to the belief, thus shifting the focus to the underlying belief than dwelling on the intensity of the emotion. Also REBT proposes the replacement rational beliefs that lead to functional emotions that facilitate objective thinking and efficient problem solving.

The last stage of reflection is ‘re-evaluation’ or ‘re-assessing’ the evaluations of the experience, so as not to rush into conclusions.

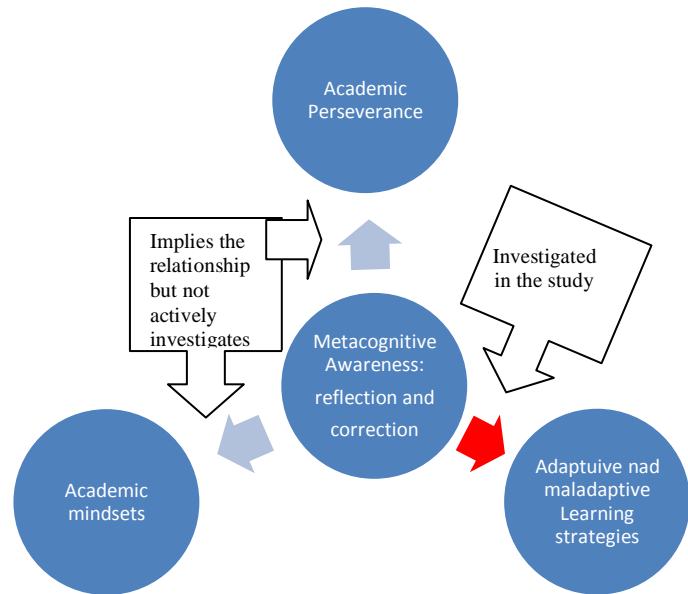
The outcome of such reflection, Boud et al 1985 claim would lead to accommodation in the existing cognitive schemas and result in self engineered solutions that best fit the student. Thus instead of teaching ‘sure shot study skills’ , teaching them to observe themselves, will lead them to customizing the skill, to make it work the best.

Also not all the emotional by-products are addressed, a sense of being overwhelmed at the ambitiousness of the goal can be set right by metacognitive awareness by logically breaking down into achievable smaller goals and by cultivation of optimistic explanatory style plus a growth oriented mindset.



**Figure 2.10: Boud et al 's Stages of metacognitive reflection adapted to the current research objectives.**

The current research embeds the above construct of metacognitive reflection in two contexts, one of Academic perseverance and mindsets (Learned optimism, growth mindset, rational

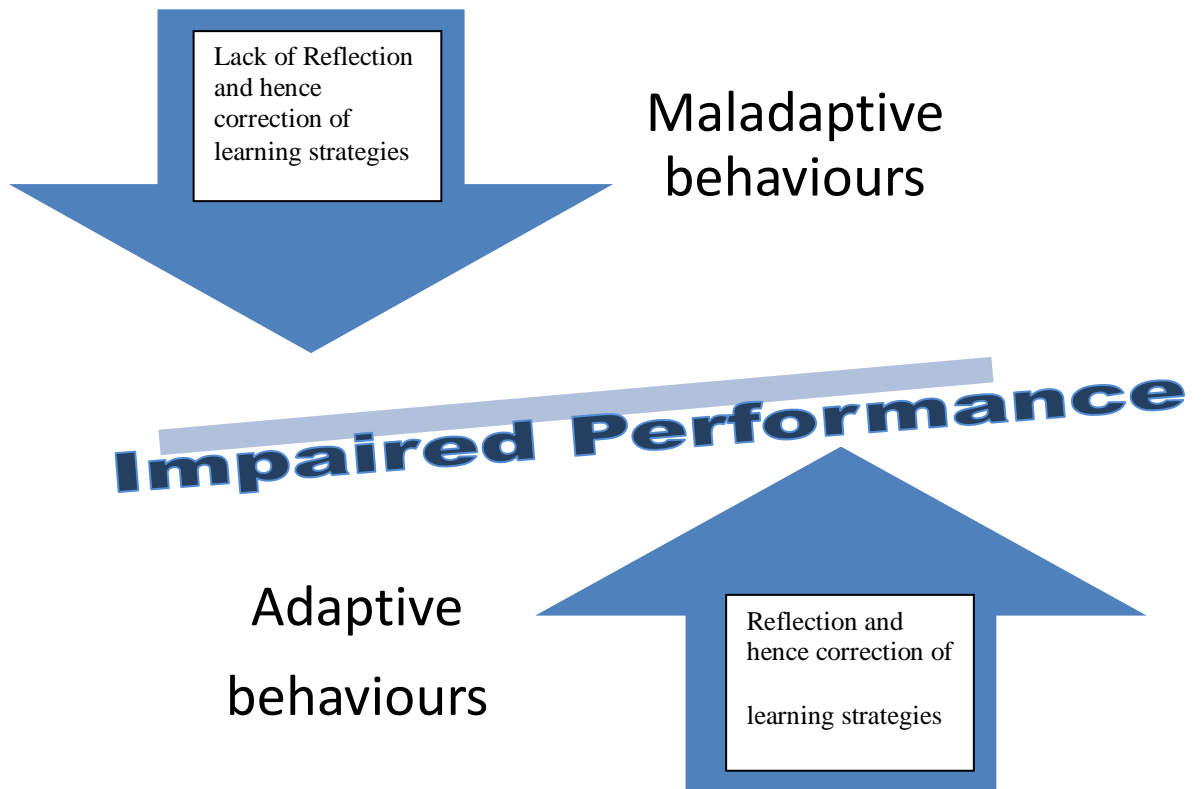


beliefs and functional emotions) and learning strategies (metacognitive awareness of learning strategies) (categorization based on Farrington, Roderick et al 2012 of non-cognitive factors influencing academic achievement).

The current research directly tests the influence of metacognitive awareness (reflection) on academic achievement. And implies that, metacognitive awareness is an inherent component in the process of relearning academic perseverance and mindsets (explanatory style, growth mindset and low frustration tolerance), but does not examine this claimed relationship.

The current research instead proposes, assess and attempts to train students in metacognitive awareness of effective learning strategies as a significant learning strategy en route from impaired academic performance to academic achievement.

