Effect of Contemplative Pedagogy on Consciousness, Mindfulness, Self-regulated Learning And Cognitive Flexibility of Secondary Level Students

A
SYNOPSIS
Submitted to
Dayalbagh Educational Institute
(Deemed University)
For the Partial Fulfillment
for the Requirements for the Degree of
DOCTOR OF PHILOSOPHY
[2012-2013]

SUPERVISOR
Dr. Sona Ahuja

RESEARCHER
Sadhna Sharma

HEAD
(Dept. of Pedagogical Sciences)

DEAN
(Dept. of Foundations of Education)

FACULTY OF EDUCATION
DAYALBAGH EDUCATIONAL INSTITUTE
(DEEMED UNIVERSITY), DAYALBAGH,
AGRA- 282110
1.0 Introduction

Most of the teaching today is motivated by the assumption that the student is an object to be filled by the new knowledge and the only purpose of education is to store the explicit knowledge. So we keep on filling the child’s mind with the content matter incessantly. But just as the best food becomes poison when over-consumed so is the learning of content matter when we forget the greater and real purpose of education. (Bai, Scott, Donald, 2009)

Students’ minds are so clogged with the content matter that we hardly give them space for insights, reflections, critical analysis and intuitions. Spaces between the logs are as important as logs themselves to ignite fire. Similarly it is both the presence and absence of the content in the minds of students which ignite the fire of deep and reflective thoughts (Brown, as cited in Brady, 2007). Contemplative pedagogy is an antidote to content based education tradition, its all about creating spaces in the minds.

Contemplation is the process of examining thinking from a deeper level of consciousness (Brady, 2007). Inviting the contemplative simply includes the natural human capacity for knowing through silence, looking inward, pondering deeply, beholding, witnessing the content of our consciousness and so forth (Hart, 2004). It is a reflective tool to build connections between students and their teachers in ways which develop a greater awareness and the ability to make decisions in a more conscious manner (Spicer, 2011). In contemplative pedagogy, Content is not provided to students in air tight packages but it offers students a new relationship with themselves, others and the world and provides insight about the interconnectedness of all things (Haynes, 2005). Contemplative education techniques, often called mindful awareness practices consists of exercises of attention, observation and reflection that aim to help children understand the way their mind works and how their thoughts and feelings affect their behavior (Jennings, 2009).

According to oxford dictionary, the word contemplation has been originated from Latin word *contemplari* which means deep reflective thought. Contemplative pedagogy borrows the techniques and practices from almost all religious traditions to emerge as an overall secular concept. contemplative pedagogy integrates yoga and meditation from various Buddhist and Hindu traditions, prayers from Christianity, Plato’s radical questioning through dialogues, metaphysical reflections of Sufi traditions, deep pondering from Jewish tradition and many more (Hart, 2004). When practiced in secular educational context, contemplative practices helps in developing awareness, refinement of perceptual and observational skills, curiosity and wonder instead of cynicism in students (Haynes, 2005). Contemplative practices are
practical, radical, and transformative, developing capacities for deep concentration and quieting the mind in the midst of the action and distraction that fills everyday life (Centre for Contemplative mind in Society).

Kahane (2009) makes an useful distinction between contemplative pedagogy and Holistic education. Holistic education only trains students to tell their usual habitual stories about themselves but what is beneath those stories self observation comes through contemplative pedagogy through self reflection.

