Theories and Models Relevant to Cheating-Behaviour

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Abstract
Reviewers of previous-research, for the study of academic-dishonesty, cite lack of a theoretical-framework as a serious-flaw that limits the generalizations to be reasonably-made. The concept and term of theory are essential in any-discipline, that perceives itself as scholarly or scientific, hence theory is essential in educational-research as a research-domain. Interest in theory-method relations, comes from previous-works on structure and agency in teaching-learning-interactions in higher-education. In addition, there have been criticisms of the extent of theory use and the type of theory applied in higher-education-research. This study is therefore, focused on illustrative-review of theories and models relevant to cheating-behaviour, which resulted in an array of 19 theories, 10 models and 3 supportive-approaches. This contribution seeks inspiring an interest in the academic-fraternity into using solid-theoretical-foundation for their-study on cheating-behaviour, thus promoting of educational-research of high-scientific-value. It also anticipates enhancing the knowledge-base for professional-education and its policy-making and administration, among other-areas.
Keywords: theory, model, cheating, behaviour, education, reseach.

1. Introductions

1.1. Academic dishonesty

For many-students, the college-degree is perceived to be a "passport" needed to enter the alluring middle or upper-class-lifestyle; and the pressures to succeed may lead to academically-dishonest-behaviours, when this target is put at risk (Farnesea, 2011). The presence of the phenomenon of academic-dishonesty is unquestionable in all-cultures; what differ are its scope, as well as the attitude it encounters and the penalties it results in (Blachnio & Weremko, 2011).

Murdock *et al*. (2001) reported a boost in cheating over the last-decades, alongside with diminished-trend in students' perceived-severity of dishonest-behavior. Cheating-behaviors may be considered a form of academic-dishonesty: it is a way to present others' academic-work as ones' own interfering with the learning and the evaluation-process, a fraudulent-means of achieving grades, being accompanied by the risk of detection and punishment (Jensen *et al*., 2002). In this-sense cheating is a form of deviant-behavior, which refers to the violation of shared social-norms and may be read through theories of deviance (Moeck, 2002). Moreover, cheating is a very relentless and prevalent-conduct in school at all levels; and it increases from elementary-schools into middle schools, toward university (Jensen *et al*., 2002). According to the study by Wu & Cao (2012), the proportion of university-students who had cheating experiences is up to shocking 90%.

Academic-cheating is a phenomenon present also at all-levels of education in Kenya and generally treated with considerable-leniency on the part of the faculty and administration. Additionally, it appears that although most students (92%) believe that cheating is not ethical, almost half (45%) believe it to be socially-acceptable. Further, several-authors suggest that students who cheat in college are more-likely to engage in unethical-behaviours in their-subsequent-work-life. The challenge holds especially-true for engineering-faculty whose students are future-members of a profession for whom the public holds exceedingly-high expectations of professionalism, integrity and high-moral-values (Saat, 2012).

High-rates of cheating among engineering-undergraduates have been reported (Starovoytova, 2016; Harding *et al,* 2006a; Carpenter *et al*, 2006; McCabe, 1997). In today's society where technology pervades every-aspect of our-lives, the ethical-behavior of engineers and scientists is more important than ever. This need to graduate engineers who are more-conscious of their ethical and professional-responsibilities is supported by "The Engineer of 2020 report" produced by the National Academy of Engineering (NAE), that concluded future-engineers would need to "possess a working-framework upon which high ethical-standards and a strong-sense of professionalism can be developed" (National Academy of Engineering, 2004). Another NAE report, "Emerging Technologies and Ethical Issues in Engineering", concluded that, given current-curricula and educational-practices, future-engineers will be trained to advance technologies, but will not be trained to address the "social and ethical-implications" of these-technologies (National Academy of Engineering, 2003).

1.2 Previous research

First-studies on academic-cheating were conducted in 1964 by Bill Bowers. Recent-studies on academic-dishonesty examined concepts such as the student's understanding of : (1) *what constitutes cheating* (O'Neill & Pfeiffer, 2012; Macfarlane *et al.,* 2012; and Ballantine & McCourt, 2011), (2) *the background of cheating* (pressures, academic-integration, awareness, moral-capability, gender, age, academic-performance, technology,

institutional-support, and cultural-influences) (Guo, 2011; and Canarutto *et al.,* 2010); (3) *rationalizations* (Macgregor & Steubs, 2012); and (4) *student intentions to cheat* (based upon awareness of the behaviours of peers, prior-cheating-behaviours, and ethical-sensitivity regarding cheating) (Bernardi *et al.,* 2012). Reviewers of this-literature cite lack of a theoretical-framework for the study of academic-dishonesty as a serious-flaw that limits the generalizations that can be reasonably-made.

A great-deal of large-scale-research on academic-misconduct including cheating and plagiarism-offenses has been also conducted (Kisamore *et. al*, 2007; McCabe *et. al*, 2006; and McCabe *et. al,* 2002). Few-studies, however, have been based on accepted theoretical-models of behavior. Most-academic integrity research to date has relied on demographic, situational, and personality-variables to predict and explain violations of academic-integrity.

Numerous-empirical-studies also examined a variety of factors relating to cheating, yet each included only a limited-number of factors, without a coherent-theoretical-framework to explain their interactions. Most-studies to date have tested linear-relationships between constructs rather than the construct-validity of a model using appropriate statistical-techniques (Cane *et. al.,* 2012).

Chang (1998) noted that the Theory of Planned Behavior (TPB) and its predecessor, the Theory of Reasoned Action (TRA) provide ample-foundation to investigate unethical-behavior, but that ''heretofore, the theories have rarely been applied to this-behavioral-domain''.

Research on academic misconduct, however, may finally be slowly-moving toward development and use of theoretical-model-foundations. Several-recent-studies (Passow *et al.,* 2006; Harding *et al.,* 2007; and Stone *et al.,* 2007) have begun to examine the value of Ajzen's (1985; 1991) TPB for explaining why students engage in academic-transgression. While modeling something, as unpredictable as human-behavior is, loaded with difficulties, several-researchers have attempted to create abstract-representations of student- integrity. Relevant-studies include those involving students of: *engineering* (Harding *et al.,* 2007; Yeo, 2007), *economics* (Bisping *et al.,* 2008), *marketing & management* (Kisamore *et al.,* 2007; Chapman *et al.,* 2004), *business* (Wilson, 2008), and *criminal-justice & legal-studies* (Lanier, 2006).

Although, the first-theory relevant to human-behavior was developed more than 30 years ago, use of theoretical-models as a foundation for empirical-research on cheating still remains rather-uncommon practice. The authors consider that research, guided by a strong-theoretical-foundation, is absolutely necessary to develop an understanding of the rationale underlying academic-misconduct and to establish the most-effective-means of decreasing cheating-behaviors.

1.3. Concepts of a theory and of a model
1.3.1 Theory definitions
Generally, a theory may be defined as a set of analytical-principles or statements designed to structure our observation, understanding and explanation of the world (Carpiano & Daley, 2006) and of the person-in-environment configuration, whose essential-truth can be supported by evidence obtained through the scientific-method. Theory must also explain, in a provable-way, why something happens (e.g. the learning theory explains behaviour on the basis of what organisms have learned from the environment). Theories help explain why the problem is occurring and where the most-efficient intervention should take place (Leedy &Ormrod, 2005). Theory is also defined as interrelated-sets of concepts and propositions, organized into a deductive-system to explain relationships about certain-aspects of the world (e.g., the theories discussed below). Theory allows the researcher to make links between the abstract and the concrete; the theoretical and the empirical; thought statements and observational-statements (Carpiano & Daley, 2006). Theory is a generalized-statement that asserts a connection between two or more types of phenomena, any generalized explanatory-principle; Theory is a system of interconnected-abstractions or ideas that condenses and organizes knowledge about the world; and Theory explains and predicts the relationship between variables (Wikipedia, 1). Simply speaking, theory refers to a particular-kind of explanation. Leedy &Ormrod (2005), state: "A theory is an organized-body of concepts and principles intended to explain a particular phenomenon".
1.3.2 Theory attributes
In principal, for a system of concepts and claims to be called a theory, the system has to be (i) *stable* (unchanged over a longer-cycle of time), (ii) *coherent* (the components of the system have to be linked in a comprehensive and non-contradictory-way, and (iii) *consistent* (it should not be possible to arrive at contradictory-claims by means of the types of derivation permitted in the theory).

A common *set of virtues* of a theory is: *uniqueness* (one-theory must be differentiated from another), *parsimony* (other things being equal, the fewer the assumptions the better); *C*onservatism (a current- theory cannot be replaced unless the new-theory is superior in its virtues); *G*eneralize-ability (The more- areas that a theory can be applied to make the theory a better-theory); *Fecundity* (A theory which is more fertile in generating new-models and hypotheses is better than a theory that has fewer-hypotheses); *Internal consistency* (the theory has identified all relationships and gives adequate-explanation); *Empirical riskiness*(any empirical-

test of a theory should be risky); *Refutation* (must be very possible if theory is to be considered a 'good' theory)(Tight, 2004).

Three-viewpoints about theory is (Wacker, 1998): (1) That which underpins research-design (Theory as paradigm); Theory as paradigm (Philosophical-assumptions about what constitutes social-reality (*ontology*); What we accept as valid-evidence of that-reality (*epistemology*); The means by which we investigate that context (*methodology*); and The means by which we gather evidence (*methods*) (2) That which may inform our understanding of the phenomenon under investigation (Theory as a 'lens'); Existing theory(s) which seek to explain how aspects of social-reality work (models). E.g. Models of learning Behaviourist (by Skinner); and Constructivist (by Piaget), and (3) That which may emerge from study (Theory as new-knowledge); Adaptation, revision or confirmation of existing-theory; Generation of new-theory; Relates to conceptual-framework; and constitutes conceptual-framework.

Regarding on the most-important virtues of a theory, abstraction level (means it is independent of time and space. It achieves this independence by including more relationships); it is usually classified into three-levels: high, middle, and low. *High abstraction* level theories, general or grand-theories, have an almost-unlimited-scope; *middle abstraction* level theories explain limited-sets of phenomena, which serve as the raw-materials for the construction of more-general-theories; and *lower level* theories called empirical-generalizations of very-limited-scope, serve as simple-relationship-identifications (Neuman, 1997).

Selected-characteristics of 'theory: Theory guides research and organizes its ideas (The analogy of bricks lying around haphazardly in the brickyard: 'facts' of different shapes and sizes have no meaning unless they are drawn together in a theoretical or conceptual-framework); Theory becomes stronger as more-supporting evidence is gathered; and it provides a context for predictions; Theory has the capacity to generate new-research; Theory is empirically-relevant and always-tentative.

Theory levels: (1) *Micro-level* theory seeks to explain behavior at the level of the individual or family-environment (e.g. psychology, frustration, aggression hypothesis etc); (2) *Meso-level* theory seeks to explain the interactions of micro-level organizations (e.g. social-institutions, communities etc); and (3) *Macro-level* theory seeks to explain behavior at the level of large-groups of people (e.g. ethnicity, class, gender etc).

Generally, academics point to a theory as being made up of four-components: (1) Definitions of terms or variables, (2) a domain, where the theory applies, (3) a set of relationships of variables, and (4) Specific-predictions and factual-claims (Hunt, 1991).

Following McMillan & Schumacher (2000), a theory can develop scientific-knowledge fitting with the following criteria: (1) provide simple-explanation about the observed-relations regarding their-relation to a phenomenon; (2) be consistent with an already-founded-body of knowledge and the observed-relations; (3) provide a device for verification and revision; and (4) stimulate further-research in areas in need of investigation.

Theory and research are interrelated in the following-ways (Tight, 2004) : (1) Theory frames what we look at, how we think and look at it, (2) It provides basic-concepts and directs to the important-questions, (3) It suggests ways to make sense of research-data, (4) Theory enables to connect a single-study to the immense-base of knowledge to which other-researchers contribute, (5) Theory increases a researcher's awareness of interconnections and of the broader-significance of data, (7) Theories are, by their-nature, abstract and provide a selective and one-sided account of the many-sided concrete-social-world, (8) Theory allows the researcher to make links between the abstract and the concrete, the theoretical and the empirical, thought statements and observational-statements etc, (9) There is a two-way relationship between theory and research. Social-theory informs our understanding of issues, which, in turn, assists us in making research decisions and making sense of the world, and (10) Theory is not fixed; it is provisional, open to revision and grows into more accurate and comprehensive-explanations about the make-up and operation of the social-world (Wacker, 1998).

Theory makes the most-significant-progress by interacting with research-findings (empirical-data). In adopting a theory-based-approach to research, the researcher must adopt the following-assumptions: (1)Research-problems must fit within a larger, logically-consistent conceptual-framework which incorporates research done to date; (2) Variables useful in the explanation and prediction of phenomena become the 'significant' facts; (3) To work towards objectivity, empirical-testing and replication by others is essential; and (4) Research-findings must be situated within, the theoretical-framework in order to identify further-research which can continue the process of theory confirmation (Haggis, 2009).