**Figure 2.11: The facilitative role of Metacognitive awareness**



### ‘ME’ in ‘WE’

The research until now has focused on factors that are intrapersonal in nature with reference to the student. The study now embeds the intrapersonal constructs in the interpersonal context of classroom learning. Bronfenbrenner 1994, posited that to understand the human

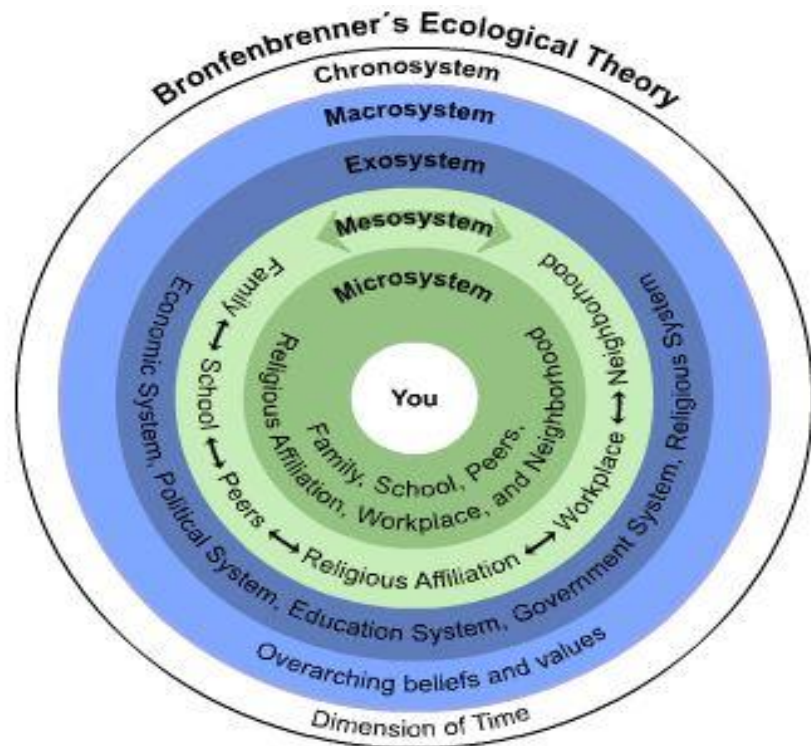


Figure 2.12 : Bronfenbrenner's Ecological theory



development, it must be studied with reference to the larger ecological context in which the development occurs. Bronfenbrenner delineates this surrounding ecology into five layers – Microsystem, Mesosystem, Exosystem, Macrosystem and Chronosystem, with the individual placed in the centre of the model. The theory was renamed ‘Bioecological theory’, to include individual’s biological disposition as another layer of environment influencing development.

The two defining propositions of the model are: Proposition 1, human development is a consequence of the interaction of the biopsychological human organism and the persons, objects and symbols in its immediate surrounding environment. To qualify as an effective interaction, the concerned interaction needs to occur in a consistent pattern over a sustained period of time. Such interactions are termed as proximal processes, which include child-parent, child-child, child-teacher. Proposition 2, states, that the quality of the proximal processes, can ameliorate or abet unfavourable child inherent characteristics or contextual features of the surrounding. Research studies on the model have revealed that buffering of the proximal processes are protective against developmental dysfunctions in the initial developmental phases, in socioeconomically disadvantaged background. But with regard to developmental competencies (like academic achievement, mental ability, social skills) proximal processes can only have an accelerating influence in socio-economically advantaged and stable environments.

The proposed theoretical model consisting of the intrapersonal constructs of learned optimism, mindset, rational beliefs and metacognitive awareness in the multilayered embedded Bioecological model of development. Acknowledges, that only if, the larger (remote) contextual layers remain non-intrusive and non-abusive. The proximal process comprising the classroom learning experience (as perceived by the student) especially student-peer and student – teacher relationship will play an influential role in student’s academic competency.

## **Influence of Emotional climate of a classroom academic achievement**

Much of Academic learning takes place in a classroom, the personal process of learning thus unravels in a web of social interactions. Social interactions comprises of ones fellow learners or peers and the authority figure, the teacher who leads the learning process. The nature of these interactions decides the emotional climate in which the learning process either nurtures or withers. Goodenow

(1993), wrote in reference to this climate “...Students’ sense of being accepted, valued, included, and encouraged by others (teachers and peers) in the academic classroom setting and of feeling oneself to be an important part of the life and activity of the class. More than simple perceived liking or warmth, it also involves support and respect for personal autonomy and for the student as an individual...” Referred to as the ‘sense of belongingness’ Goodenow 1993, described it as “the extent to which students feel personally, accepted, respected, included and supported by others in the school social environment..”

According to, the report investigating the influence of, ‘Belongingness’ and ‘Intimacy’ on retention of students, by Cashmore et al 2012. Educational researchers have concurred though not as vigorously investigated that ‘sense of belongingness as one of the significant determiners of effective learning environments. The sense of belongingness that students experience in their classrooms is suggested to bolster their beliefs in their own academic motivation and eventual success. While students who acknowledge a healthy sense of belongingness experience more positive affect like enthusiasm, happiness and interest leading to more academic engagement. Students who feel ‘isolated’ report more negative affect like anxiety, boredom, frustration and sadness depreciating their quality of academic engagement and eventually their academic performance.

"..I have come to the frightening conclusion that I am the decisive element. It is my personal approach that creates the climate. It is my daily mood that makes the weather. I possess tremendous power to make life miserable or joyous. I can be a tool of torture or an instrument of inspiration, I can humiliate or humor, hurt or heal. In all situations, it is my response that decides whether a crisis is escalated or de-escalated, and a person is humanized or de-humanized. If we treat people as they are, we make them worse. If we treat people as they ought to be, we help them become what they are capable of becoming..." Ginot

The sense of belongingness plays a more pivotal role during the period of adolescence, when individuals venture outside their family circles seeking 'sense of personal space' and are most vulnerable to influences in either positive or negative directions. The acute sense of 'self consciousness' that accompanies adolescence impairs classroom engagement, as the overwhelming-ness of 'public exposure' elicits dysfunctional emotions of embarrassment and shame could cripple academic learning in classrooms.

Dweck (1995,2011) mentions similar phenomenon with respect to adolescence being susceptible to unkind peer reviews during classroom participation and develop aversive or avoidant behaviours to 'effort-based learning' and encourage 'ability based learning'. The report elucidates the protectiveness aspect of sense of belongingness, that immunizes students from school related anxiety, stress, self handicapping behaviours, internalizing symptoms (like shyness and loneliness), emotional withdrawal, alienation and even risk behaviours like delinquency and drug use. And nurtures, self-efficacy beliefs in adolescents, academic-help seeking behaviours, academic engagement, self regulation and autonomy.

While much research successfully relates and even establishes a cause and effect relationship between sense of belongingness and academic self-efficacy, academic engagement and even academic persistence. Not many researchers have explored the relationship between sense of belongingness and academic performance.

A study by Goodenow 1993, attempted to investigate the adolescent sense of belongingness and academic motivation, effort and achievement. In specific subject areas of – science, mathematics, English and social sciences. They found out that the single most powerful predictor of student's effort and achievement were student's perceptions of teacher support, interest in and respect for students. This led researchers to latter distinguish sense of belongingness from generalized social integration and resulted in considering sense of belongingness as student's subjective perceptions and feelings of connectedness towards one's peers and teacher.

The study of Perceived sense of belongingness in academic environments was broadly investigated in the research attempts of Tinto (Tinto, 1975; Tinto, 1988; Tinto, 1993; Tinto, 1997; Tinto, 1998). These studies brought in the focus to a group of institutional structural factors, and related it to early. The studies dwelled into the variety of backgrounds, intents, and commitments that students came from.