1.1 Prevalence of Contemplative Pedagogy

Contemplative pedagogy has recently emerged and is developing in the field of American education. A significant number of institutions and educators are working in the direction of evolving and testing techniques in mainstream education which are based on age old yoga, meditation and mindfulness traditions from all over the world. Naropa University is pioneer in the field of contemplative education. It is offering contemplative education to students for more than 35 years in the form of training of soul combined with rigorous liberal arts training based on integration of eastern and Greek philosophies. The American council for learned societies in collaboration with centre for contemplative mind in society has granted 120 contemplative fellowships to professors over the last 10 years supporting them in designing courses that include contemplative practices as pedagogical strategy (Zajonc, 2006). Amherst College, Columbia University and hundreds of other institutions (as cited in Garrison institute report, (2005) are organizing conferences, summer schools, where educators discuss and exchange techniques, ideas and experiences in contemplative pedagogy. Together with some of the common practices, efforts are being made to evolve practices directly related to the course content. The Association of Contemplative Mind in Higher Education (ACMHE), an initiation of centre for contemplative mind in higher education, promotes the emergence of a broad culture of contemplation in the academy by connecting a network of leading institutions and academics committed to the recovery and development of the contemplative dimension of teaching, learning and knowing. The association serves members by stimulating scholarship and research concerning contemplative pedagogy, methodology and epistemology. Another organization in the field of contemplative pedagogy is ‘Mindfulness in Education Network’ (MiEN). People at MiEN see mindfulness as an antidote to the growing stress, conflict and confusion in educational settings as well as an invaluable gift to give students. Their mission is to support and cultivate the practice of mindfulness in
There are hundreds of other institutions functioning in USA which have been surveyed and mentioned in Garrison institute’s mapping report (2005) on ‘current status of programs using contemplative techniques in K-12 educational settings’. There are courses in contemplative pedagogy in various subjects, from theater to economics, from philosophy to cosmology, which are creating new academic pedagogy (Zajonc, 2006)

1.2 Some Common contemplative practices being used by Educators

The term Contemplative pedagogy embraces various kinds of techniques and practices ranging from poetry to pondering to meditation used in different educational context to quiet and shift the habitual character of mind and to cultivate the capacity for deepened awareness, concentration and insight (Hart, 2004). While some techniques and practices are independent and can’t be related with course content, others can be modified and merged with the content. Some of the common practices used in different institutions are mentioned as follows:

Starting the class with a moment of silence: This technique is practiced to bring students’ focus and awareness to the activities of the classroom. It helps students to make transition (Brady, 2007) from various mental states to the classroom. Brady has been practicing this for last 32 years in his classrooms. Kahane (2009) also use seven minutes of mindfulness meditation in his philosophy class. This exercise improves the quality of attention brought to a task which is more important than the time spent in doing that task Hart (2004).

Hooker & Fodor (2008) call it ‘meditation on breath’ which it is fundamental to mindfulness. It can be performed through the counting of breaths or by simply observing the breaths.

Centering or Pausing at the bell sound: It refers to bringing back attention after brief moments to centre on present moment through a bell sound. The mindfulness bell, used by Hanh (as cited in Brown, 2010) has been adapted for contemplative classroom practice. Everyone stops at the sound of a bell which is sounded after every 10-20 minutes, listen to it until it fades away and then classroom activities resume (Brady, 2007).

Free writing or Journaling: Free writing popularized by Peter Elbow in 1973 (as cited in Kahane, 2009), means writing non-stop for a fixed period of time and the only rule is that the pen keep on moving. The process approach to writing leads to contemplation (Hart, 2004). Writing in this way don’t have a conscious control and hence it cant be edited, so it provides the flow of idea and expresses beyond one’s knowledge (Kahane, 2009) and imagination.
Prompting can also be done according to Kahane. Students write whatever comes to their mind without stopping, even if their mind is blank, they can write it. Doing free writing and responding to others writing, several times a week seemed to get most students into habit of paying better attention to themselves and to life (Brady, 2007). What lies under the exercise of free writing is reflection, which is very important to facilitate learning based in philosophical and pedagogical foundations (Schein as cited in Spicer, 2011). This is an area of further study to be explored in future research. (Cameron, as cited in Spicer, 2011).

**A Wisdom walk or guided Imagery:** Students are instructed to visualize or imagine some situation or scene. Guided imagery taps the symbolic or the metaphorical aspects of contemplative mind and often results into unexpected imagery and insights (Hart, 2004). Hooker and Fodor (2008) name this kind of practice as *visualization meditation*.

**Guided meditations before each test and quiz:** Brady (2007) observed that tests and quizzes are often a source of stress, excitement, nervousness and even fear. Instructions are provided to accept those emotions, observe them in a non-judgmental way, letting them go and to recall a feeling of some mathematical accomplishment. It often results into development of a positive focus.

**Contemplating geometrical figures:** Although Wolcott (2013), says that Mathematics and the hard sciences are poorly represented in the movement of contemplative pedagogy. But some content related techniques such as contemplation of geometrical figures (Brady, 2007) can still be found. He suggests that spending time contemplating geometrical figures would at the least provide opportunity for new insights to arise. This technique is also known as *technique of beholding*.