Deductive theory

In a deductive-approach, researchers use theory to guide the design of a study and the interpretation of results. As researchers continue to conduct empirical-research in testing a theory, they develop confidence that some-parts of it are true. Researchers may modify some-propositions of a theory or reject them, if several well-conducted-studies have negative-findings. A theory's core-propositions and central-doctrine are more-difficult to test and are refuted less-often. In a slow-process, researchers may decide to abandon or change a theory as the evidence against it mounts over time and cannot be logically-reconciled.

Inductive theory

Inductive-theorizing begins with a few-assumptions and broad-orienting-concepts. Theory develops from the ground up as the researchers gather and analyze the data. Theory emerges slowly, concept by concept, and proposition by proposition, in a specific-area. Over time, the concepts and empirical-generalizations emerge and mature. Soon, relationships become visible and researchers merge knowledge from different-studies into more-abstract-theory. Empirical-generalizations posit the most-basic-relationship between concepts: e.g. "most-people in Kenya drive Japanese-cars".

Analytical-formal-sciences use deductive-methods to arrive at theories, while empirical-sciences use induction methods to arrive at theories. Table 1 shows specific research sub-category, refutation-methods, and importance to operations management theory-building.

Table 1: Specific research sub-categories (Sunday, 2008).

	Analytical			Empirical		
	Conceptual	Mathematical	Statistical	Experimental design	Statistical sampling	Case studies
Types of research included	Futures research scenarios, introspective reflection, hermeneutics, conceptual modeling	Reason/logical theorem proving, normative analytical modeling, descriptive analytical modeling, proto-typing, physical modeling, laboratory experiments, mathematical simulation	Mathematical statistical modeling	Empirical experimental design, descriptive analytical modeling	Action research structured and unstructured research, surveying, historical analysis, expert panels	Field studies, case studies
Refutation methods	Empirical data from empirical methods	Empirical data from empirical methods	Empirical data from empirical methods	Analytical/logical inconsistency	Analytical/logical inconsistency	Analytical/logical inconsistency
Importance to operations management theory-building	Develops new logical relationships for conceptual models of theory	Explores the mathematical conditions underlying the relationships used in theory-building	Integrates the other five methods into a single theory for empirical investigation	Tests and verifies *causal* relationships between variables	Tests the theory by investigating statistical relationships to verify their existence in larger populations	Tests and develops complex relationships between variables to suggest new theory

The theory provides a heuristic-tool for formulating models that can be tested-empirically, and, as such, no single study or experiment can either prove or falsify it (Nurmi, 2008).

1.3.3. Model

Model is a blueprint for action. It describes what happens in practice in a general-way. Perspective is a way of perceiving the world flows from a value-position; it will influence choice of theory and model. A model typically involves a deliberate-simplification of a phenomenon or a specific-aspect of a phenomenon. Model is a system of postulates, data, and inferences presented as a mathematical-description of an entity or state of affairs; Models need not be completely-accurate-representations of reality to have value (Cairney, 2012; Carpiano &Daley, 2006). Models are closely related to theory and the difference between a theory and a model is not always clear. Models can be described as theories with a more-narrowly-defined-scope of explanation; a model is descriptive, whereas a theory is explanatory as well as descriptive (Carpiano &Daley, 2006). A prevalent-perception of theory and model is that theory is a broad-conceptual-approach, while models, typically in mathematical (including graphical) form, are applications of a theory to particular settings. A number of economists also distinguish between two-types of models: those that involve abstract-theorizing, largely devoid of empirical-referents and empirical-implication, and those that attempt to connect theory and data (Goldfarb & Ratner, 2008).

1.2.Research purpose

Student cheating is multifaceted-phenomena with ever-increasing diverse-factors contributing to the problem, thus making it intricate to manage. There is a need to address the problem and the management of student-cheating with a fresh-outlook and a comprehensive-organizational-lens, where strong-theory should enlighten both explanation and planning for interventions.

Although a great-attention was paid to identify individual and contextual-factors that enhance students' likelihood to adopt cheating-behaviors, there is still the need of a theoretical-framework promoting the comprehension of the relation among those-factors, as well as the inclusion of arbitration-variables, that may play a key-function in explaining the dynamics of the whole-process leading to cheating-behaviors.

High-rates of self-reported cheating among engineering-undergraduates already reflected on (Carpenter *et al.,* 2006; McCabe, 1997), cheating represents a behavior that is familiar to most, if not all, undergraduates. The decision of whether or not to cheat is an ethical-one that requires students to consider a behavior (i.e. cheating) they know to be in violation of established-institutional-policies and codes, and, possibly, social-norms. In addition, cheating in university among engineering-students has been correlated with unethical-behaviors in engineering-professional-practice (Harding *et al.,* 2006b; Carpenter *et al.,* 2006; Harding *et al.,* 2004a; Harding *et al.,* 2004b; Harding *et al.,* 2003a; Harding *et al.,* 2003b). In addition, the concepts of engineering-ethics and ethical decision-making are rarely discussed within the context of students' everyday-lives. Instead, most-engineering-ethics experiences focus either on prescriptive-codes of conduct or engineering-disasters, neither of which have a great-deal of relevance to most engineering-undergraduates, particularly within the context of cheating. In order to develop more-energetic interventions that can significantly improve engineering students' ethical-development, educators need a theoretical-framework for understanding the underlying psychological-mechanisms involved in students' ethical decision-making and behavior.

There have been criticisms of the extent of theory use (Tight, 2004; 2007), and the type of theory used (Haggis 2003, 2009; Malcolm& Zukas, 2001), in higher-education-research. For example, according to Ashwin's study (2009), where he examined use of theory in: Conceptualization of research-object; Approach to data-analysis; and Discussion of research-outcomes in selected 220 articles (dealing with empirical-data), published in 2008 in the different-scientific-refereed-journals (Higher Education; Higher Education Research and Evaluation; Journal of Higher Education (US); Research in Higher Education; Review of Higher Education (US); Studies in Higher Education; and Teaching in Higher Education) where 34% of the sample was from USA, and the remained-fraction of the sample represented the rest of the world. The results of the study are summarized as follows; *Relation of theory and research object:* The majority (77%) of articles had no explicit position from which to conceptualize the research-object; Of the 220 articles, in: 12% no account of data-analysis was given; 9% the account of data-analysis was unclear (e.g. thematic-analysis); 53% the data-analysis was based on conceptualization of research-object; and 27% the data-analysis was separate from conceptualization of research-object. *Relation of theory and research:* 29% had no discussion of outcomes in terms of the initial-theory; 53% used the initial-theory to explore meaning of the research-outcomes; 18% used the research-outcomes to support develop/challenge the theory. *Overall paths observed:* Closed circles (51%) - the conceptualization of the research-object is used to analyze and explain the data; Incomplete circles (16%) - the conceptualization of the research object becomes real; Separate-conceptualization of research-object and data-analysis (14%) - the analyzed data has a chance to develop theory; and theory used to explain data (3%) - no initial-conceptualization of research-object. This analysis suggests a lack of reflexivity in the higher-education research-process, as researchers fail to make explicit their-positions in relation to their-research-objects and how this relates to their use of empirical-data.

The notion and term of theory are essential in any-discipline that perceives itself as scholarly or scientific, hence theory is essential in educational-research, as a research-domain (UTDANNING2020, 2011). Interest in theory-method relations, comes from previous work on structure and agency in teaching-learning interactions in higher-education (Ashwin, 2008; 2009).

Given the potentially-harmful effects of academic-dishonesty jointly with its inherent-complexity and the system in which it is situated, it is imperative that researchers investigate theories from a broad-range of disciplines. This research, is therefore, focuses on comprehensive-review of theories and models relevant to such human-behavior as cheating, in general, and in engineering-education, in particular. This-paper seeks promoting of educational-research of high-scientific-value and to enhance the knowledge-base for professional-education, policy-making, public-administration, and qualified-practice.

2. Materials and methods

The foremost-instrument used in this study was the document-analysis. Robson (2002) defines document-analysis as a social-research-method and is an important-research-tool in its own-right. As such critically-selected central-literature describing the most-prevalent-theories and models relevant to cheating-behavior were considered. An appealing chapter in the new-book by DiPietro "To Improve the Academy" discusses a variety of theoretical-frameworks used to explain academic-dishonesty. He lays out five such theories, and then places student-behavior in their-contexts. These-theories include deterrence theory, rational choice theory, neutralization theory, planned behavior theory and situational ethics. From the authors' point of view, the five-theories are not providing a complete spectrum-potential to facilitate informed-explanation of cheating-behavior; consequently, in this paper several-more theories, in addition to ones identified by DiPietro, as well as some-relevant-models, are incorporated.

The document-analysis was enhanced with authors' personal-views and thoughts on the subject; as such the opinions expressed here should be evaluated on their-logical-appeal and internal-consistency. This-account is not intended to survey, in an articulate-way, every-single-one of the different-specific-theories applied in the

area of academic-misconduct-research. Rather, it is meant to offer some-considerations regarding the role of theory, and to provide a sufficient-display of available and potentially-useful-theories and models within this-field of research.

3. Review: Theories and Models
The review recorded-below does not claim to be a fully-comprehensive-account of every-instance related to explaining the theories and models relevant to cheating-behaviour, but it does give a fairly-good-picture of the order of magnitude and diversity, and probably include the most-significant ones identified for which information was available at the time this-study was carried out; therefore the following-review is projected to be illustrative, rather than exhaustive.

3.1. Theories
Major-theories used in social-work-study and practice are: Systems Theory, Psycho-dynamic; Social Learning; and Conflict Developmental Theories, including theories of moral reasoning (by Kohlberg, and by Gilligan); Theories of cognition (by Piaget); Trans-personal theories of human development (trans-personal means beyond or through the persona or mask. Going beyond identity rooted in the individual-body or ego to include spiritual-experience or higher-levels of consciousness.); and Stage-theories, e.g. by Erikson, among others.

(1) *Systems theories:* Those concepts that emphasize reciprocal-relationships between the elements which constitute a whole. These-concepts also emphasize the relationships among individuals, groups, organizations, or communities and mutually influencing factors in the environment. Systems-theories focus on the interrelationships of elements in nature, encompassing physics, chemistry, biology, and social relationships (general-systems-theory, ecological-perspective, life-model, and ecosystems perspective).

(2) *Psycho-dynamic Theory:* is concerned with how internal processes such as needs, drives, and emotions motivate human-behaviour; Emotions have a central-place in human-behaviour; Unconscious, as well as conscious mental-activity serves as the motivating-force in human-behaviour; Early-childhood experiences are central in the patterning of an individual's emotions, and therefore, central to problems of living throughout life; Individuals may become overwhelmed by internal and/or external-demands; Individuals frequently use ego-defence-mechanisms to avoid becoming overwhelmed by internal and/or external-demands;

(3) *Social learning theory* suggests that human behaviour is learned as individuals interact with their environment; Problem-behaviour is maintained by positive or negative-reinforcement; Cognitive- behavioural remedy looks at what role thoughts play in maintaining the problem. Emphasis is on changing dysfunctional-thoughts which influence behaviour; and Methods which stem from this theory are the gradual shaping of new-behaviour through positive and negative-reinforcement, modelling, stress management: bio-feedback, relaxation-techniques, cognitive-restructuring, imagery and systematic desensitization).

(4) *Conflict Theory* (This theory draws attention to conflict, dominance, and oppression in social-life; Groups and individuals try to advance their-own-interests over the interests of others; Power is unequally divided, and some-social-groups dominate others; Social-order is based on the manipulation and control of non-dominant groups by dominant-groups; Lack of open-conflict is a sign of exploitation; and Social-change is driven by conflict, with periods of change interrupting long-periods of stability).

Developmental Theories focus on how behaviour changes and stays the same across the life-cycle. Stage theories are usually characterized by the following: Human development occurs in clearly defined stages; Each-stage of life is qualitatively-different from all-other-stages; Stages of development are sequential, with each-stage building on earlier-stages; Stages of development are universal; All environments provide the support necessary for development.

(5) *Kohlberg's Theory of Moral Development* (Wikipedia, 2).
Kohlberg's stages of moral development are:

(a) *Pre-conventional* (individuals obey because authority-figures tell them to obey. These-people judge morality strictly on the basis of consequences (fear of being punished for bad actions, reward for good-actions). Stage/characteristics: (1) Punishment & Obedience (Actions are evaluated in terms of possible-punishment, not goodness or badness; obedience to power is emphasized. One behave in a way that avoids punishment. Right and wrong is determined by what is punished. Children obey because adults tell them to obey. People base their moral-decisions on the fear of punishment. Examples: "I won't cheat because I will get caught"; "I won't speed because I will get a ticket", and (2) Personal Usefulness (Moral-thinking is based on rewards and self-interest. Children obey when it is in their-best-interest to obey. What is right is what feels good and what is rewarding. Concern for the needs of others is largely a matter of "You scratch my back, I will scratch yours," not out of loyalty, gratitude or justice. Right and wrong is determined by what is rewarded. Examples: "I will cheat because I will get a better score on the exam; I will tell mom you lied because it makes me look better".