Tinto's model mostly studied the effects of academic and social experiences on a student's decision to remain at an institution. Tinto's model asserts that students who engaged in formal and informal academic and social integrative experiences are less likely to leave their institution. Tinto's model proposed three groups of variables, that led resulted in this integration.

1. 'Pre-college characteristics': family background, skills and abilities and previous schooling experiences;
2. College experience: students' area of study, academic performance, the volume of and quality of student-faculty interactions.
3. Students' out-of-class experiences: participation in extracurricular experiences, and student-student interactions.

Thus Sense of belonging as a concept was also studied as a synonym for social integration. Until Hurtado and Carter (1997) distinguished sense of belongingness from social integration. Sense of belongingness was looked at as a psychological factor focusing on students' subjective feelings of connectedness or cohesion to the institution. In their longitudinal study, Hurtado and Carter 1997 explored factors related to sense of belongingness and concluded that these factors determined student persistence. Thus sense of belongingness came to be understood as feelings or perceptions of affiliation or group membership (Maestas, Vaquera, & Munoz Zehr, 2007). Establishing, the significance of sense of belongingness in academic persistence.

While Hurtado and Carter's (1997) sense of belonging measured students' attachment to the college community, other researchers added to the emerging multidimensional aspect of sense of belongingness.

Pascarella and Terenzini (1991) discovered the influence of college environment on student retention. Zea, Reisen, Beil and Kaplan (1997) re-established the findings that both academic and social integration experiences influenced student persistence in college. A follow-up of the above study (1999) found that academic integration and social integration was predictive of students' institutional commitments, which retained its influence on their academic persistence three years later.

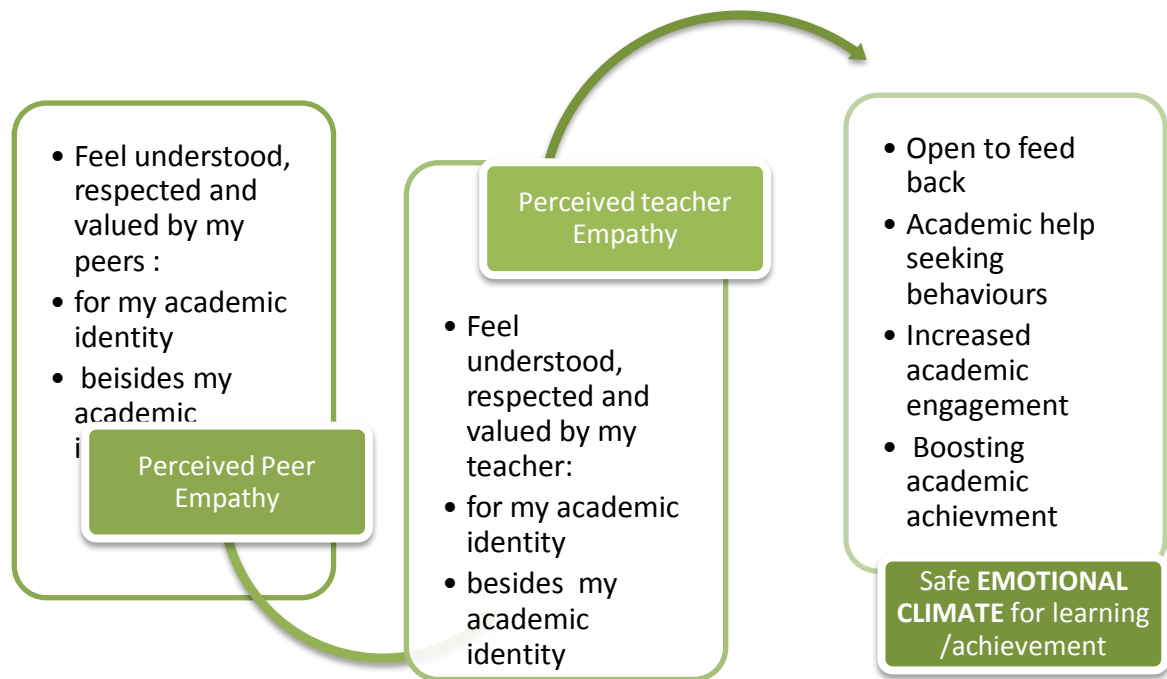
Hoffman et al 2002 isolated the primary elements of the construct of sense of belongingness – 1) The empathetic faculty understanding, 2) perceived peer support, 3) perceived isolation, 4) perceived faculty support and comfort, and 5) perceived classroom comfort.

The current research proposes to understand the above construct of sense of belongingness, especially concerning the academic identity of the individual. The research attempts to gauge the 'perceived empathy' from peers and teachers and the consistency of this 'perceived empathy' in the context academic performance (favourable and unfavourable). Also as Sense of belongingness is considered as an umbrella terminology for various other factors that contribute to the emotional climate of classroom learning, the current research isolates 'perceived teacher empathy' and 'perceived peer empathy' as contributors of emotional climate and proposes to study their relationship to student academic performance.

Thus the researcher proposes to define and study, Perceived emotional climate by the student in a classroom formed by their perception of empathy received from two sources – teachers and peers. While, Perceived peer empathy refers to student's perceptions of being understood and respected by peers for his/her academic identity irrespective of

their academic performance (favourable or unfavourable). Perceived teacher empathy refers to the perceptions of the student being understood and respected for his/her academic identity by concerned teachers irrespective of their academic performance (favourable/unfavourable).

The current research posits that the component of ‘perceived empathy’ creates an emotional climate that is conducive for fostering academic learning and hence improving academic achievement.



**Figure 2.13: Perceived Emotional climate**

The research investigates the relationship of the perceived empathy of the teacher and peers by individual students and its relationship to their academic achievement. The research proposes that the emotional climate of the classroom is thus constructed by teachers and peers and renders it conducive or otherwise to learning and eventually to academic achievement itself.

Below is the diagrammatic representation of adaptive and maladaptive emotional climate in the advent of failure/impaired academic performance, respectively.

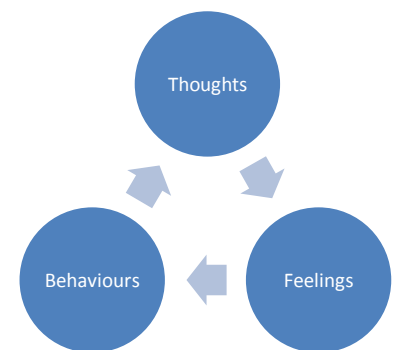
### **Summary of the proposed theoretical framework:**

The idea of an insurance policy is to insure lives that would be effected by an unfortunate eventuality of the policy holder's death. So just as we pay for the rest of the bills to sustain our life experiences so also we pay our premiums acknowledging the certain cessation of life. Acknowledging this certainty does not take away from the quality of our life on the contrary we live with the assurance of our loved ones being taken care of even in our absence Thus befriending impaired performance/failure, learning how to adaptively deal with it, does not make one comfortable with failure/impaired performance or complacent with failure, instead it empowers you with skill sets that enables one to journey towards the milestone of Success.