**Teaching new topics with contemplation:** Certain topics and their solutions are dealt with some fixed approaches. However when entirely new concepts are introduced in the class, certain exercises like technique of Questioning (involving framing of questions related to that concept, discussing them in classroom and finding solutions to them) can be used (Brady, 2007). Uncertainties of new possibilities must be welcomed in the class (Hanh cited in Brady).

**Raisins exercise:** It is a very common practice in which students are instructed to chew three raisins in five minutes with full awareness of its taste and texture. Brady (2008) makes an
analogy of this exercise to solving homework problems to develop better understanding of them. Hooker and Fodor (2008) address Raisin meditation as attending to the senses.

**Lectio divinina:** (Sacred reading) or silent reading technique:
Stories, poems, quotations, images and even photographs can be given to students for silent reading (Brady, 2007; Kahane, 2009). Students just have to dwell on these without being carried away by them (Kahane, 2009)

**Cooperative learning:** Working co-operatively can lead to contemplation through ‘I learn for you’ attitude. According to Brady (2007), The ‘I learn for you’ attitude in cooperative learning makes learning effective and efficient. Also it provides an efficient means for students to go over homework and opportunities for them to become aware of different solution methods.

**Deep Listening:** It is a non critical and non-judgmental listening. Emphasizing the importance of deep and openhearted listening instead of counterargument, Brady (2007), says that practicing in this manner leads to the expansion of the spirit. Passive listening involves casual attention; active listening involves intentional focus and skills such as paraphrasing and summarizing what another has said (Hart, 2004).

**Study of ambiguity or opposites:** Comparison and contrast of elements or events which don’t initially appear related, can give rise to unexpected ways of knowing (Spicer, 2011). By placing the opposite concepts together deeper connections can be made which challenge the higher intellect.

**‘Where are you now?’**: Students are instructed to witness their thoughts, emotions and experiences through this exercise. It creates a slightly different focus and develops self awareness (Hart, 2004).

**Body Focusing:** Hart (2004) suggests that in between the class, moments can be taken out where students can be instructed to focus on their body, according to him it is a simple technique employed successfully in schools. Bubble exercise is suggested by him.

There are hundreds of other exercises which are being practiced. Recently efforts are being made to evolve some content based practices in various subjects and disciplines.
1.3 Contemplation on part of teachers; Teacher’s ‘Presence’ in the classroom
Emphasizing the importance of positive classroom environment, Kokkinos, Panayioto and Davazoglou (as cited in Spicer, 2011) argue that teachers under stress will interpret student behavior differently and Yoon (as cited in Spicer, 2011) acknowledges that students often sense teacher stress and that this can contribute to a negative culture within the classroom. So a teacher is an important factor which affects the classroom activities including teaching and learning significantly. The same holds true for mindfulness.

With the changing technologies, curriculum and hence needs of the students, It is of first and foremost significance for a teacher to be mindful in classroom and to bring contemplation classroom it becomes an unavoidable necessity. Miller and Solloway (cited in Hart 2004) put it as, “Contemplation can nourish the teacher’s own presence and in turn influence the quality of classroom experience”. Hart (2004) mentioned in his article that a teacher who explores his or her own contemplative mind is is better able to help his or her students to do the same. Wolcott (2013) recommends for anyone interested in contemplative education, starting a personal contemplative practice before implementing these on students. To study the subjective experiences of teachers regarding their presence in the classroom, Solloway (1999) conducted an action enquiry. A fully mindful teacher is fully present in the classroom and controls variables affecting teaching and learning significantly.

2.0 Emergence and justification of the Problem

It has been rightly remarked by Kegan & Lahey (as cited in Wolcott, 2013) that “True development is about transforming the operating system itself, not just increasing the fund of your knowledge... We as teachers devote our imaginations towards the files and the programs and rarely towards the human system”

- Kegan & Lahey (as cited in Wolcott, 2013)