(b) *Conventional* (These-individuals are most-concerned about the opinions of their-peers. They want to please and help others while developing their own internal idea of what it means to be a good-person. Stage

characteristics: (3) Conforming to the will of the group (Good-behavior is that which pleases others in the immediate group or which brings approval. The person values trust, caring and loyalty to others as the basis of moral-judgments. Children often adopt their parent's moral-standards at this-stage, seeking to being thought of as a "good girl" or "good boy" in front of those who are close to you. Examples: "I will not cheat on the test because my parents will be ashamed of me"; "I will steal because it will make me look cool in front of my friends", and (4) Law & Order (Moral-judgments are based on understanding and the social-order, law, justice and duty. In this-stage, the emphasis is on upholding law, order and authority, doing one's duty, and following social-rules. One is obligated to follow society's rules. Examples: "I will not speed because it is against the law". If everyone speeds, then our laws are meaningless; and, "One must not shoplift because it is illegal".

(c) *Post-conventional* (Morality is judged in terms of abstract-principles and not by existing-rules that govern society. Moral and ethical-choices rise above the laws of society, and individuals look within themselves for the answers rather than basing moral-decisions on external-sources of authority. Many-people never enter into this level of moral-development). Stage/characteristics: Social Contract (The person understands that values and laws are relative and that standards can vary from one-person to another. The person recognizes that laws are important for society, but knows that laws can be changed. The person believes that some-values, such as freedom, are more important than the law. Support of laws and rules is based on rational-analysis and mutual-agreement, rules are recognized as open to question but are upheld for the good of the community and in the name of democratic-values. Examples: "One should not steal because they would feel bad if someone took something from them"; "One drove on a red-light because it was 12 midnight, no one was around, and there was an emergency at home"), and (6) Personal Conscience (The person has developed moral-judgments that are based on universal-human-rights. When faced with a dilemma between law and conscience, a personal, individual-conscience is followed. Behavior is directed by self-chosen ethical-principles that tend to be general, comprehensive, or universal; high-value is placed on justice, dignity and equality. Examples: "Lying to the Nazis about the Jews in the basement is all right if it is going to save innocent lives"; or "we need to provide financial-assistance to the-poor because they have no resources to assist themselves").

(6) *Theories of cognition*

Piaget's theory of cognitive development is a comprehensive-theory about the nature and development of human-intelligence. Piaget believed that one's childhood plays a vital and active-role in a person's development. Piaget's idea is primarily known as a developmental-stage-theory. The theory deals with the nature of knowledge itself and how humans gradually come to acquire, construct, and use it (Torres & Ash, 2007). To Piaget, cognitive development was a progressive-reorganization of mental-processes resulting from biological-maturation and environmental-experience. He believed that children construct an understanding of the world around them, experience discrepancies between what they already know and what they discover in their environment, and then adjust their ideas accordingly (McLeod, 2012). Moreover, Piaget claimed that cognitive-development is at the center of the human-organism, and language is contingent on knowledge and understanding acquired through cognitive-development (Baldwin, 2005). Piaget's earlier-work received the greatest-attention. Many-parents have been encouraged to provide a rich, supportive-environment for their child's natural-predisposition to grow and learn. Child-centered classrooms and "open education" are direct-applications of Piaget's views. Despite its huge success, Piaget's theory has some limitations that Piaget recognized himself: for example, the theory supports sharp-stages rather than continuous-development (*decalage*) (Singer-Freeman, 2006).

(7) *Trans-personal theories of human-development* (Transpersonal – means beyond or through the persona or mask. Going beyond identity rooted in the individual-body or ego to include spiritual-experience or higher-levels of consciousness).

(8) *Stage theories* or Life-stages, for example Eriksson's Stages of psychosocial development: Infancy– Trust vs. mistrust; early childhood – Autonomy vs. Shame and doubt; Play age – Initiative vs. guilt; School age – Industry vs. Inferiority; Adolescence – Identity vs. Identity-diffusion; Young adulthood – Intimacy vs. isolation; Adulthood – Generativity vs. self-absorption; Mature age – Integrity vs. Disgust and despair.

(9) *Self-presentation theory*. (Leary, 1995), according to which man cares about making a good-impression on others; consequently, it may be assumed that a person asked for loyalty will behave loyally in order to make a good-impression – that is, to be judged as a loyal-person. It is therefore assumed that: A request not to cheat results in fewer-people in the group cheating. Based on social learning theory, according to which imitation is connected with the adoption of other people's behaviour, it is believed that this happens as an automatic-process. It may be assumed that the presence of another-cheating-person will evoke similar-behaviour among the individuals writing a test and that they will cheat more-often than they do when writing alone.

Behavioural change theories are the attempts to explain why behaviours change. These theories cite environmental, personal, and behavioural-characteristics as the major-factors in behavioural-determination. Each behavioural-change-theory or model focuses on different-factors in attempting to explain behavioural-change. Of the many that exist, the most-prevalent are the learning theories, social cognitive theory, theories of reasoned action and planned behaviour, and trans-theoretical-model. Self-efficacy is a common-element to several of the

theories.

    Self-efficacy is an individual's notion of their own-ability to execute a difficult or tricky-tasks, such as, for example, facing an exam. The individual's prior-success in the task or in related-tasks, the individual's physiological-state, and outside-sources of persuasion are the influential-factors. Self-efficacy is considered to be predictive of the amount of effort an individual will use in initiating and maintaining a behavioral-change, so although self-efficacy is not essentially a behavioral-change theory; it is an important-element of many of the theories, including the theory of planned behavior (Van der Linden, 2013).

    (10) *Learning theories* and behavior- analytic-theories of change (Van der Linden, 2013).
From behaviorists such as F. Skinner come the learning-theories, which affirm that complex-behavior is learned gradually through the modification of simpler-behaviors. Imitation and reinforcement play important-roles in these- theories, which state that individuals learn by duplicating behaviors they observe in others, and, that rewards are essential to ensuring the repetition of desirable-behavior. As each simple-behavior is established through imitation and subsequent-reinforcement, the complex behavior develops.

Social learning and social cognitive theory
According to the social-learning-theory, which is also known as the social cognitive-theory, behavioral-change is determined by environmental, personal, and behavioral-elements. Each factor affects each of the others. For example, in analogy with the principles of self-efficacy, an individual's thoughts affect their-behavior and an individual's characteristics elicit certain-responses from the social-environment. Likewise, an individual's environment affects the development of personal-characteristics as well as the person's behavior, and an individual's behavior may change their-environment as well as the way the individual thinks or feels. Social learning-theory focuses on the mutual-interactions between these-factors, which are hypothesized to determine behavioral-change.

    (11) *Theory of reasoned-action*
Theory of reasoned action, also known as Rational choice theory, choice theory or rational action theory (see Figure 1), is a framework for understanding, and often formally modeling social and economic-behavior (Blume& Easley, 2008). The theory of reasoned action (Ajzen & Fishbein, 1980) was first introduced in 1967 by Fishbein in an effort to understand the relationship between beliefs, attitudes, intentions and behavior.

    The theory of reasoned-action assumes that individuals consider a behavior's consequences before performing the particular-behavior. As a result, intent is an important-factor in determining behavior and behavioral-change. According to Ajzen, I., intentions develop from an individual's perception of a behavior (as positive or negative) together with the individual's idea of the way their-society perceives the same-behavior. Thus, personal-attitude and social-pressure shape intention, which is essential to performance of a behavior and consequently behavioral-change. The basic premise of rational choice theory is that aggregate-social behavior results from the behavior of individual-actors, each of whom is making their individual-decisions. The theory therefore focuses on the determinants of the individual-choices (*methodological-individualism*). Here, this theory treats dishonest-actions as the result of decisions that one makes as a rational-agent; that is, one weighs pros and cons of an action, and based on how one assesses the alternatives, one makes the choice. It can be considered as a kind of cost-benefit analysis: is the effort necessary to cheat worth the cost of getting caught and being punished? The subjective-norm of a person is determined by whether important-referents (that is, people who are important to the person) approve or disapprove of the performance of a behavior (*that is, normative-beliefs*), weighted by the person's motivation to comply with those-referents (Montano & Kasprzyk, 2002).

    Social-behavior is learned by conditioning, primarily instrumental or operant, in which behavior is shaped by the stimuli that follow, or are consequences of the behavior, and by imitation or modeling of others' behavior. Whether deviant or conforming-behavior persists depends on the past and present-rewards and punishments, and the rewards and punishments attached to alternative behavior differential reinforcement as well as religious-beliefs and commitments, social-background, upbringing, parental-crime, previous learning, and the influence of friends and other-groups (Pearson & Weiner, 1985).

    The act of cheating works on many-levels. On the individual-level the student can decide on his own strategy in order to graduate. He/she can cheat or not, depending on the circumstances. Rational choice theory then assumes that an individual has preferences among the available-choice-alternatives that allow them to state which option they prefer. These-preferences are assumed to be *complete* (the person can always say which of two-alternatives they preferred to the other) and *transitive* (if option A is preferred over option B, and option B is preferred over option C, then A is preferred over C). The rational-agent is assumed to take account of available-information, probabilities of events, and potential-costs and benefits in determining preferences, and to act consistently in choosing the self-determined best-choice of action.

    The theory makes two technical assumptions about individuals' preferences over alternatives (Milgrom& Levin, 2015): (1) *Completeness* – for any, two- alternatives a_i and a_j in the set, either a_i is preferred to a_j, or a_j is preferred to a_i, or the individual is indifferent between a_i and a_j. In other words, *all* pairs of alternatives can be compared with each-other and (2) *Transitivity* – if alternative a_1 is preferred to a_2, and

alternative a_2 is preferred to a_3, then a_1 is preferred to a_3.

Together these two-assumptions imply that given a set of exhaustive and exclusive-actions to choose from, an individual can *rank* the elements of this-set in terms of his-preferences in an internally-consistent-way (the ranking constitutes a partial-ordering), and the set has at least one-maximal-element.
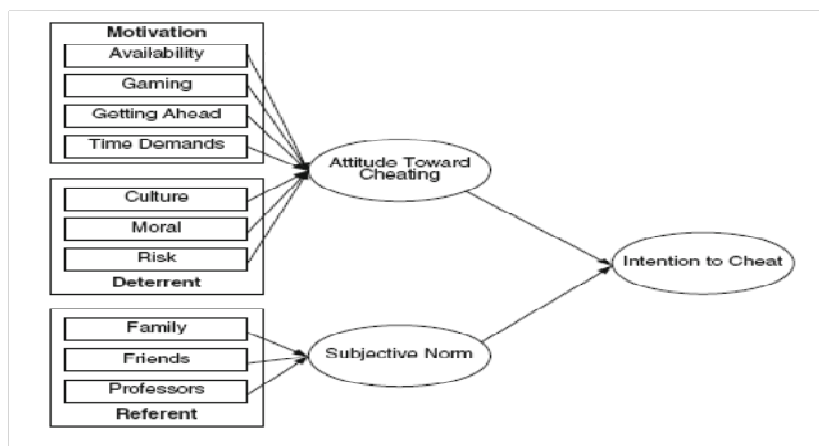

Figure 1: Theory of reasoned action framework (Blume& Easley, 2008).

Despite the empirical-shortcomings of rational choice theory, the flexibility and tractability of rational-choice models (and the lack of equally powerful-alternatives) lead to them still being widely used (Milgrom& Levin, 2015). According to Montano& Kasprzyk (2002), the theory of reasoned action is successful in explaining behavior when volitional-control is high. In conditions where volitional-control is low, the theory of planned behavior of Ajzen (1991) is more appropriate to explaining such-behavior.

(12) *Theory of Planned Behavior (TPB)* is one of the most-widely cited and applied behavior-theories. It is one of a closely inter-related-family of theories which adopt a cognitive-approach to explaining behavior which centers on individuals' attitudes and beliefs. The TPB (Ajzen 1985, 1991) evolved from the theory of reasoned action (Fishbein &Ajzen, 1975) which posited "intention to act" as the best-predictor of behavior. In addition to attitudes and subjective-norms (which make the theory of reasoned action), TPB adds the concept of *perceived behavioral control*, which originates from self-efficacy theory (SET), proposed by Bandura in 1977, which came from social cognitive theory. The premise of the TPB is that individuals make rational-decisions to engage in specific-behaviors based on their-own beliefs about the behaviors and their-expectation of a positive-outcome after having engaged in the behaviors. TPB hypothesize that cheating happens because of the *opportunity*, as well as the intention to cheat (For instance, a student may have a favorable-attitude toward cheating and may have friends who also engage in cheating, but the vigilant-level of examination-monitoring in a specific-class may make cheating very-difficult or impossible).