The proposed model intends to interconnect four theoretical constructs namely Seligman's orientation of explanatory style, Dweck's concept of mindset, Ellis's concept of irrational belief's with regard to achievement and low frustration tolerance and lastly metacognitive awareness enabled reflective and corrective processes.

Using the analogy of how a shock absorber in automobiles, reduces the wear and tear when the vehicle meets with inevitable adversities on the road. A similar shock absorber (or as Salk said psychological immunity<sup>5</sup>) could be envisioned for the human faculty reducing damage done when coasting adversity. The facet of human behaviour being considered here is restricted to the context of academic performance. The adversity spoken of, being limited to the often occurring mistakes, criticism and impaired performance/failure in the process of learning.

The model unfolds in the event of impaired performance/failure and leads the interlinked constructs as already mentioned into patterns of adaptive behaviour or maladaptive behaviour comprising of adaptive or



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<sup>5</sup> As mentioned by Seligman in his book Learned Optimism.

maladaptive thoughts and feelings, the parameter of this judgment being student's academic achievement.

Impaired performance/failure is followed by a set of behaviours that usually can be categorized as either adaptive or maladaptive behavior patterns based on their facilitative or non-facilitative role in reaching the goal.

Human behavior is usually understood in terms of thoughts, feelings and actions. Based on <sup>6</sup> the assumption that actions are most often resultant of underlying feelings that arise from the kernel of thought, the relationship may not necessarily be unidirectional

"...Like music is the silence between the notes.  
.. learning is what transpires between the successes and failures..."

The foremost construct in this model offering a buffer system to effects of failure is Seligman's Learned optimism developed by cultivating an explanatory style which differently attributes impaired performance/failure and success as explained in detail earlier in the section.

Succinctly stated, in the adaptive (thought) pattern following impaired performance/failure, it is attributed to external, temporary and specific causes while success is attributed to internal, permanent and global causes. The rationale for the explanatory style being that it minimizes disappointment in the case of impaired performance/ failure and reinforces self efficacy in the event of success. While the maladaptive (thought) pattern would inversely attribute impaired performance/failure to personal, permanent and global causes, thus increasing the intensity of the disappointment

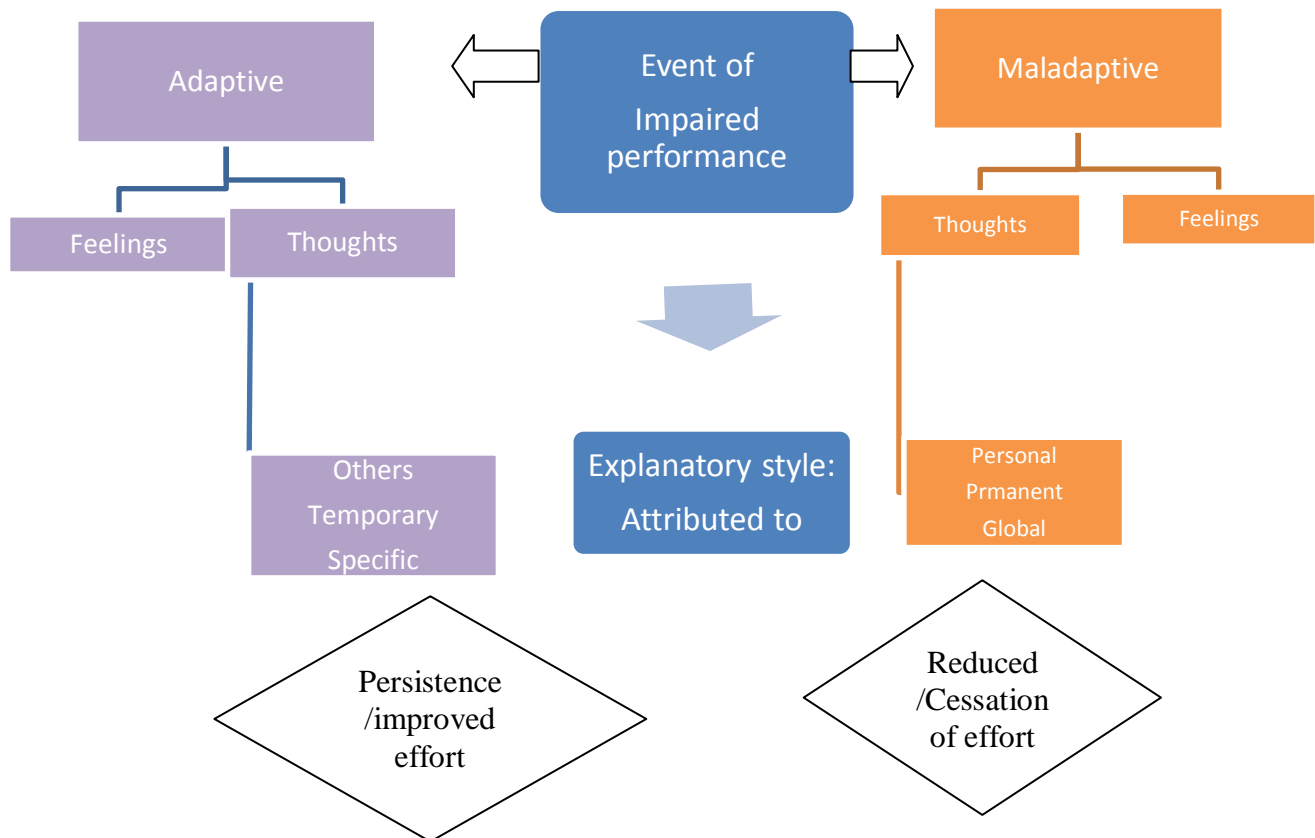
The theory establishes that at the advent of failure individuals do experience depression and helplessness momentarily. There is either cessation of effort in changing the outcome of the performance or if there is effort it is not persistent. This period of depression and helplessness that follows impaired performance/failure is significantly modulated by explanatory style.

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<sup>6</sup> Primary principle underlying Cognitive Behaviour therapies



The theory as elaborated already in the above section, proposes that an optimistic explanatory style will enable a faster recovery from impaired performance/failure as it is viewed as temporary, specific and external. While a pessimistic explanatory style further reins in any proactive measures out of the situation, even minor setbacks reinforces, the experienced depression and helplessness. Thus, developing the adaptive explanatory styles enables an individual to try again.