The focus of contemplative education is the learner and his relationship with the other variables of teaching and learning. Thus it is a revolution against content based education process. We continuously ponder over inculcating discovery attitude amongst our students. But can we outline the components of academic life which may lead to discovery attitude? It’s not reading, not activity, not talking, not keeping yourself busy, not thinking, not making efforts but to simply bear in mind what it is one needs to know (Spencer & Brown as cited in Brady, 2007). It implies that knowledge, though little, must be incubated in mind for certain period of time. But what we are practicing in our schools is just opposite to it. We keep on
piling information in the minds of students, leaving no time or space for incubation leading them to rote memorization and students feel relieved to vomit it out at the examination and forgetting it for life time. But, to arrive even at the simplest truth it requires years of contemplation as Newton practiced it (Spencer & Brown, Cited in Brady, 2007). Hart (2004) also delivers the same idea through following lines:

“Studies of creative individuals from Mozart to Einstein give us clues that although analytic practices are important, often necessary, they are insufficient to explain the depth of creativity and insight. Imagination, inspiration and unsequenced cognitive activity akin to that evoked in insight oriented contemplation are commonly described from fields ranging from music to science. Contemplative knowing balances the power and precision of the analytic”.

Contemplative pedagogy is an effort to bring such contemplation in the classrooms. We, as teacher educators always teach how to prompt questioning in classrooms. But why there is a need to do it? Even Hart (2004) has raised this question that has anyone wondered How many of our students had difficulty in asking questions when they were just four to five years old? Our students are so conditioned by the culture that they constantly hesitate to ask questions and only want to ask expert questions. Contemplative pedagogy is all about bringing the curiosity and novelty of a child’s mind in the process of learning by de-conditioning the mind of its habitual character. It’s about establishing one’s relationship with work. Brady uses the phrase ‘Beginners mind’ for it. Our original mind includes everything with itself, it does not mean a closed mind but an empty and ready mind (Shunryu Suzuki, cited in Brady, 2007). Attention, which is a common focus of modern is very well addressed by contemplative pedagogy. Saltzman (2011) emphasize the need of such practices for enhancing attention:

“One of the primary ironies of modern education is that we ask students to pay attention dozen a times a day, yet we never teach them how. The practice of mindfulness teaches students how to pay attention, and this way of paying attention enhances both academic and social emotional learning”.

Contemplative pedagogy is about living and enriching the present moment by being mindful and thus trains students to regulate the attention.
According to Brady (2008), Education is primarily seen as a means to attain future success. So students want to accomplish more and more in terms of knowledge, for future success. But this focus on future leads students to multitasking, and thinking ahead of the results which in turn is negatively hampering six important factors of students life [i.e enlightenment, experiencing joy in the present, concentration, natural curiosity diligence and habits of mind. Contemplative practices such as practicing mindfulness are the solution for all these ailments. It teaches them to be in their own lives, “here & now” (Zinn, as cited in Haynes, 2005).

In contemplative pedagogy, process aspect is emphasized much than the product. “What we know or should know is the common focus of education. However how we know is just as fundamental to teaching and learning” (Hart, 2004). Contemplative pedagogy addresses ‘how’ in education rather than ‘what’. For specifically mathematics, Wolcott (2013) thinks that the more you understand how you do math, the more you will understand how you do your best maths, and the more effective and efficient you will be at doing so.

Contemplative pedagogy also addresses the problem of reception of knowledge. Brady (2008) compares today’s education process to the process of mindless eating leading to indigestion. “Just as nourishment has been squeezed out of fast food, personal meaning is been squeezed out of education. Mindful learning used in contemplative pedagogy is slow learning leading to the full digestion of learning”. In context of mathematical problem solving Brady (2005) discusses the technique of slowing “Slowing down and do the maths just to do the maths but not to get it finished in order to go on to the next thing”. He also suggests teaching students to ponder over their capabilities and wondering what gifts of understanding they have to offer to solve a problem in maths, instead of becoming anxious and giving up.

Learning has changed from a destination to a journey (Schwan & Spady cited in spicer, 2011). Contemplative pedagogy is about enjoying every moment of this journey by creating deep understanding of the subject matter. It lacks immediate results but creates deep understanding with time. O’Reilley (1998, p.7, cited in Brady), put it as “This course moves rather slowly and covers material in depth rather than breadth. Try to be patient with going back over material in silence and slow time…. I think that if we proceed in this rather contemplative manner we can get to deeper understandings.”
Contemplative pedagogy is the need of the hour. At present, we are only providing rational and sensory knowledge at our educational institutions. A third way of knowing [i.e contemplation] was prevalent across all cultures, times and disciplines (Hart, 2004). Even India from the times of ancient gurukuls to universities such as Nalanda and Taxila which were known worldwide, had a tradition of contemplation as an essential component of learning. But contemplation as a way of knowing, remains absent from today’s curriculum and pedagogy (Hart, 2004).