According to Ajzen (2002), an intention to perform a behavior is determined by three-components: (1) *attitude toward a behavior* (beliefs about a specific-behavior and its-consequences); (2) *subjective-norm* (normative-expectations of other-people who are important to the actor regarding the behavior), and (3) perceived-behavioral-control (the perceived-difficulty or ease of performing the behavior). Figure 2 shows the concept of TPB.

So far, TPB has more than 1200 research bibliographies in academic-databases such as Communication & Mass Media Complete, Academic Search Premier, PsycARTICLES, Business Source Premier, PsycINFO, and PsycCRITIQUES among others (Sniehotta, 2009). The theory of planned behaviour model is thus a very-powerful and predictive-model for explaining human-behaviour. Existing-literature also provides several-reviews of the TPB (Webb *et al.,* 2010; Nisbet& Gick, 2008; Munro *et al.,* 2007; Hardeman *et al.,* 2002; Rutter & Quine, 2002; Armitage &Conner 2001). The TPB is not considered useful or effective in relation to planning and designing the type of intervention that will result in behaviour-change (Webb *et al.,* 2010; Taylor *et al.,* 2007; Hardeman *et al.,* 2002). Using the theory to explain and predict likely-behaviour may, however, be a useful-method for identifying particular-influences on behaviour that could be targeted for change.
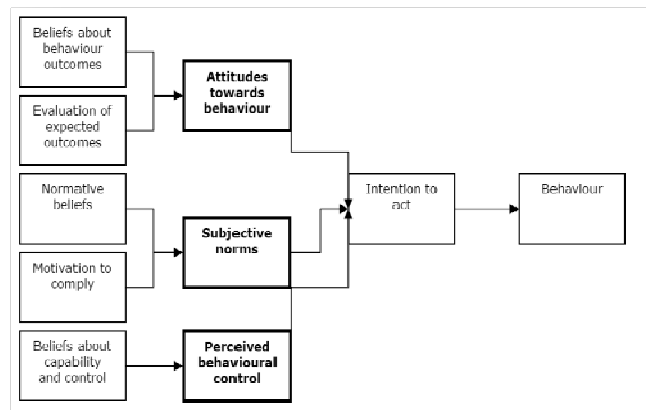
Figure 2: The Theory of Planned Behavior (Munro *et al.,* 2007)

Support for the Theory of Planned Behavior as a predictive model of cheating comes from Whitley (Whitley, 1998; Whitley & Kieth-Spiegel, 2002). Despite its ability to predict a range of behaviors, use of the TPB (Ajzen, 1991) in academic misconduct research has been limited. Though the TPB has been shown to explain much of the systematic-variance in many-different-behaviors, a common-criticism is that it fails to include such variables as self-identity, self-efficacy, past-behavior, affective-response and moral-judgment (Conner & Armitage, 1998).

(13) *Modified form of the Theory of Planned Behavior*
This theory included a series of demographic-variables that have been found to exert significant-influence on outcomes related to cheating. Specifically, the effects of selected pre-college high-school cheating-behavior, demographics (gender), and cloistered (discipline and education-level)-variables on constructs, as identified in the Figure 3.

For a complete-review of the influence of these-variables on cheating see Passow *et al.*(2006) and Whitley &Keith-Spiegel (2002).
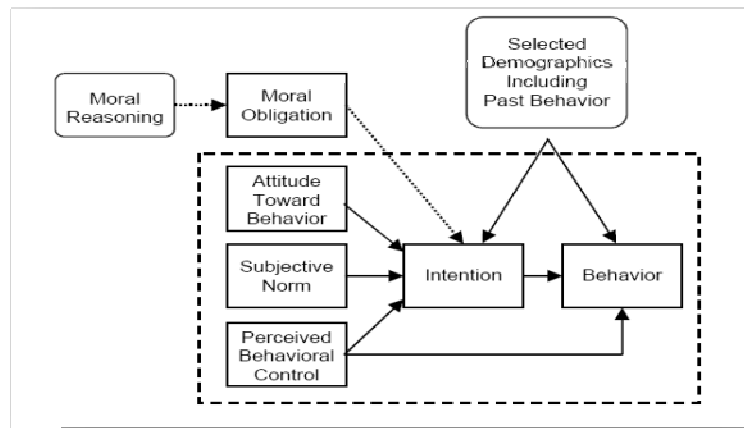

Figure 3: Modified version of Ajzen's Theory of Planned Behavior (Ajzen, 1991; Ajzen, 2002).

(14) *Neutralization theory*
Techniques of neutralization are a theoretical-series of methods by which those who commit illegitimate-acts temporarily-neutralize certain-values within-themselves which would normally prohibit them from carrying out such-acts, such as morality, obligation to abide by the law, and so on. In simpler-terms, it is a psychological-method for people to turn off "inner protests" when they do, or are about to do something they themselves perceive as wrong.

Matza & Sykes' theory states that people are always aware of their-moral-obligation to abide by the law, and that they have the same-moral-obligation within themselves to avoid illegitimate-acts. Thus, they reasoned, when a person did commit illegitimate-acts, they must employ some-sort of mechanism to silence the urge to follow these-moral-obligations. The theory was built up upon four-observations (Topalli, 2006): (1) offender express guilt over their illegal-acts, (2) Delinquents frequently respect and admire honest, law-abiding-individuals, (3) A line is drawn between those whom they can victimize and those they cannot, and (4) Delinquents are not immune to the demands of conformity.

These-theories were brought from positivistic-criminology which looked at epistemological

perspectives of delinquency. From these, Matza and Sykes created the following methods by which, they believed, offender justified their-illegitimate-actions (Siegal, 2005): (1) *Denial of responsibility* (The offender will propose that they were victims of circumstance or were forced into situations beyond-their-control), (2) *Denial of injury* (The offender insists that their-actions did not cause any harm or damage), (3) *Denial of the victim* (The offender believes that the victim deserved whatever action the offender committed), (4) *Condemnation of the condemners* (The offenders maintain that those who condemn their-offense are doing so purely out of malice, or are shifting the blame off of themselves unfairly), and (5) *Appeal to higher loyalties* (The offender suggests that his or her offense was for the greater-good, with long-term-consequences that would justify their-actions, such as protection of a friend, for example).

There are five-methods of neutralization generally manifest themselves in the form of arguments, such as: (1) "It was not my fault", (2) "It was not a big-deal. They could afford the loss", (3) "They had it coming", (4) "You were just as bad when you were my age", and (5) "My friends needed me. What was I going to do?".

Neutralization theory, as applied to the relationship between the beliefs and actions of offending-youth, presents a way to comprehend why students might violate ethical-codes they otherwise support (McQuillan & Zito, 2011).

In applying neutralization theory to student-cheating, a number of researchers have found that a student's likelihood of cheating depends on the degree to which those can rationalize cheating in a given circumstance (Eisenberg, 2004; Whitley, 1998; and Diekhoff *et al.,* 1996).

(15) Bolman and Deal's Four-Frame Organizational Theory

Bolman and Deal (1997) suggest viewing organizations and issues through a four-frame-model to move us "beyond narrow and mechanical-thinking" to "a more-expressive, artistic-conception that encourages flexibility, creativity, and interpretation". Applying the four-frame-model to the student-cheating-problem enabling define the territory between organizational-culture and best-practices.

Bolman & Deal's theory has four-essential-frameworks: structural, human-resource, political, and structural. The theory relates that the four-frameworks or orientations signify the ways in which leaders view organizational-situations, shape how these-situations are defined, and describe how they can be managed-effectively. The human-resources and structural-frames are related to the effectiveness of managers, while the political and symbolic-frames relate to the effectiveness of leaders. Bolman & Deal describe the difference between a leader and a manager as "managers focus on execution, leaders on purpose" (Bolman & Deal, 2008). Bolman and Deal also assert that leaders bearing leadership-tendencies in each of the four frames will result in the most-effective leadership-style (Bolman& Deal, 2008).

The structural-frame embodies efficiency, structure and policies. Leaders who are dominant in the structural-frame value data and analysis, clearly set direction, hold stakeholders-accountable, and problem-solve through restructuring. The human-resource-frame focuses on the interaction between the needs of the organization and the individual. Leaders who are dominant in the human-resources-frame value relationships and emotions and lead via empowerment and facilitation. The political-frame emphasizes conflict and competition among different-interests for scarce-resources. Leaders who are dominant in the political-frame are networkers, coalition-builders, and negotiators. Finally, the symbolic-frame places meaning and predictability in what is considered a disordered-world. Such symbols include academic integrity talk in university-publications (Rudolph & Timm, 1998), a learner-oriented curriculum (Whitley & Keith-Spiegel, 2001), and, most-emphasized, an honor or modified-honor-code (Whitley & Keith-Spiegel, 2001; Cole & McCabe, 1996; McCabe & Trevino, 1996). Leaders who are dominant in the symbolic frame are attentive to ceremony, ritual, and stories (Bolman & Deal, 2008). The human-resources-frame focuses "on the relationships between organizations and people" (Bolman & Deal, 1997) and the need for the development of new-behaviors and practices.

It is key for leaders to consider to what extent "motivation, technical constraints, uncertainty, scarcity, and conflict" (Bolman & Deal, 1997) are impacting the student-cheating-problem in their-particular organization, and then to apply the four-frame-model in order to generate a comprehensive, holistic approach. The theory of Bolman & Deal (1997) helps to contextualize the problem of student cheating and to discover its scale and interventions' requirements particular to individual-organizations.

(16) *Huntington's Political Institutionalization Theory*

Huntington's (1968) theory complements the work of Bolman and Deal by anticipating an end-product of a change-process: *institutionalization*. Huntington also uses a four-fold-analysis that emphasizes the criteria of *adaptability, autonomy, complexity, and coherence*.

Attention to these-four-criteria will ensure that the change "sticks," becoming a part of the fabric of the organization. To that end, integrity is internalized by members rather than seen as an external-command for behavioral-control. Attention to these four-criteria, then, helps cement academic-integrity into the norms and values of individuals, groups, and the organization. The theories of Bolman& Deal (1997) and Huntington (1968) enabled to create a new-agenda for strategic-organizational-change not focused narrowly on the reduction of student cheating but on the institutionalization of academic-integrity.

(17) *Agnew's general strain theory*

Robert Agnew (1985, 1992) advanced Merton's theory (1938) by expanding the concept of *strain* to include additional-sources of stress or frustration beyond the traditional-disjuncture between economic-aspirations and expectations. In simple-terms, deviance is generated by an inability to cope, in legitimate-ways, with noxious-events that produce negative-emotions, such as anger. Agnew's general strain theory is based on the universal-idea that "when people are treated badly they may get upset and engage in crime". Agnew's general strain theory identified three-deviance-producing-sources of strain: (1) Strain produced from a failure to achieve positively-valued-goals; (2) Strain produced by the removal of positively-valued-stimuli; and (3) Strain caused by the presence of negative-stimuli. Agnew (1992) argues that cognitive, emotional, and behavioral-adaptations to frustration exist and that very few-individuals respond in a deviant-manner.

(18) *Social learning theory*

Albert Bandura posits that learning is a cognitive-process that takes place in a social-context and can occur purely through observation or direct-instruction, even in the absence of motor-reproduction or direct reinforcement. In addition to the observation of behaviour, learning also occurs through the observation of rewards and punishments, a process known as *vicarious-reinforcement*. The theory expands on traditional behavioural theories, in which behaviour is governed solely by reinforcements, by placing emphasis on the important-roles of various-internal-processes in the learning-individual (See Figure 4).
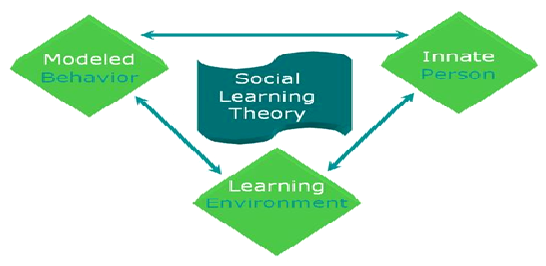

Figure.4: SLT framework (Bandura , 1997)

As initially outlined by Bandura and Walters in 1963, and further detailed in 1977, key-doctrines of social learning theory are as follows: (1) Learning is not purely-behavioral; rather, it is a cognitive-process that takes place in a social-context, (2) Learning can occur by observing a behavior and by observing the consequences of the behavior (*vicarious reinforcement*), (3) Learning involves observation, extraction of information from those-observations, and making decisions about the performance of the behavior (*observational learning or modeling*). Thus, learning can occur without an observable-change in behavior, (4) Reinforcement plays a role in learning, but is not entirely-responsible for learning, and (5) The learner is not a passive-recipient of information. Cognition, environment, and behavior all mutually influence each-other (*reciprocal determinism*).