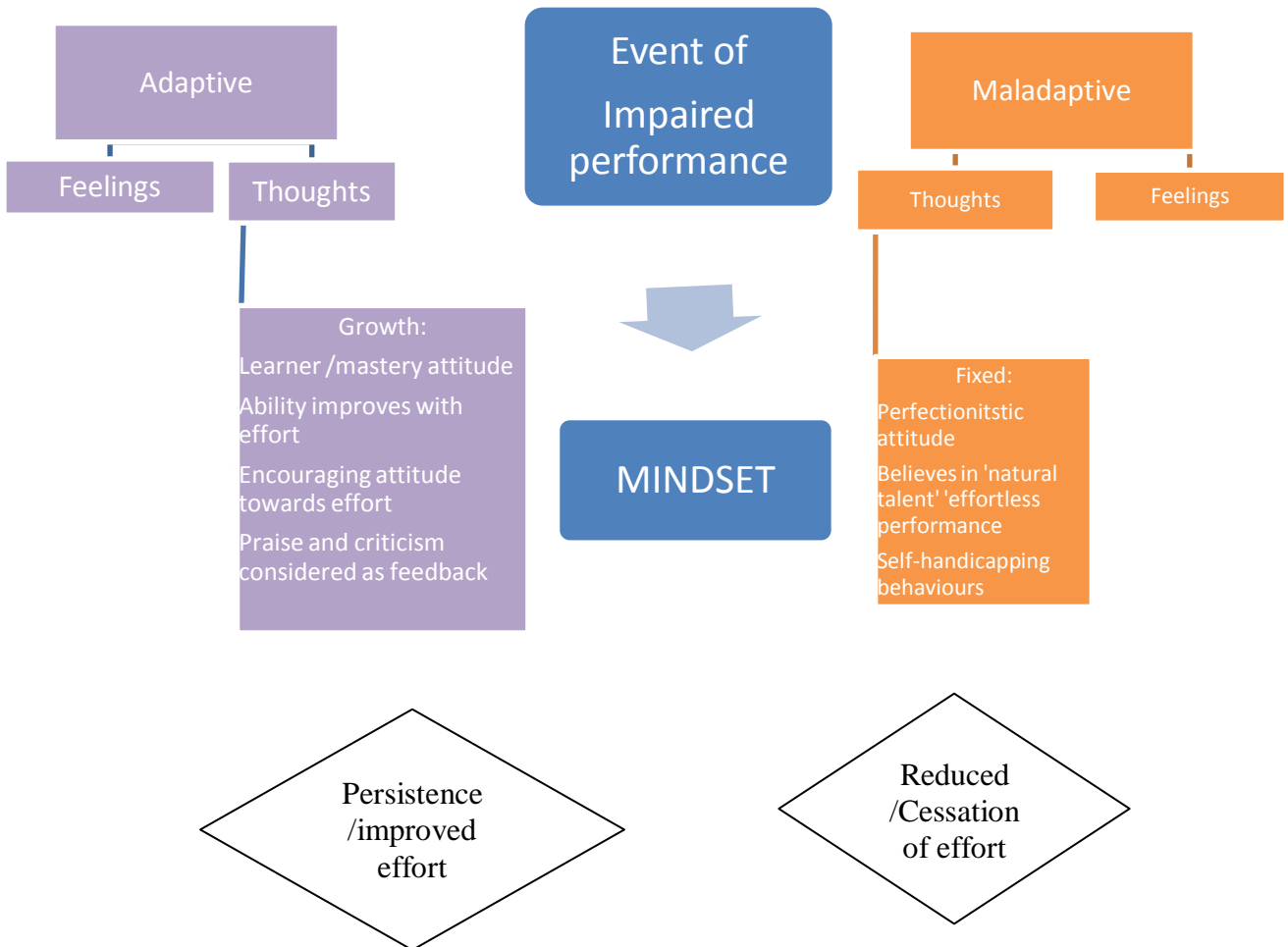


The optimism that allows an individual to try again requires that the individual also harbours the belief that the repeated attempts would bear fruit or change what can be deemed changeable.

This brings in the play of the second construct in the model namely Dweck's theory of mindset. Which proposes that if an individual believes that his/her basic abilities (in this context of academic achievement the ability would be intelligence) can be improved upon

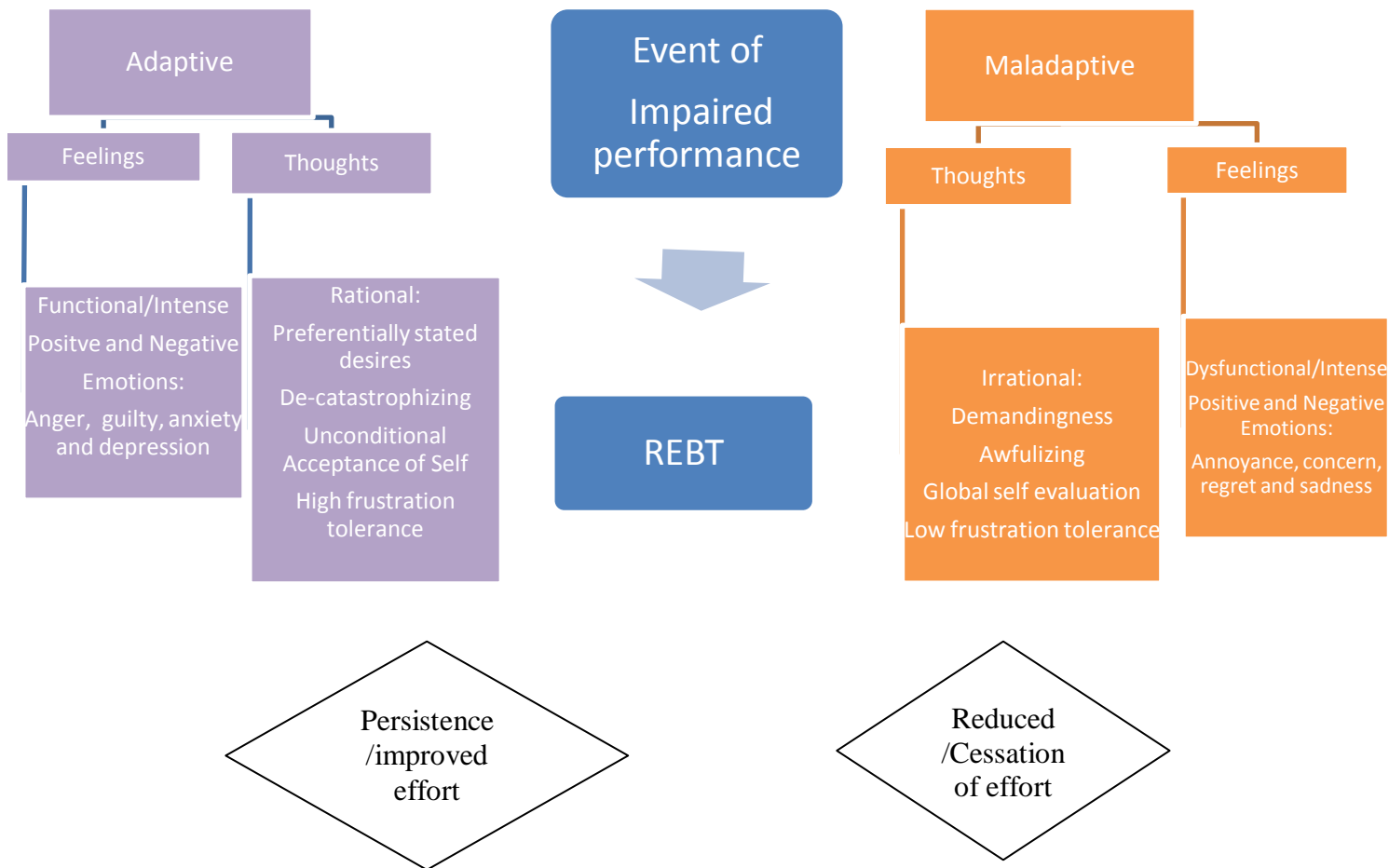
by consistent efforts, then such growth-oriented individuals would remain persistent and take on progressively difficult challenges.