2.1 Research Scenario and Gaps

Researches in contemplation have shown improvement in executive function (Flook et al, 2007), attention (Napoli et. al, 2005), anxiety in children (Semple, Reid & Miller; Napoli, Krech & Holley 2005), increased sense of calm, connection to nature,(Wall, 2005), Self regulatory abilities (Flook et al., 2005), Academic achievement with increased ability to transfer learned material to new situations, increased creativity (Flaxman & Flook, n.d; Napoli, 2005). But most of these researches were conducted using a single contemplative technique [i.e mindfulness based practices]. The researcher did not came across any study which made use of comprehensive program of contemplative practices to have any empirical testing.

Many educators have suggested benefits of contemplative practices such as enhanced capacity of focusing attention (Tremmel,1993), increased sense of interconnectedness (Miller,1994), self reflection (Mayes, 1998) based on their experience with it (Solloway, 2000). But, there is a dire need for empirical evidence in the field. Heinecke and Drier (as cited in Solloway, 1999) outlined the need of a research based on holistic model of classroom practice.

Christine Burke (2009) in her review of current researches in mindfulness approaches with children and adolescents remarked that interest has spread towards using mindfulness based approaches for children and adolescents, but the research is still at its infancy. In her review she mentioned that the current research base provides support for the feasibility of mindfulness-based interventions with children and adolescents, however there is no generalized empirical evidence of the efficacy of these interventions. And she further suggested that research needs to shift away from feasibility studies towards large, well-designed studies with robust methodologies, and adopt standardized formats for interventions allowing for replication and comparison studies, to develop a firm research evidence base. In
her review of 15 Researches on adolescents and children, she stated that all studies investigated feasibility and acceptability of mindfulness based interventions with the populations investigated, and overall conclusions indicate that interventions were acceptable and well-tolerated by the participants, and no studies report any adverse effects. She remarks that current research base is limited by lack of empirical evidence of the efficacy of interventions with these younger populations. The present study is an effort in the direction of filling this gap.

2.2 Contemplation and Consciousness

Consciousness has been proved as a psychological variable which includes events that: can be reported and acted upon, with verifiable accuracy, under optimal reporting conditions and which are reported as conscious (Baars, Banks, Newman, 2003, cited in Brazdau, Mihai, 2011). Consciousness is the result of all subsystem of human beings instead of any one system. Consciousness quotient is a general level of being aware or conscious throughout the day in everyday life (Brazdau, 2011). The Consciousness quotient have been found to be the predictor of academic success in graduate students (Brazdau, Mihai, 2011)

According to Brady (2007), Deep learning occurs as a result of change in store of consciousness” but irony is that the store of consciousness remains unknown to most of the students and teachers. In words of Solloway (2000), Current mainstream models of classroom practice do not address the need for a special kind of expanded attention which embraces intuition, reason, one’s own action, and the outside world, even though the complexity of classroom practice demands it. Contemplative education may fulfill this criterion of learning and teaching from within or from the store of consciousness as mentioned by Brady. To have an empirical testing of this fact, the researcher decides to study the effect of Contemplative pedagogy on the consciousness of the students.

2.3 Contemplation & Mindfulness

Mindfulness is a strategy that is being used with increased frequency and receiving mainstream acceptance around the world as a means to enhance both students’ and teachers’ wellbeing (Black, Milam & Sussmans 2009; Greenberg & Harris, 2012; Mendelson, Greenberg, Rhoades, Dariotis, Gould & Leaf as cited in Albrecht, 2012). The concept of mindfulness has a large number of interpretations and definitions but may be simply described as a natural human capacity, which involves observing, participating and accepting each of life’s moments from a state of equilibrium. It can be practiced through meditation.
and contemplation but may also be cultivated through paying attention to one’s every day activities, such as, eating, gardening, walking, listening and school based activities such as class work (Albrecht & Cohen, 2012). According to Burke (2009), although mindfulness-based interventions have been in use for over 20 years, it has only been more recently that mindfulness has been examined as a psychological construct, with efforts to establish consensus on the operational definition, elements and processes (Bishop, Lau, Shapiro, Carlson & Anderson 2004; Shapiro, Carlson, astin, freedman 2006 as cited in Burke, 2009). Every contemplative practice in classroom ultimately aims to develop mindfulness (Miller, as cited in Solloway, 1999). To have an empirical evidence the researcher decided to study the effect of contemplative pedagogy on mindfulness.