Social learning theory draws heavily on the concept of modeling, or learning by observing a behavior. Bandura outlined three-types of modeling-stimuli: (1) *Live-model* in which an actual-person is demonstrating the desired-behavior, (2) *Verbal-instruction*, in which an individual describes the desired-behavior in detail and instructs the participant in how to engage in the behavior, and (3) *Symbolic*, in which modeling occurs by means of the media, including movies, television, Internet, literature, and radio. Stimuli can be either real or fictional-characters.

(19) *Social Practice Theory*

Social practice theory (SPT) is increasingly being applied to the analysis of human-behavior, particularly in the context of energy use and consumption. Rather than a single-theory or model, SPT is something of an umbrella-approach, under which various-aspects of theory are pursued. The central-insight of SPT is the recognition that human-practices (*ways of doing, "routinized-behavior", habits*) are themselves arrangements of various inter-connected-elements, such as physical and mental-activities, norms, meanings, technology use, knowledge, which form peoples-actions or behavior, as part of their everyday-lives (Reckwitz, 2002). The approach particularly emphasizes the material-contexts (also *socio-technical infrastructures*) within which practices occur, drawing attention to their-impact upon behavior (*the production and reproduction of practices*).

The three-elements-model (Figure 5) has been developed from Shove's work and incorporates: *Materials* (The physical-objects that permit or facilitate certain-activities to be performed in specific-ways); *Meanings* (Images, interpretations or concepts associated with activities that determine how and when they might be performed); *Procedures* (Skills, know-how or competencies that permit, or lead to activities being undertaken in certain-ways).
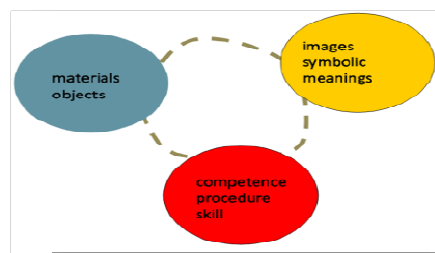
Figure 5: Three elements model (Chatterton, 2011)

It is now widely-acknowledged that face-to-face advice is an important-influence on behavioral-outcomes and it is likely that, in addition to constituting knowledge-exchange, this social-interaction promotes critical-reflection upon (*elaboration, deliberation*) why and how certain-activities occur; this could be beneficial for canceling of the cheating-offender.

(20) *Diffusion of Innovation (DoI) Theory*

Instead of focusing entirely on individual-decision-makers or social-structures, the Diffusion of Innovation (DoI) theory places its emphasis on innovation as an agent of behavior-change, with innovation defined as "*an idea, practice, or object perceived as new*" (Rogers, 2003). Consequently, it is perceived-attributes of an innovation that determine its rate of adoption to a greater-extent than the characteristics of the adopters. Originally published in 1962, DoI theory posits four-main-elements of behavior change: *innovation, communication channels, time and social-systems* (Rogers, 2003).

According to DoI theory, behavior will change more-rapidly if innovations are perceived as being better than previous-options (*relative advantage*) and consistent with the existing-values, experiences and needs of potential-adopters (*compatibility*), if they are easy to understand (*complexity*), testable via limited-trials (*trial-ability*) and their-results are visible (*observe-ability*). Different-information-exchange relationships (*communication channels*) have specific-impacts in terms of innovation-diffusion. Innovation theory is a large-academic-field and consequently several-useful-summaries, reviews and critiques of DoI theory are available (Wright, 2004; Greenhalgh *et al.,* 2004; Lyytinen & Damsgaard, 2001).

(20) *Deterrence theory*

The criminal-aspect of academic-cheating has been stressed in the past. Magnus *et al.,* (2002) drew comparisons between cheating and corruption in a cross national-study where they suggest a Tolerance-to-Cheating Index, similar to the Corruption Perception Index published annually by Transparency International (TI). Also, Bunn *et al.,* (1992) pointed out the similarities of academic-cheating and the act of theft.

The concept of deterrence has two-key-assumptions: (1) specific-punishments imposed on offenders will "deter" or prevent them from committing further-crimes; and (2) fear of punishment will prevent others from committing similar-crimes (Wright, 2010). In a legal-context, the term "deterrence" refers to any-instance in which an individual contemplates a criminal-act, but refrains-entirely from, or restrict the commission of such an act, because he/she perceives some-risk of legal-punishment and fears the consequences (Gibbs, 1986).

Deterrence theory applies utilitarian-philosophy to crime, where "rational choice" is based on economic theory derived from the same utilitarian-tradition. Both-theories assume that human-actions are based on rational-decisions-that is, they are informed by the probable-consequences of that-action. According to the deterrence theory, the rational-calculus of the pain of legal-punishment offsets the motivation for the crime (presumed to be constant across offenders, but not across offenses), thereby deterring criminal-activity. In comparison, the rational choice theory posits that one takes those-actions, criminal or lawful, which maximize payoff and minimize-costs.

The theory of deterrence (deterrence is the use of punishment as a threat to discourage people from offending) that has developed from the work of Beccaria (1963), and Bentham (1948), relies on three individual components: *severity, certainty, and celerity*. The more severe a punishment, it is thought, the more-likely that a rationally-calculating-human-being will abstain from criminal-acts. In essence, this-theory proposes that cheating is a function of the severity of the consequences of misconduct. Proponents of deterrence believe that people choose to obey or violate the law after calculating the gains and consequences of their-actions. Deterrence is often contrasted with retributivizm, which holds that punishment is a necessary-consequence of a crime and should be calculated based on the gravity of the wrong done (Abrams, 2012). Thus, to prevent or stop certain-behaviors, as cheating at examinations, there is a need to punish the offenders with consequences so severe, that it will act as a discouragement. Such-punishments might include failing the assignment or course, probation, repeating the year or, even, and expulsion among other-options. This is based on past-research demonstrating that when people believe they can engage in a behavior with no or minimal-consequences, they are likely to do so. One of the principal-challenges is, however, that due to the increased-time and effort involved, lecturers may

not opt to report the cheating-behavior, turning a blind-eye, and therefore cheating remained unpunished.

There are two-basic-types of deterrence: general and specific. *General deterrence* is designed to prevent misdemeanor in the general-population. Thus, the punishment of offenders serves as an example for others in the broad-populace, who has not yet participated in criminal-acts. *Specific deterrence* is designed to deter only the individual-offender from committing that crime in the future. Proponents of specific-deterrence also believe that punishing offenders severely will make them reluctant to reoffend in the future. Punishment that is excessively-cruel, however, is unjust, and punishment that is not adequately-rigorous will not discourage criminals from committing-crimes (Wikipedia, 3).

Certainty of punishment simply-means making sure that punishment takes place whenever a criminal-act is committed (Clay, 2010). Classical-theorists such as Beccaria believe that if individuals know that their undesirable-acts will be punished, they will refrain from offending in the future. Moreover, their-punishment must be *swift* in order to prevent crime. The closer the application of punishment is to the commission of the offense, the greater the likelihood that offenders will realize that crime does not pay. In short, deterrence-theorists believe that if punishment is *severe, certain, and rapid*, a rational-person will measure the gains and losses before engaging in crime and will be discouraged from violating the law, if the loss is greater than the gain (Travis& Francis, 2005).

(21) *Theory of motivated cheating*

The theory of motivated cheating postulates that exam/test-takers may cheat when they do not know the answer. With probability *k*, an "observer" is unsure of an answer and will copy from a nearby "target" with probability c. The corresponding-paramerers for the target may be entirely unrelated to those of the observer. Thus, the undersirable-feature of bidirectionality of parameters found in correlational-techniques is not an inherent-feature of this-theory of cheating. Predictions are derivered, and estimatesis of k and c are proposed. Statistically-large-values of c suggest that an observer was coping from the target. High-values of both the observer and the target suggest collusion. Figure 6 shows the key-elements of the theory applied an *m*-item multiple-choice-test with a single-correct-response for each-test-item. If the target makes an error, the observer will make exactly the same-error. The probability of the observer's not knowing the answer is (1-k_0) and probability of cheating is c_0. Therefore, the probabillity that the observer copies the same answer as the target equals (1-k_0) c_0 (Link & Day, 1992).
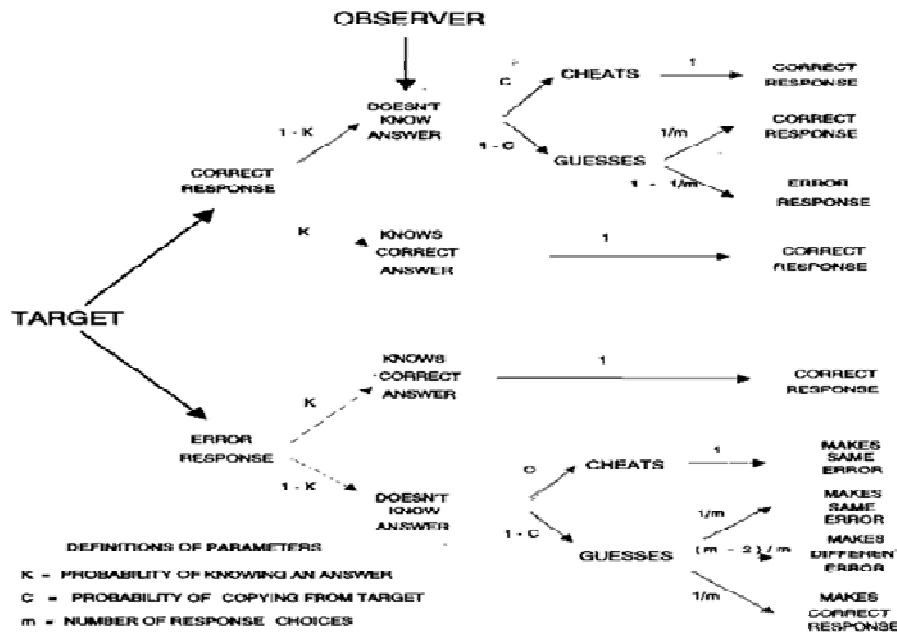

Figure 6: The theory of motivated cheating (Link & Day, 1992).

The theory provides conditional-probability-statements that lead to testable-consequences, provides methods for estimating the probability that cheating occurs, and shows how the performances of the observer and the unsuspected (perhaps) target are inter-related.

Table 2 shows the summary of the additional-theories of human-behavior, which could be potentially useful for academic-misconduct-research.

Table 2: Summary of the additional-theories of human-behaviour

Theory of Human behaviour	Focus of theory	Main concepts re: Human behaviour	Some practice applications
Systems theory Includes: Ecological Systems *[Systems Perspective]* Includes: Family Systems *[Systems Perspective]*	How persons interact with their environment How the family system affects the individual and family functioning across the life-span	Persons are in continual transaction with their environment *Individual functioning shapes family functioning and family systems can create pathology within the individual	*Useful for developing holistic view of persons-in-environment *Enhances understanding of interactions between micro-meso-macro levels of organization *Enriches contextual understanding of behaviour
Behaviorism & Social-learning theory Includes: Cognitive theory, Behavioral theory, Social Learning theory *[Social Behavioral Perspective]*	How individuals develop cognitive functioning and learn through acting on their environment	*Imitation & reaction to stimulation shape behavioural learning *Intelligence is an evolutionary, biological adaptation to environment *Cognitive structures enable adaptation & organization	*Useful for enabling behavioural & symptomatic change *Useful for assessing individual cognitive functioning & group interactions
Psycho-dynamic Theory Includes: Classical psycho-dynamic theory, Ego-psychology, Object-relations theory, Self-psychology *[Psychodynamic Perspective]*	How inner energies and external forces interact to impact emotional development	*Unconscious and conscious mental activity motivate human behavior *Ego functions mediate between individual and environment *Ego defense mechanisms protect individuals from becoming overwhelmed by unacceptable impulses and threats	*Useful for understanding inner meanings & intrapsychic processes *Useful for understanding motivation, adaptation, & interpersonal relationships *Useful for assessing strengths & ego functioning
Psychosocial Developmental Theory *[Developmental Perspective]*	How internal & external forces shape life development, generally by life stages	*Human development occurs in defined & qualitatively different stages that are sequential & may be universal *Individual stages of development include specific tasks to be completed & crises to be managed	*Useful for understanding individual growth & development across life cycle *Beneficial for assessing individual strengths & deficits
Symbolic interactionism *[Social Constructionist Perspective]*	How the "self" is influenced and shaped by social processes and the capacity to symbolize	*Human action is caused by complex interaction between and within individuals *Dynamic social activities take place among persons and we act according to how we define our situation *We act in the present, not the past	*Enhances understanding of the relationship between the individual and society and the "self" as a social process *Provides framework for individual, group, and societal assessment
Conflict theory *[Conflict Perspective]*	How power structures & power disparities impact people's lives	*All societies perpetuate some forms of oppression & injustice and structural inequity *Life is characterized by conflict not consensus	*Informs policy and may guide macro-level practice *Useful in formulating assessments involving oppression *Enhances understanding of conflict between persons, ideas, groups, etc.