Especially in the face of impaired performance/failure their efforts would continue, as compared to individuals with fixed mindset who hold the belief that basic (intelligence) abilities are fixed and cannot change with any amount or kind of effort. Such individuals would discontinue efforts when faced with impaired performance/failure and choose 'safe' challenges where their chances of winning are very high and challenges where the overall rate of success is very low that losing it would not make them stand out in the crowd.



The next construct in the model takes care of the affective component that is a constant companion of learning – frustration and other intense negative emotions. This is understood and tackled by Ellis’s theory of irrational beliefs and the suggested tools to

counter the same. Ellis posited that emotions are manifestations of underlying thoughts. The rationality of irrationality of these thoughts determine the functionality of the emotions whether positive or negative. The functionality of these emotions empowers instead of overwhelms the individuals, propelling them towards coping or self-handicapping behaviours. The irrational beliefs pertaining to achievement and the role of one of the four core irrational beliefs, low frustration tolerance. Are, the focus of the current research attempt.

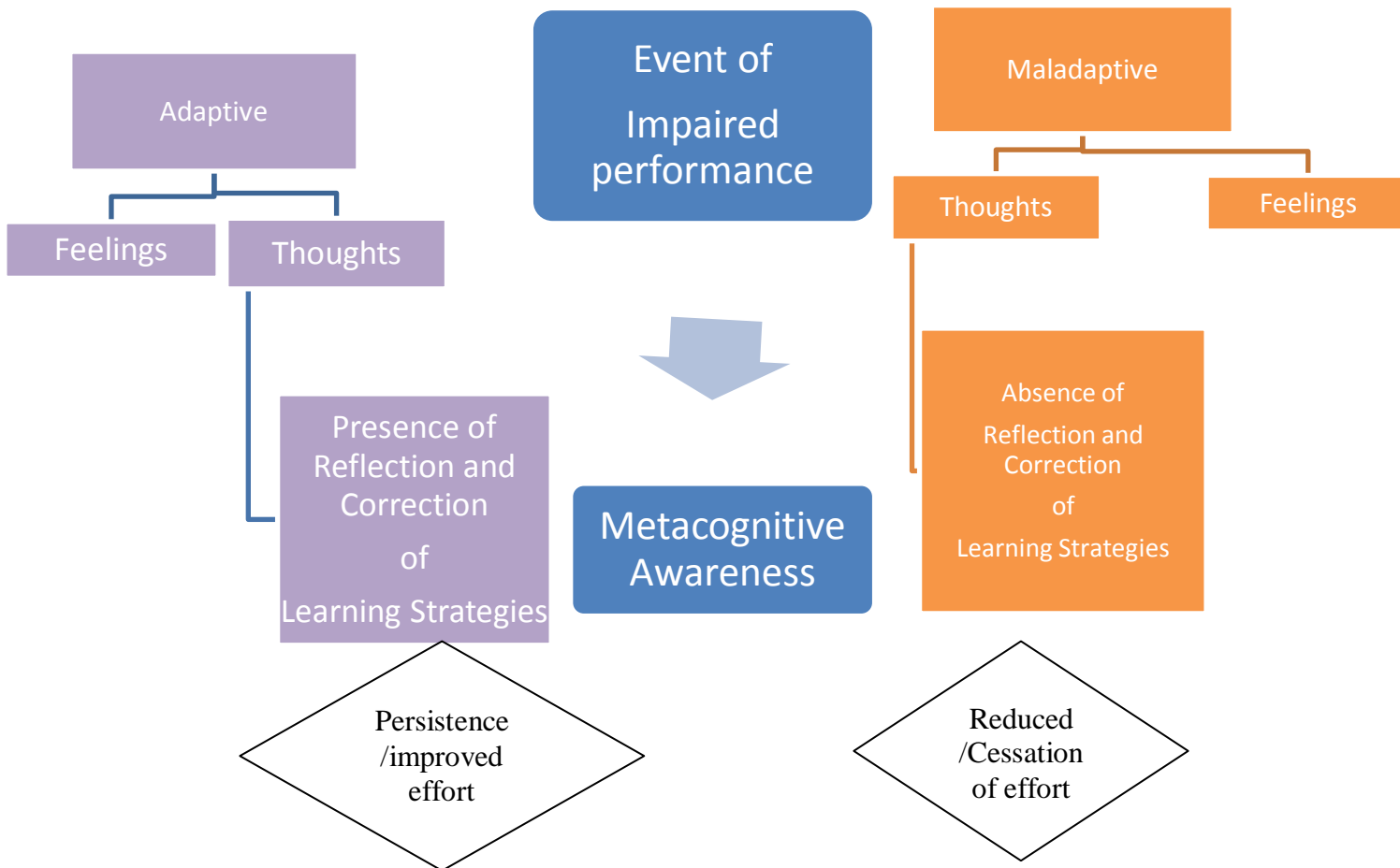


Basically the beliefs manifests itself in thoughts like “if I am good at something then, it must come easily to me”, “If its boring then I should not have to do it”, to feelings of unfairness projected on to the teachers and peers in the learning process. For example – “others have unfair advantages over me”, “teachers are unfair in their evaluation of me” etc. Most often recommended tool to counter such belief systems is disputation. Which very well suits, the target population chosen for the study – adolescents – who are often

inclined to indulge in argumentative communication. Only this time they learn to dispute their own selves.

Having thus equipped individuals with skills to, facilitate functional emotions and the underlying rational beliefs. It becomes very important that in order to change our beliefs and strategies we need to ‘know’ our beliefs and strategies and evaluate them objectively.

And this brings in the fourth component of the model- metacognitive awareness, that empowers an individual to reflect on their thoughts when in/on action and correction of them suitably. Metacognitive awareness allows an individual to unobtrusively or mindfully observe one’s inner workings when engaged in a task thus becoming non-judgementally aware of them. The next step of reflection and correction of strategies allows for efficient working.