2.4 Contemplation and Self regulated learning

Self regulated learners may be characterized by their high self motivation or proactive behavior. They approach educational tasks with diligence, confidence and resourcefulness (Zimmerman, 1990). They monitor their cognition (metacognition), set their goals, plan strategies according to their goals and evaluate them. They also regulate and control their behavior. Self-regulation (or self-regulated learning) is an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment (Pintrich, 2000, p. 453).

One major benefit of Contemplation pointed by Hart (2004) is detachment from the content of our consciousness, by avoiding being absorbed in the thoughts, feelings, and reactions which lead to acceptance and transforming of behavior. A study involving the effects of a meditation practice on African American adolescents, resulted in fewer rule infractions, a decrease in absenteeism and fewer suspensions (Barnes, Bauza & Treiber, as cited in Hart, 2004). Mindfulness provides an alternative focus by drawing attention to the present moment, thus help one to get rid of worrying, & leads to regulation and control of negative emotions (Mennin, Heimberg, Turk & Fresco 2002; Roemer & Orsillo, 2002 as cited in Hooker and Fodder, 2008).

Also Fontana and slack (cited in Hooker and Fodor, 2008) proposed that children will learn things better if they are aware of them, attending to them, and focused which may help them in both learning and sports. They also propose that mindfulness training promotes self
management and self control. BREATHE program for teenagers (Broderick as cited in Jennings, 2008), showed decrease in negative emotions, somatic symptoms like aches and pains, overtiredness and disorder of emotion regulation. They also showed increase in self acceptance, relaxation and ability to let go off distressing thoughts to control stress. Mindful education has resulted in reduction in aggressive and oppositional/dysregulated behavior and increase in attention/ concentration and significant increase in social competence. (Schonert as cited in Jennings, 2008). Burrows (2011) on the basis of a pilot study on practicing relational mindfulness suggests that becoming more aware of thoughts; feelings and bodily reactions can facilitate self regulation skills. The researcher thus in light of above researches and propositions decided to study the effect of contemplative practices on self regulation of adolescents.

2.6 Contemplation and Cognitive flexibility

Martin, Anderson and Rubin (as cited in Bilgin & Mehmet, 2009) define cognitive flexibility as the awareness of various possible options for dealing with a situation, a willingness for adaptation and flexibility in new situations, and an individual sense of self-efficacy. According to Martin and Anderson an individual must be aware of the choices and available options before adapting to a new situation. The more options an individual can think of, the more flexible he is considered. Beck (as cited in Bilgin) stated that individuals can restructure their world if they have flexible cognition and it also leads to positive thoughts (Bilgin, 2009). Martin and Anderson (as cited in Bilgin) stated that cognitively flexible individuals are typically more assertive, responsive, attentive, and perceptive. Spiro and Jehng (1990) defined cognitive flexibility as “the ability to adaptively re-assemble diverse elements of knowledge to fit the particular needs of a given understanding or problem-solving situation. According to Hart (2004), being mindful detaches us from a situation which allows us to recognize and therefore potentially interrupt usual patterns of thinking and impulsivity, freeing the mind to notice unexpected insights. Self observation and reflection help to expose and deconstruct positions of role, belief, culture and so forth to see more deeply from multiple perspectives. This allows the students the conceptual flexibility to see beyond the information given and beyond their own presuppositions (Hart 2004). Karen Spicer (2011) also suggests that through creating clear intentions and taking moments of reflective silence, thinking can become more creative, flexible and open. “Disciplines ranging from literary analysis to cognitive psychology identify the important function of gaps
in the learning and inventive process (e.g., Spolsky, 1993 as cited in Hart). It is the cognitive gaps that allow for the possibility of conceptual flexibility and multiplicity (Hart, 2004). To have an empirical testing of the fact whether contemplative pedagogical practices leads to flexible cognition or not, the researcher proposes to examine the effect of contemplative practices.