The following two-sections (Situational Ethics, and Extenics), although, are not theories, per se, nevertheless they are very-relevant to the theories outlined-above, and therefore, analogous to self-efficacy-

concept, they deserve their rightful-place in this presentation.

(22) *Situational Ethics*

Situational ethics, or situation ethics, takes into account the particular-context of an act when evaluating it ethically, rather than judging it according to absolute-moral-standards. In situation ethics, within each context, it is not a universal-law that is to be followed, but the law of love (agape-love, in particular, as the highest-end of love, which is conceived as having no-strings-attached to it and seeking nothing in return; it is a totally-unconditional-love (Situation ethics, 2000). This appears to be related to rational choice theory and is a direct outgrowth of John Stuart Mills and his-initial-utilitarianism.

The four working principles of situation ethics are (Fletcher, 1966): (1) *Pragmatism:* An action someone makes should be judged according to the love influenced in it, so the user must always ask: what is the most loving thing to do? For example, war may not (to a situationist) be considered the most-loving-thing and so-many are quick to deem it as morally-wrong, (2) *Relativism:* Approaching every-situation with a relative-mindset and thus opposing legalistic-approaches – avoid words such as "never", "complete" and "perfect", (3) *Positivism:* The most-important-choice of all in the teachings in 1 John 4:7-12 is "let us love one another because love is from God", and (4) *Personalism:* Whereas the legalist thinks people should work to laws, the situational-ethicist believes that laws are for the benefit of the people.

The six-fundamental-propositions of situation ethics are (Fletcher (1967): (1) *First proposition* (Only one- thing is intrinsically-good; namely love: nothing else at all); (2) *Second proposition* (the ruling-norm of Christian-decision is love: nothing else; (3) *Third proposition* (Love and Justice are the same, for justice is love distributed, nothing-else; (4) *Fourth proposition* (Love wills the neighbors' good, whether we like him/her or not; (5) *Fifth proposition* (Only the end justifies the means, nothing else. Actions only acquire moral-status as a means to an end; and (6) *Sixth proposition* (Love's decisions are made situationaly, not prescriptively).

These-approaches help to understand why students do cheat; moral-training and a focus on the integrity may help to diminish the cheating, that unquestionably-transpires.

(22) In 1983, the article "Extension Set and Non-compatible Problems" was published in *Journal of Science Exploration*, which proclaimed the birth of the new discipline—*Extenics*. It constitutes of Extension theory, extension-methodology and extension-engineering is a new-discipline for dealing with contradictory-problems with formulized-models (Yang & Cai, 2013; Yang& Li, 2012). By certain transformation, one-thing that does not meet our-needs can be turned into another-thing that meets the needs. Extenics consists of basic-element, extension-logic and extension-set-theory. Extension-set can instruct us the transformation-paths. Now Extenics-based-methodology has been applied in various-fields (Li X, et al., 2015; Cai & Yang, 2012). According to the Extension set theory (Yang & Cai, 2013) and its division on domains (Yang& Li, 2012; Cai *et al.,* 2008), solutions can be explored from 3 paths: elements, rules or criteria and domain of discourse; the illustration is shown in Figure 7.
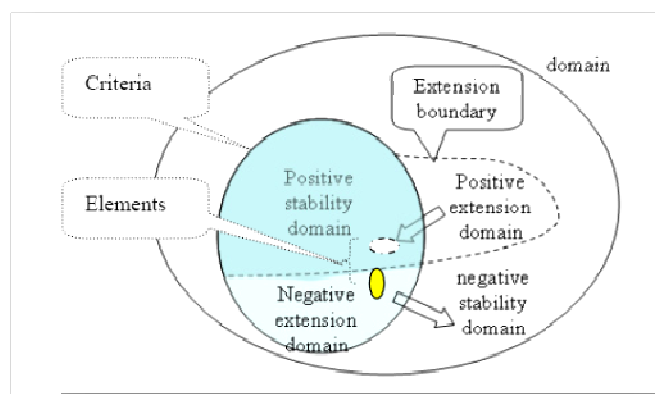

Figure 7: Extenics (Wang *et al,* 2015)

3.2 Models

(1) *The Health Belief Model*

The health belief model (HBM) (Sharma& Romas, 2012; Becker, 1974) is a cognitive-model which posits that behavior is determined by a number of beliefs about threats to an individual's well-being and the effectiveness and outcomes of particular-actions or behaviors. Some-constructions of the model feature the concept of self-efficacy (Bandura, 1997) alongside these-beliefs about actions. These-beliefs are further supplemented by additional-stimuli referred to as "cues to action'', which trigger actual-adoption of behavior. Perceived-threat is

at the core of the HBM as it is linked to a person's "readiness" to take action. It consists of two-sets of beliefs about an individual's perceived-susceptibility or vulnerability to a particular-threat and the seriousness of the expected-consequences that may result from it. The perceived benefits associated with a behavior, that is its likely effectiveness in reducing the threat, are weighed against the perceived costs of and negative-consequences that may result from it (*perceived barriers*), to establish the overall-extent to which a behavior is beneficial. The individual's perceived-capacity to adopt the behavior (*their self-efficacy*) is a key-component of the model. Finally, the HBM identifies two-types of "cue to action": *internal*, which in the health-context includes symptoms of ill-health, and external, which includes media-campaigns or the receipt of other-information. These cues affect the perception of threat and can trigger or maintain behavior.

The main-elements of the HBM are illustrated in Figure 2. There are a number of reviews and summaries on its applicability to human-behavior, particularly, cheating, are available (Webb *et al.,* 2010; Nisbet & Gick 2008; Munro *et al*., 2007; Rutter & Quine, 2002; Armitage & Conner, 2000).
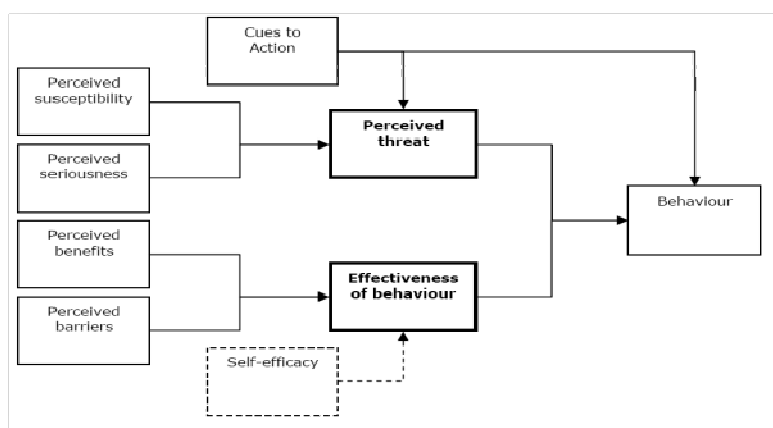

Figure 8: The Health Belief Model (Sharma& Romas, 2012; Becker, 1974)

(2) *The Trompeter model based of Fraud theory*

The evolution of a theory of fraud began with, what is referred to as, the Fraud Triangle (*the Triangle*), which first appeared in sociology-literature over sixty-years-ago (Creasey, 1953; 1950). These-influential-works on the background of white-collar-crime hypothesized three-necessary-conditions: (1) *opportunity*, (2) *rationalization*, and (3) *motive*. The Triangle provided an adequate-model for examining fraudulent-activity for several-decades until studies began to suggest that, as both financial-markets and fraud-schemes grew in complexity, it likely failed to capture emerging-experience for fraud (Albrecht, 1984). Eventually an expanded-model to the Triangle included a focus on the crime/fraud-act itself (Trompeter *et al.,* 2013).The Trompeter-model added three-elements of fraud-action to the Triangle: *the act* (execution and methodology of the fraud), *concealment*, and *conversion* (how the gain is made legitimate for personal-use).

The left-hand triangle in Figure 9 represents the theoretical-framework of white-collar crime, describing the necessary-conditions for fraud to occur: incentive, opportunity, and the individual-ability to rationalize deviant- behavior (Creasey, 1950).

The review of literature suggests that the results of major-studies on academic-dishonesty adequately-overlay the elements of the Fraud Triangle, which was proposed reframing in the context of Academic-Dishonesty (Figure 10).

The Academic Dishonesty Triangle helps define the interaction among the elements of cheating and it also helps to frame a variety of research-questions. Utilizing the Triangle of Academic Dishonesty would make it possible to overcome limitations in academic-dishonesty-literature by utilizing appropriate multi-variable modeling techniques with factors, which have been heretofore identified as having a correlation with cheating-behaviors.
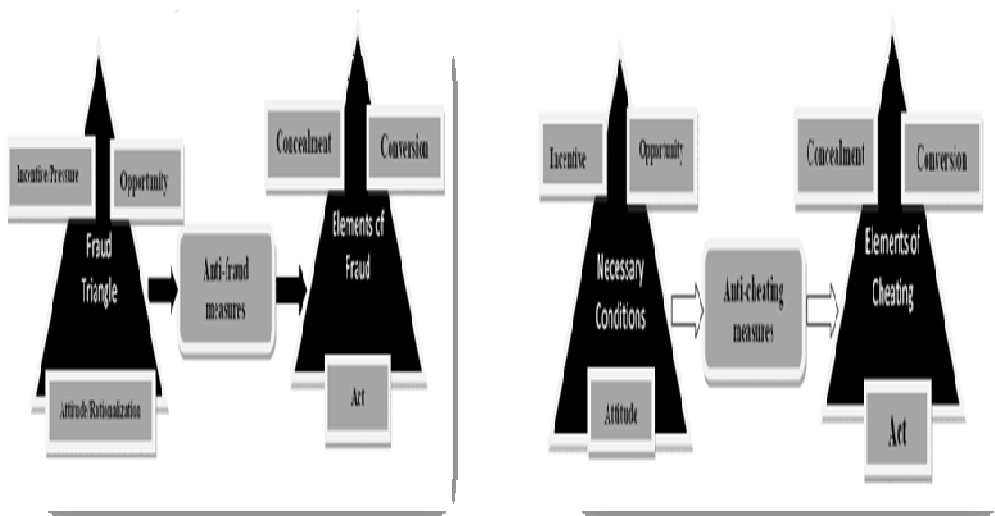
Figure 9: The Model with Respect to Fraud   Figure 10: Triangle of Academic-Dishonesty
Source for both-figures: Trompeter *et al.,* 2013

More-recently the work on background of fraud has examined the potential-deterrents of detection and punishment, which holds particular relevance to the problem of academic-dishonesty (Dorminey, 2012).

(3)*The Deterministic, Gated Item Response Theory Model (DGM)*

Shu (2010) designed the model to detect test-cheating that results from item over-exposure. Specifically, this-model addresses cheating that has occurred because the examinees have had previous-access to an-item. The DGM classifies test-takers as cheaters or non-cheaters by conditioning on two-mutually-exclusive item-types. The first-type of item is one that has probably-been-compromised. This first type of item could be identified based on empirical-exposure counts, time in use, or other-indicators (called "*exposed items*"). The second-type of item is considered a secure-item due to its recent-release or other-factors (called "*unexposed items*") (Segall, 2002). In many-ways, exposure of items acts as a gate through which cheating is possible. Even students with a tendency to cheat are not able to cheat on secured-items. The DGM identifies potential-test-cheaters by computing the score-gain in the exposed-items when compared to the unexposed-items. The DGM decomposes the observed-item performance-attribute to either an examinees true-proficiency-function or a response-function due to a cheating-ability. The gating-mechanism and specific-choice of parameters in the model further allow estimation of a statistical-cheating-effect at the level of individual-examinees or groups (*in case individuals suspected of collaborating*), and identification of students' real-competence-level. In this context, "gating-mechanism" is used to refer to the process of defining those-items that have been exposed and thus could be cheated on, as opposed to unexposed-items, for which both, cheaters and non-cheaters, are expected to behave in the same-way. The DGM is different-from the existing-cheating-detection-methods in its practical-functioning and methodological design, which should be a beneficial-addition to the existing-cheating-detection-methods.

The DGM uses a true-ability to characterize students' real-competency and a cheating-ability to estimate the cheating-effectiveness. The structural-part of the DGM is defined in Equation (1) and the measurement-models specific to the two-types of ability are defined in Equations (2) and (3):

$$P(U_{ij} = 1 | \theta_{tj}, \theta_{cj}, b_i, T_j, I_i)$$
$$= P(U_{ij} = 1 | \theta_{tj})^{1-T_j} * \left[(1 - I_i) * P(U_{ij} = 1 | \theta_{tj}) + I_i * P(U_{ij} = 1 | \theta_{cj}) \right]^{T_j} \qquad (1)$$

, and

$$P(U_{ij} = 1|\theta_{tj}, b_i) = \frac{\exp(\theta_{tj} - b_i)}{1 + \exp(\theta_{tj} - b_i)} \qquad (2)$$

$$P(U_{ij} = 1|\theta_{cj}, b_i) = \frac{\exp(\theta_{cj} - b_i)}{1 + \exp(\theta_{cj} - b_i)} \qquad (3)$$

$$\sum b_i = 0 \qquad (4)$$

$$T_j = 1, \quad \text{when } \theta_{tj} < \theta_{cj} \qquad (5)$$

where θtj is the true-ability characterizing the j th examinee's real-competency level, θcj is the cheating-ability determined by the j th examinee's cheating-effectiveness, bi is the ith item-difficulty, Ii is a model-input defining the ith item compromise-status which is referred to as the "gating-mechanism", and Tj is an indicator variable flagging the j th examinee as a cheater or non-cheater conditioning on the item compromise-status. $Tj =$ 1 represents that the j th examinee is a cheater, and $Tj = 0$ indicates that the j th examinee is not a cheater. The measurement models in Equations (2) and (3) are Rasch models.