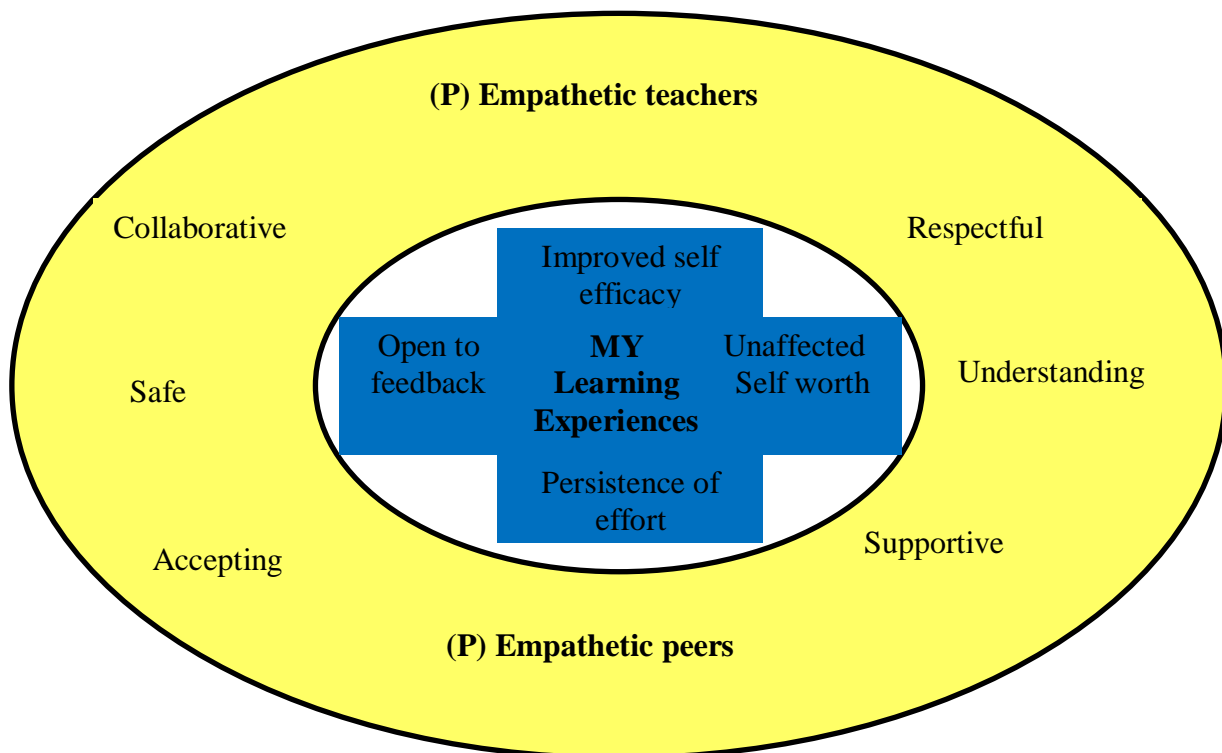


Understanding, that the classroom learning experience is embedded in a social context. In line with the Bronfenbrenner Bioecological model that posits that development is a consequence of interaction between the organism and layers of proximal to distal social processes. The model at this point proposes the last two constructs – perceived peer empathy and perceived teacher empathy. Which together create an emotionally safe environment for the individual to learn. In such an environment an individual feels valued by feeling understood and respected by the concerned teacher guiding the process of learning and by fellow competitors who accompany the individual in this journey.

This Perceived sense of belongingness, buffers academic performance against the debilitating effects of stress, anxiety thus maintaining academic tenacity. Though, much of the research efforts have focused on understanding the relationship between academic persistence (drop out) and sense of belongingness.

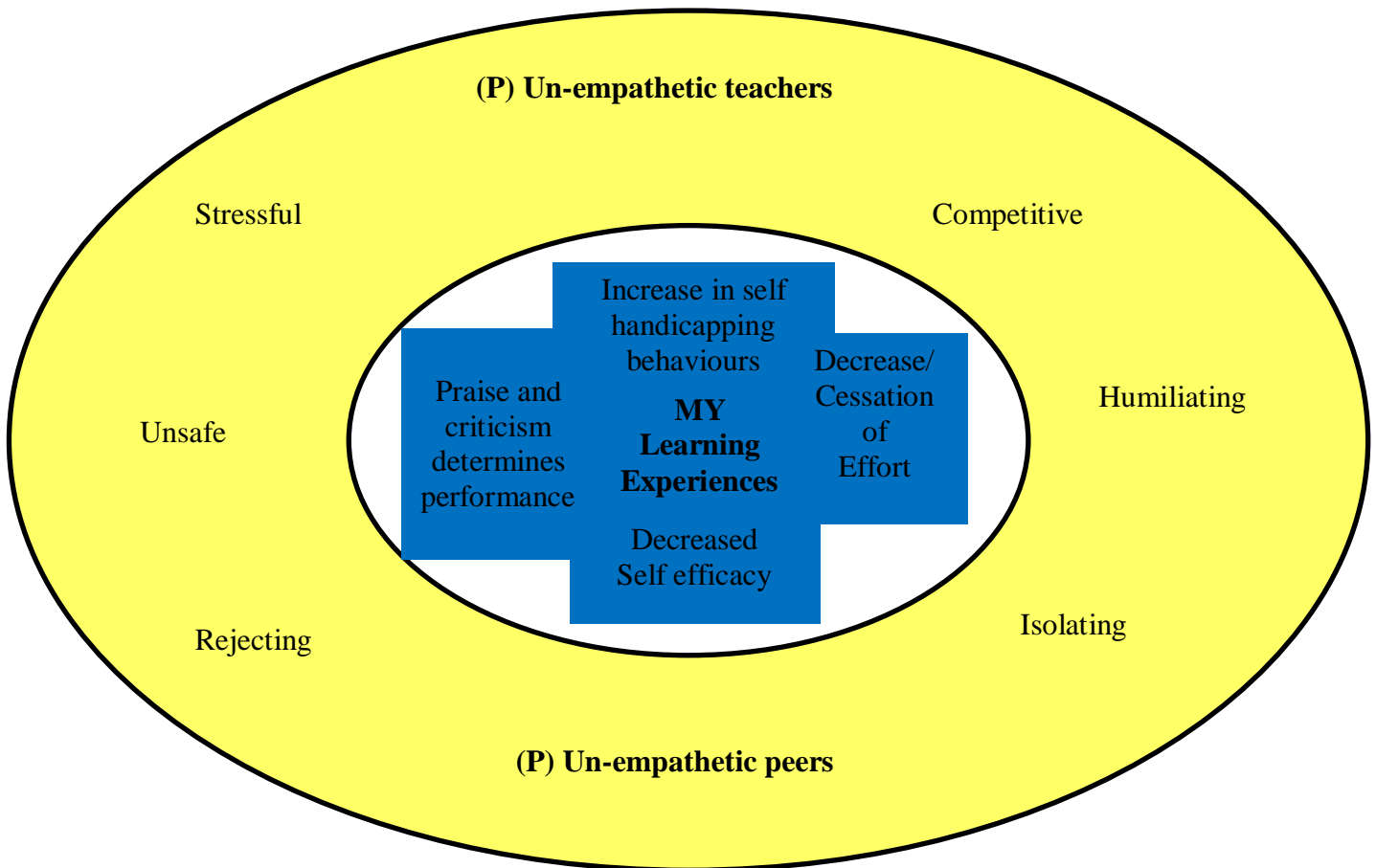
The current research attempts to understand its relationship to academic performance. Also as Sense of belongingness is considered as a an umbrella terminology for various other factors that contribute to the emotional climate of classroom learning, the current research isolates ‘perceived teacher empathy’ and ‘perceived peer empathy’ as contributors of emotional climate and proposes to study their relationship to student academic performance.