3.0 Statement of the Problem
The research problem is stated as follows: Effect of Contemplative Pedagogy on Consciousness, Mindfulness, Self Regulated Learning and Cognitive Flexibility of Secondary Level Students.

4.0 Variables of the Study:
The study involves the following variables:
Independent variable: Contemplative Pedagogy
Dependent variables: Consciousness, Mindfulness, Self-regulated Learning, Cognitive flexibility

5.0 Objectives of the Study
The study is undertaken in light of objectives as follows:
1. To develop content based contemplative pedagogical practices for the secondary level students.
2. To implement the contemplative pedagogical practices in classroom.
3. To study the effect of contemplative pedagogical practices on consciousness of students.
4. To study the effect of contemplative pedagogical practices on Mindfulness of students.
5. To study the effect of contemplative pedagogical practices on self regulated learning of students.
6. To study the effect of contemplative pedagogical practices on cognitive flexibility of students
6.0 Hypotheses of the study

Following null hypotheses are formed for the study:

1. There will be no significant difference between the post intervention consciousness scores of control and experimental group.
2. There will be no significant difference between the post intervention mindfulness scores of control and experimental group.
3. There will be no significant difference between the post intervention self-regulated learning scores of control and experimental group.
4. There will be no significant difference between the post intervention cognitive flexibility scores of control and experimental group.
5. There will be no significant difference between pre and post consciousness scores of experimental group.
6. There will be no significant difference between pre and post mindfulness scores of experimental group.
7. There will be no significant difference between pre and post self-regulated scores of experimental group.
8. There will be no significant difference between pre and post cognitive flexibility scores of experimental group.

7.0 Delimitations of the study

The study will have the following limitations:

The study will be delimited to Agra city only.
The teaching of contemplative practices will be limited to mathematics only.

8.0 Operational definition of the terms

The terms used are operationally defined as:

Contemplative pedagogy

Contemplative pedagogy is a recent innovation in the field of education in which techniques and practices from various meditative, reflective and contemplative traditions all over the world are borrowed. It emerges overall as a secular concept and is recently being practiced in a large number of American institutions. The practices used are being merged with the
mainstream education and much recently there has been an effort to evolve content based contemplative pedagogies in various subjects. Contemplative pedagogy may be operationally defined as the extension of yoga and meditational & reflective techniques to classroom teaching.

**Consciousness**

Brazdau (2009) defined the Consciousness Quotient as “the level of consciousness (or the level of being conscious) that is experienced in the morning, ½-1 hour after we are awake, after a refreshing sleep, without being exposed to any significant stimulus: coffee, TV, radio, music, talking etc.” He further defines it as the general level of being aware throughout the day. In the present study the researcher considers consciousness as the level of awareness of students regarding their own self, others and about the outside world which further includes six dimensions [i.e Physical, Emotional, Mental, Spiritual, Social-relational and self consciousness]

**Mindfulness**

Ellen Langer (1989) defined mindful behavior as an alert behavior and more than that it is the way of experiencing life fully. He gave five different ways to interact with the world. Making new categories and remaking old ones, adjusting automatic behavior, taking new perspectives, emphasizing process over outcome and tolerating uncertainty

Miller (as cited in Solloway, 2000) defines mindfulness as wholeheartedness or doing something with our full consciousness. In the present study by mindfulness, the researcher means the ability of being present in the present moment or being ‘Here & Now’.

**Self regulated learning**

Self regulated learning is a process in which learners see acquisition as a systematic and controllable process, and they accept greater responsibility for their achievement outcomes. (Borkowski, Carr, Rellinger & Pressley, in press; Zimmerman & Martinez , 1986, 1990). Self regulated learners are motivationally, metacognitively and behaviorally active participants (Zimmerman, 1986). In the present study self regulation is defined as the act of regulating one’s cognition and behavior.
Cognitive Flexibility
Cognitive flexibility in the present study is defined as an ability to consider the given information from multiple perspectives, ability of adapting to a new situation and the ability to transfer the given information to different contexts.