The constraint $\sum bi = 0$ is used to center the item-scale at zero which is common in Rasch-Model-families (e.g., Rost's Mixture RaschModel, 1990).

Equation (5) ($\theta t < \theta c$) is an assumption made in this model that examinees' cheating-ability should be greater than their true-ability. Technically, the DGM can deal with either $\theta t > \theta c$ or $\theta t < \theta c$, but cannot model them simultaneously. The case that an examinee cheats on tests and obtains a lower score ($\theta t > \theta c$) rarely occurs in real settings, and is less important than the case of $\theta t < \theta c$. On the one hand, cheaters in the case of $\theta t > \theta c$ have already been penalized by their-cheating-activities; and, on the other-hand, the cheating-activities in the case of $\theta t < \theta c$ are more-likely to mislead stake-holders. Thus, the DGM is primarily-focuses on detecting cheaters who make significant-score-gain in the exposed-items over the unexposed-items.

(4) *Smith et al.'s (2009) Motivation and Cheating Model*
Smith, Davy & Rosenberg (2009) Model Cheating behavior has focused primarily on defining who is more likely to cheat. Paths A though V represent a direct-test of the referent-model. Smith et al., (2009) discussed the theoretical- and empirical-foundation for each of these posited-paths. It also extends the referent-model to examine the independent-influence of alienation on academic-performance, cheating, and neutralization. Alienation is the state of psychological-estrangement from a culture, which includes feelings of social-isolation, powerlessness, and the absence of norms. It is often manifested by deviant-behavior (Seeman, 1991). Exploratory Path Z recognizes that the scope of dysfunctional-behavior might include deficient-academic-performance.

The use of latent-variable-models with multiple-indicators to examine hypothesized-relationships is a strategy strongly-endorsed for addressing the measurement-error-problems ascribed to multiple-regression and traditional path-analytic techniques (Byrne, 2006; Ullman & Bentler, 2003). Latent-variable structural-equations-analysis takes into account random-error when estimating paths from latent-constructs to indicator-variables, as well as between the parameters of the structural-model-itself.
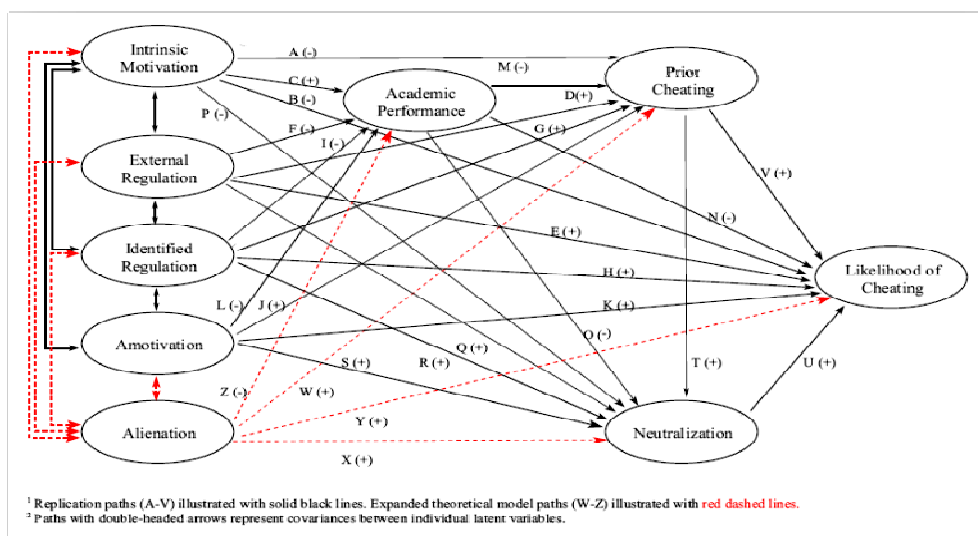
Figure 11: Motivation and Cheating Model (Smith, 2012)

(5) *Trans-theoretical Model (Van der Linden, 2013)*

The Stages of Change (SoC) model (also referred to as the Trans-theoretical Model or Stage-model) (Prochaska *et al.,* 1992) is a widely-applied cognitive-model which sub-divides individuals between five-categories that represent different milestones, or levels of motivational-readiness (Heimlich& Ardoin, 2008), along a range of behavior-change. These stages are: (i) *pre-contemplation*, (ii) *contemplation*, (iii) *preparation*, (iv) *action*, and (v) *maintenance*; shown in Figure 12. At the *pre-contemplation stage*, an individual may, or may not, be aware of a problem, but has no-contemplation of changing their-behavior. From pre-contemplation to *contemplation*, the individual begins thinking about changing a certain-behavior. During-*preparation*, the individual begins his/her-plans for change, and during the *action stage* the individual begins to exhibit new-behavior consistently. An individual finally enters the *maintenance*-stage once they exhibit the new-behavior consistently for over-six-months. A problem faced with the stages of change-model is that it is very-easy for a person to enter the maintenance-stage and then fall-back into earlier-stages. Factors that contribute to this-decline include external-factors, such as weather or seasonal-changes, and/or personal-issues one is dealing with.

First developed in relation to smoking, and now commonly applied to other addictive-behaviors, as cheating-behavior might be, the rationale behind a staged-model is that individuals at the-same-stage should face similar-problems and barriers, and thus can be helped by the same-type of intervention (Nisbet& Gick, 2008). Movement or transition between-stages is driven by two-key factors (i) *self-efficacy* and (ii) *decisional-balance* (that is, the outcome of individual-assessment of the pros and cons of a behavior) (Heimlich &Ardoin 2008; Armitage *et al.,* 2004).
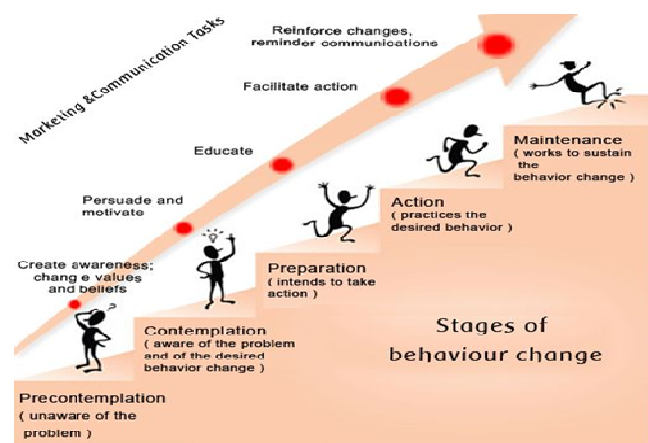

Fugure 12: Stage model (Prochaska *et al.,* 1992).

(6) *Bandura's modified model of transgressive behaviors.*

Farnese *et.al.* (2011) investigated cheating-behaviors in the academic-context by translating a model developed by Bandura and his colleagues in the study of transgressive-behaviors. They investigated the role of domain specific self-efficacy-beliefs and academic-moral-disengagement in influencing students' cheating-behaviors and academic-performance. They included also a contextual-factor, namely "peers cheating-behaviors".

Bandura and colleagues (2001), in developing their-model, aimed at studying transgressive-conducts considered self-efficacy-beliefs as one of the most-relevant-predictors of moral-disengagement (MD). They are namely self-evaluation of one's own-competence to successfully perform a task, to accomplish a particular-goal or to overcome an obstacle (Bandura, 1977).

In addition, they hypothesized that the capacity of managing moral-emotions, such as shame or embarrassment (Eisenberg, 2000), is another-essential-precursor of MD. In summary, the less-people are able to manage their learning-strategies, the less they are able to resist to peers' pressures, and the more they are able to manage moral-emotions, the more they would be prone to morally-disengage. A context in which transgressive-conducts are frequently-acted by peers, through the activation of moral-cognitive-distortions without being apparently-sanctioned, may in turn create a "*morally disengaged culture*" in which those mechanisms could be socialized, learned and activated, legitimating antisocial-conducts. Students appear to be influenced by shared-social-norms, since actual-exposure enhances their-propensity to adopt dishonest-behaviors: cheaters more-frequently report they have seen colleagues cheating, perceive their colleagues as cheaters, and rate the academic-engagement of their-peers as lower (Jordan, 2001). The posited-model is presented in Figure 13.
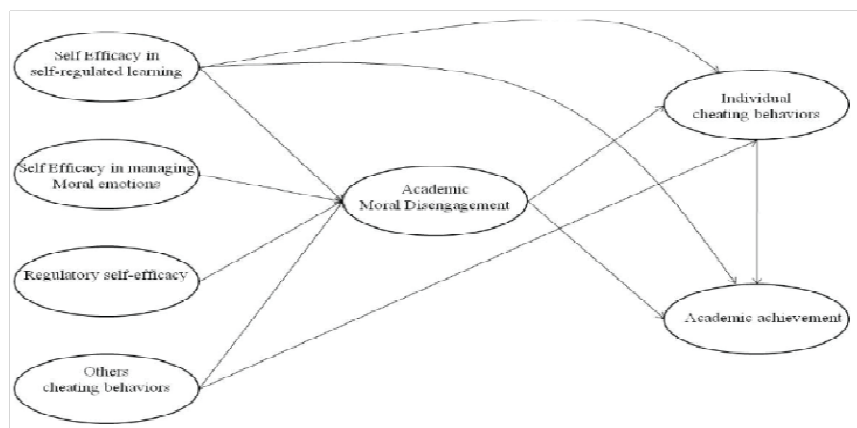
Figure 13: The posited model (Farnese *et. al.,* 2011).

Overall-results supported the posited model, highlighting the relevance of MD in mediating, even if partially, the relation of both self-efficacy-beliefs and perceived-peers' behaviors with individual cheating-behaviors. In fact, a consistent-part of this-process is mediated by academic MD, since justification-mechanisms neutralizing social-norms give an important-contribution in explaining the effective-adoption of cheating-behaviors. Academic MD, both toward other-students (e.g. applying an advantageous-comparison with one's own-colleagues) and toward professors (e.g. attributing the whole blame of one's own conduct to them), is concurrently-affected by both self-efficacy-beliefs and peer-cheating-behaviors.

   (7) *The system dynamics model*

The model constructed is a combination of Carroll's model on school learning (1989) and Merton's theory on deviant behavior (1968).

According to Merton's theory, the specific-type of deviant-behavior that occurs when the culturally defined-goal is accepted and the-traditional-means to reach the goal are rejected is classified (in this context) as *innovation*. And apparently, students who cheat are really-innovative. In 1989, Carroll's model on school learning was published aiming to show how students learn in school. In his-model, a student's academic-achievement is the product of time. By dividing the time the student is willing to spend on his/her studies with the time he/she actually needs to spend on his/her studies; the student's school learning can be calculated. The students' school-learning will then determine his/her academic achievement.

The model-structure is basically an individual-ageing-chain consisting of eight-consecutive-semesters, of four-months each. The structure of the model is innately a goal-seeking-structure consisting of stocks, flows, constants and auxiliary-variables (the goal being the grade). The basic-structure of the model is black. All the constants are diamond-shaped and most of them are filled with a yellow-color. All other-colors on constants (orange, pink, etc.) indicate where different-student-policies connect to the structure (Jonsson, 2011). Figure 14 shows the individual- structure for the first-semester.
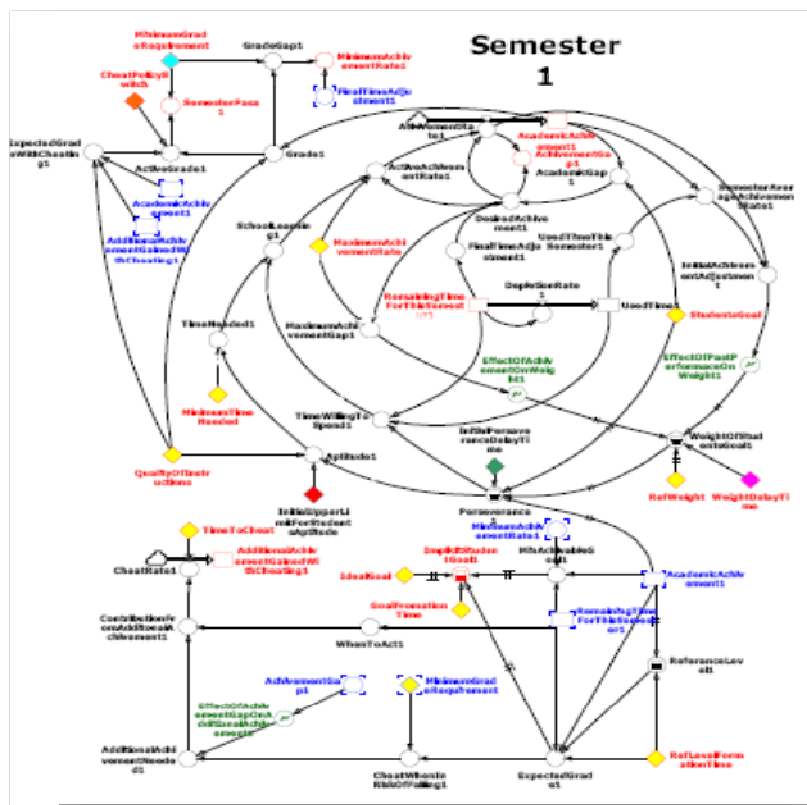
Figure 14: Individual structure for the first semester (Jonsson, 2011).
The model offers insights on feedback-processes available to students and how the students' grade can be affected by cheating.