Figure2.14: Empathetic emotional climate



As the diagram above shows, a conducive emotional climate creates a collaborative and safe learning environment that enables students to sustain effort in the face of adversity. On the contrary a non-conducive emotional climate as shown below would be characterized as a stressful competitive environment with an increased incidence of self handicapping behaviours observed in students and performance is a response to praise and criticism received rather than student self efficacy.

Figure 2.15: Un-empathetic emotional climate

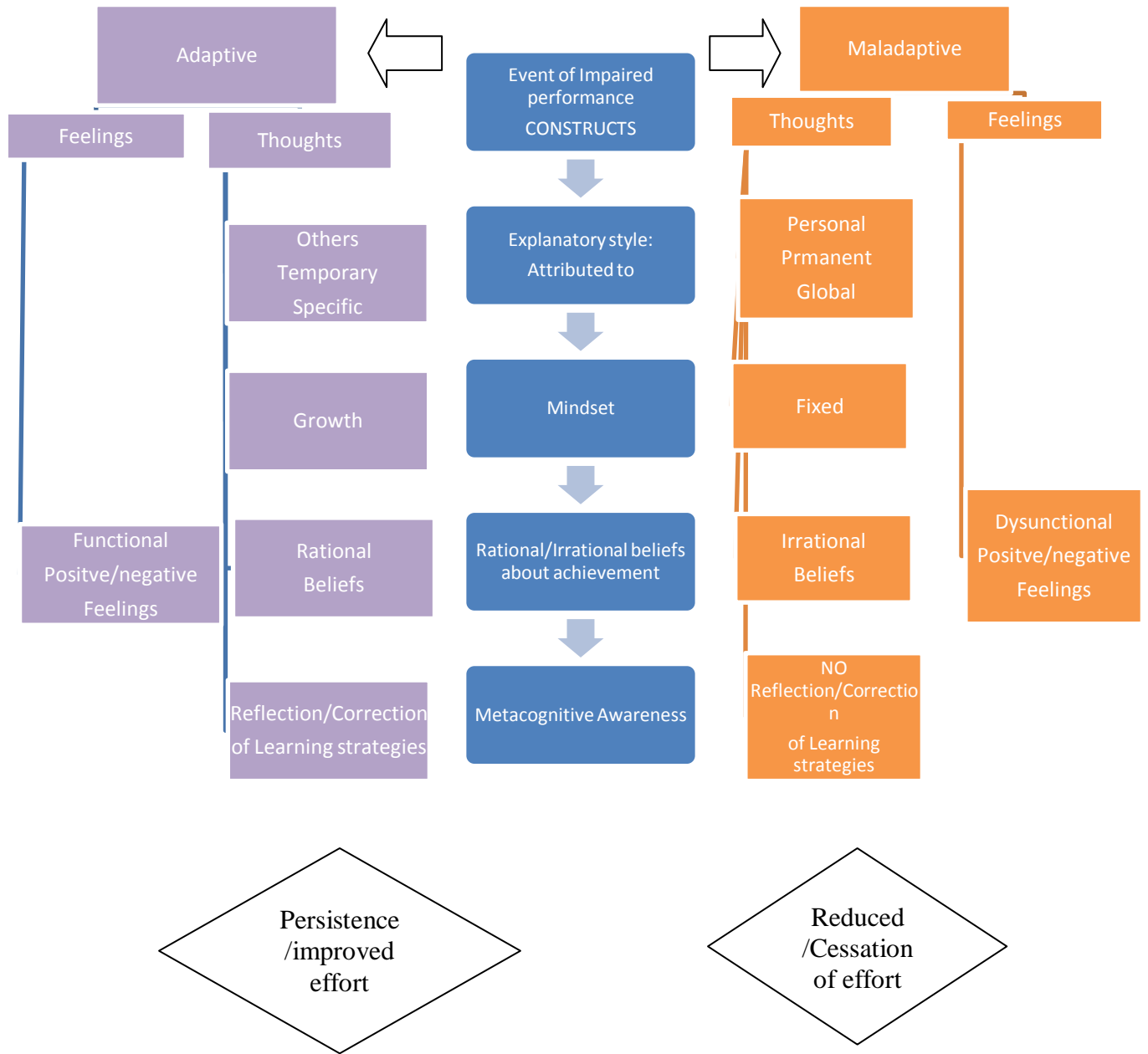


The study proposes two ways the last two variables are investigated. In phase I, the emotional climate as perceived by the students is assessed and then its influence on academic achievement is studied.

A second way as done in phase II, having empowered a select group of students on the intrapersonal constructs the change in their perception of the emotional climate could be measured before and after the skill building program, to see if the (emotional climate) perception of students change with the newer skill set of intrapersonal skills and if the change influences academic achievement.

As is mental health the above constructs also figure on a continuum, when the said constructs frame a viable pattern it leads to adaptive behaviours in the face of adversity and unviable pattern leads to maladaptive behaviours.

**Figure 2.16: Diagrammatic representation of the above model**





## **The need and scope of the current research**

The current research has attempted to filter out and isolate a handful of factors, having looked at a vast body of research existing in this research area. And proposes to, determine adaptive and maladaptive pattern of these constructs based on their relationship to academic performance. Therefore the research will attempt to weave these factors together instead of studying them in isolation. Also the scope of the research includes a skill building program that is focused on developing the select group of non-academic cognitive factors to provide evidence that the skill sets can be learnt and not necessarily be personality traits and so be taught in an educational setting.

The research focuses to study the play of the select non-academic related cognitive factors on the current batch (2012-13) of I PU science students of the PCMB (Physics, Chemistry, Mathematics and Biology) who are eligible to compete in both Medical and Engineering and allied professional courses. This does not in any way signify that other courses or streams do not offer a promising scope or career or are any less stressful or competitive.

The selection has been done to achieve uniformity with relation to circumstances are less varied as faced by the population before, during and after the culmination of this educational phase. The first years have been chosen as the academic calendar would be less effected and the concerned academic authorities could be persuaded for the experimental nature and the duration of the study (which includes a 3 hours a week skill building program, spread over 12 weeks). Also the choice allows for the understanding, in the long run, the effects of the training which though is out of the scope of the current doctoral studies can still be beneficial in our understandings of their effectiveness.