9.0 Method of the Study
The research will be carried out under the design as follow.

9.1 Sampling Procedure

![Diagram of Sampling Procedure]

*Figure 1: Sampling Procedure*
9.2 Research Design

The study will be carried out on the lines of following research design:
The study will be Quasi-Experimental with Pre-Test Post-Test (control and experimental group) design. Training in contemplative practices will be given to the students for 6 months.

![Figure 2: Research Design](image)

9.3 Tools

The following measures will be used to assess the constructs:

*Consciousness:*
To assess consciousness, an adaptation of Consciousness Quotient Inventory by Ovidiu Brazdau (2013) for adolescents will be used. The Consciousness Quotient Inventory assess 6 dimensions of the conscious experience using 62 items, which forms the Consciousness Quotient: physical, emotional, mental (cognitive), spiritual, social-relational and self-consciousness. The tool have more than satisfactory internal consistency, that is, Cronbach alpha = 0.92 for N=62

*Mindfulness*
To assess mindfulness, Child and Adolescents Mindfulness measure (CAMM) by Greco, Baer, Smith (2011) will be used. It is having 10 items with a satisfactory reliability (Chronbach alpha = 0.80) and also an exemplary convergent validity.
Cognitive flexibility
To measure cognitive flexibility, the cognitive flexibility scale by Bilgin & Mehmet (2009) will be used. The scale has 19 items. The scale is reported to have internal consistency of 0.92, test-retest reliability of 0.77 and split half reliability of 0.87 and a criterion validity of -0.44.

Self regulated learning
To measure self regulated learning Motivated Strategy for Learning Questionnaire (MSLQ) by Pintrich, Smith, Garcia and Keachei 1991;1993; Pintrich & De Groot ;1990 as cited in Worters, Pintrich & Karabenick) will be used. MSLQ is a seven point likert scale with a reliability of 0.83-0.88 and construct validity.

9.4 Statistical techniques
Following statistical techniques will be used in the study:

Descriptive statistics
Mean: Mean will be used as a measure of central tendency.
Standard deviation: S.D will be used as a measure of variability.

Inferential Statistics
Paired t test will be used for measuring significance of the differences between the two groups.

10.0 Significance of the Study
Contemplation in education may act as a key to solve large number of educational problems. Without requiring extra time from normal school routine both students and teachers can be benefitted from it. It will make learning enjoyable and more meaningful. Contemplative pedagogy will have two fold advantages. It will solve current academic problems on one hand and on the other hand it will teach students and teachers the art of living. By giving students training in contemplation we can lay in them foundation for contemplative and mindful life. If we are able to facilitate self regulated learning in students through contemplation, we can be sure of students taking responsibility for their own learning, with enhanced awareness about their learning process (meta-cognition). They will be able to manage their behavior, activities and emotions efficiently. This in turn will relieve parents of their anxieties and stress towards their wards. If contemplation can induce cognitive
flexibility in students we can be sure of that our students are on the path of discovery learning. We can facilitate learning via intuition and insights and adaptation to new situations if we can induce cognitive flexibility.

Until now, there is a sole monopoly of meditation in developing consciousness. However it is not feasible always to introduce meditation to schools and that too with adolescents. Contemplative practices can easily be merged with the course content and students find it relieving to practice them in middle of the teaching learning process. Enhancing consciousness will be then an easier task to accomplish, and it will be significant as consciousness has been found to predict academic achievement significantly.

The present study will open avenues in the direction of further researches in this field.
Bibliography


Brazdau, O., Mihai, C.,(2011) The Consciousness quotient; A new predictor of the students’ academic performance; *Procedia Social and Behavioral Sciences 11* (245–250); Elsevier publications


Contemplative education at Naropa university retrieved on 12/02/13 from http://www.naropa.edu/academics/contemplativeed/


Hart T., (2004) Opening the contemplative mind in the classroom, Journal of Transformative Education, 2 (1); sage publications


History and programs of Mindfulness in Education Network retrieved on 11/02/13 from http://www.mindfulexperience.org/measurement.php


History and programs of mindfulness in education network retrieved on 12/02/15 From http://www.mindfuled.org/about/


Meaning of contemplation retrieved on 15/2/13 from http://oxfordaddictionaries.com/definition/english/contemplation


Spicer k. (2011). Teaching contemplation techniques to encourage deep reflection and intuitive thinking retrieved on 11/03/13 from http://www.davincithinking.co.nz/teachers-program