(8) *Testing-model based on TRA and PLS methodology.*

At the core of this-model by Simkin & McLeod (2009), is TRA, which asserts that an individual's beliefs, value-system, and referential-figures (e.g., parents, teachers, or peers) explain subsequent planned-behavior. The authors formulated structural-path-model to test the TRA-framework. Their-study used SmartPLS (Ringle *et al.,* 2005) to model the reflective-indicators (i.e., *behavioral beliefs*) and the formative-indicators (i.e., *the independent referent items*). In order to analyze the psychometric-properties of the reflective-measures, the Average Variance Extracted (AVE) was calculated, alongside with Composite Reliability (qc), Cronbach's Alpha (CA), Latent Variable Correlations and Cross-Loadings. The PLS-path-values calculated, followed with a bootstrap re-sampling-method, generating 500 samples to evaluate the-model. Then the statistical-significance for each-path using t-tests was calculated. Figure 15 shows the b coefficients and p values extracted via PLS. By separating the cheaters from the non-cheaters, the authors also found one-important-reason why students refrain from cheating: the presence of a moral-anchor in a faculty-member whose-opinion mattered.
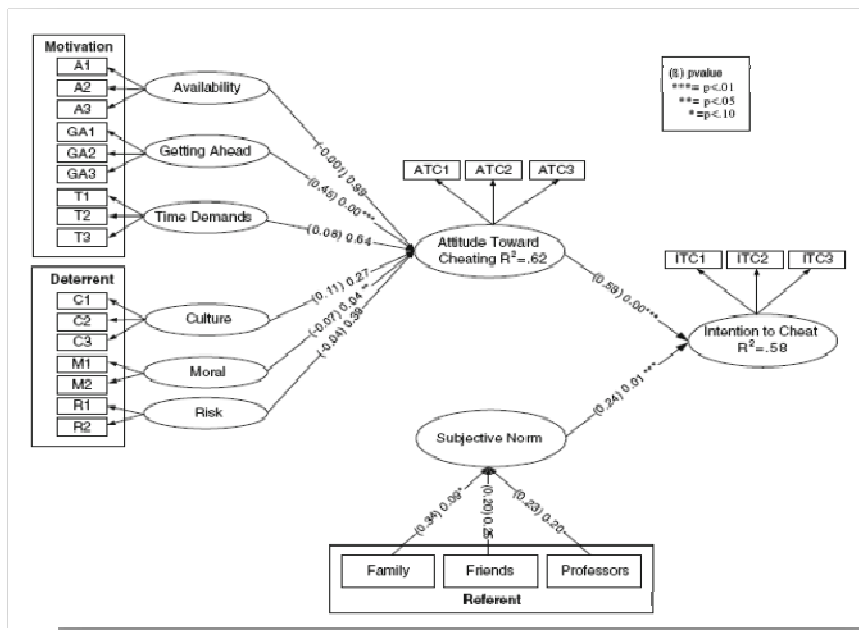
Figure 15: All respondents b, p value, R2 (Simkin & McLeod, 2009).

This-finding also adds to the literature on cheating and offers hope to academic-faculty that their-efforts to restrain students from cheating are both needed and valuable.

(9) *Model by Smith et.al (2009) based on Smith et al. (2002) model and Deci & Ryan'(2000) conceptualization of a motivation.*

This model tests an expanded-version of the Smith *et al.* (2002)-model of cheating-behavior (MCB) and also provide an empirical-test of Deci & Ryan's (2000) conceptualization of amotivation as an anchor on one-side of their-posited-motivational-continuum. Figure 16 presents the theoretical-model to be tested, where all-standardized-path-coefficients are statistically-significant at p < .05 and paths with double-headed arrows represent co-variances between independent-latent-variables. In order to facilitate assessment of the expanded *Davy et al.,* (2007) cheating model, their multiple indicator measurement-instrument and confirmatory-factor-analytic-techniques were used. The confirmatory factor-analyses were necessary to confirm the factor-structure for the succeeding-structural- model-tests. Then, EQS-structural-modeling-tests to evaluate the theoretical model were performed, according to Bentler (1990); these include the Normed Fit Index (NFI), the Non-Normed Fit Index (NNFI), the Comparative Fit Index (CFI), the LISREL Goodness of Fit Index (GFI), and the Root Mean Square of Approximation (RMSEA). The-final-analyses consisted of tests of a priori-sequence of nested-models against the reduced-theoretical-model.
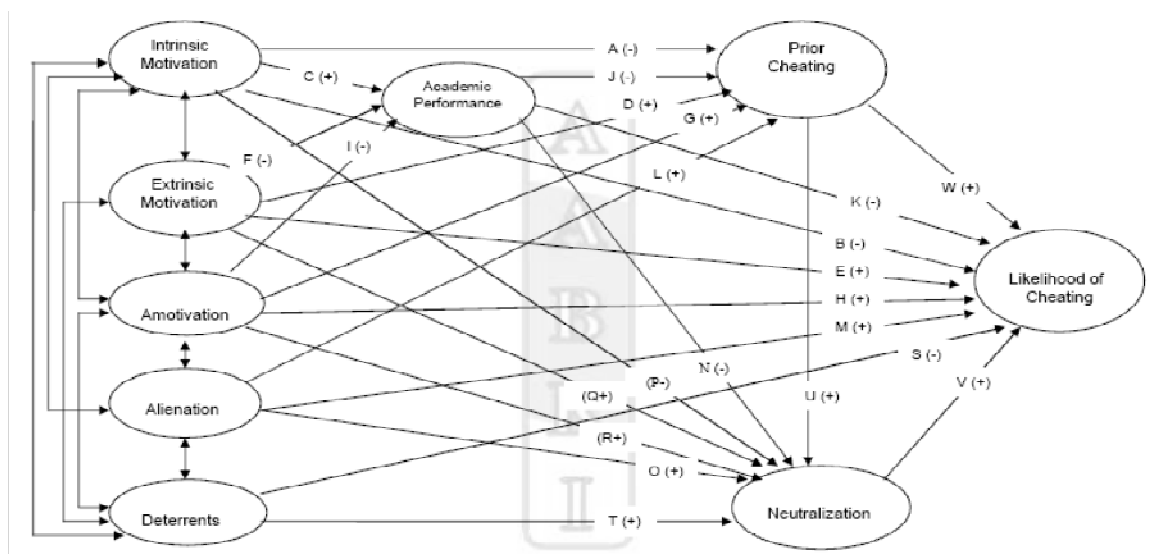

Figure 16: Theoretical Model (Smith *et.al,* 2009).

The goodness-of-fit summary for the full-model indicates that the model provides a good fit to the data.
   (10) *Social Learning Algorithm for Global Optimization*
This-model develops a social-learning-algorithm (SLA) that mimics the social-learning-process of humans in the society, for example, cheating-behavior. SLA is based on Bandura's Social Learning Theory, which describes how people learn in a social-context. The optimization process of SLA is based on a simplified-social-learning-model. As illustrated in Figure17, after the initialization, SLA performs an iteration process in which the members conduct "attention", "reproduction", 'reinforcement', and "motivation" operators repeatedly. The four-operators are similar to those in the process of observational learning in social-learning-theory. Attention captures model-members and their attractive-attributes according to the scores; reproduction builds new-behavior-vectors for all-members by imitation; reinforcement further improves the learnt-behavior with positive-reward or negative-punishment; and motivation-activates the new-behavior-vectors with incentives.

Inspired by the human-social-learning-process, a novel EC algorithm was developed: the SLA. SLA absorbs a high-form of intelligence in nature, the social-intelligence of humans, to seek the global best-solution. Experimental-results have demonstrated the effectiveness and efficiency of this new-algorithm, which has in turn also verified through computer-simulations the outcomes of the social-learning-behavior in human-society (Gong *et.al,* 2013).
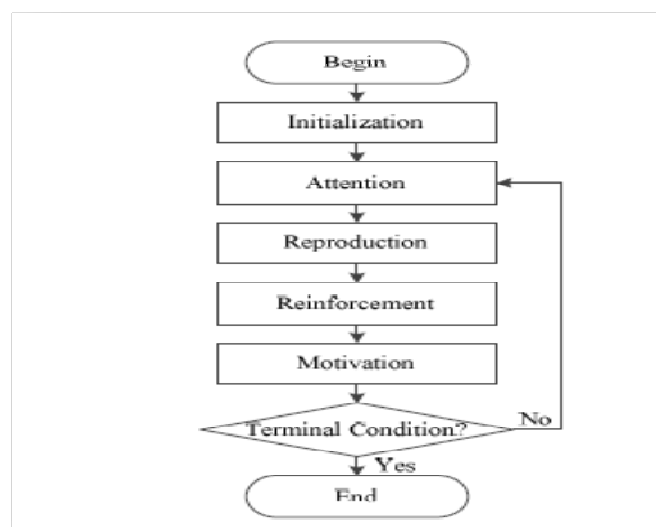

Figure 17: Flowchart of the Social Learning Algorithm (SLA) (Gong *et.al,* 2013)

4. Discussion

This-research was focused on theories and models, which could potentially help to comprehend and to explain complex-human-behavior of cheating. In this regard, the discussion should logically first converse on the issue of cheating and also how to fight the menace.

The valued-symbols about higher-education (independent-thinking, intellectual-property, the struggle of original-thought, and academic-freedom) are threatened by systemic and persistent-student-cheating, should fraudulence prevail over integrity. Acknowledging cheating as a corruption, or crime, rather than as simple-misbehavior, will enable generating strategies that are less about managing cheating and more about institutionalizing academic-integrity.

Six-strategies for leading the institutionalization of academic-integrity in response to the student-cheating problem can be summarized from the combined-theories of Bolman& Deal (1997) and Huntington (1968). These six-strategies are: (1) acknowledging cheating as corruption, (2) embracing vulnerability, (3) highlighting expectations and mutual-interests, (4) thinking-nationally, acting-locally, (5) building the presidential-platform (as Keohane (2003) noted, "in some situations a president/Chancellor/Dean, etc. may be bound in conscience to speak out, even if most-people on campus take the opposite-view" A precarious-value (Selznick, 1957) such as integrity requires the "authoritative-allocation" (Easton, 1953) that only-those at the level of presidents, boards, and accrediting-associations can provide or validate, and (6) avoiding blind alleys.

According to previous-research, students' moral-behavior and ethical-reasoning seems to develop under continuous-education. The authors convinced that this-influence can be made stronger through focused attention to the area and an open ethical-dialogue, not in any specific-course, but as every lecturer's concern.

Acting-locally, while thinking-nationally, may be one-way in which academic-faculty and higher education-leaders, such as university Chancellors, Vice-Chancellors, their Deputies, and Deans can move the

problem of student-cheating to the forefront of the educational-dialogue. This-willingness to direct attention to the negative and address student-cheating within the current-educational-system is the essential-precondition to strategic-planning.

Strategic-planning to combat academic-misconduct should be based on solid-theoretical-foundation, as poor, or absence of, theoretical-foundation makes it difficult to fully-comprehend and explain the devastating-cheating-phenomena.

Educational-research is a multidisciplinary-field (of cross-disciplinary investigation, from the disciplines of education, political-science, economics and sociology among others), where different-theories should work in synergy. According to Professor Peder Haug of Volda University College, to shed light on complex-issues, such cheating-behavior, one-dimensional theoretical-approach is not-sufficient. "In order to explain and understand that happens within the field of education, we probably need to be eclectic. We need to focus on the many-small-theories and build them up around the empirical-facts we have. We can't bring the large-theories down to the classroom".

As outlined above, theory has many-functions within the educational-sciences and educational-research. Theories provide predictions and explanations as well as guidelines for actions and behavior. Theories might provide a structured set of lenses through which aspects or parts of the world can be observed, studied or analyzed. Theories also provide a safeguard against unscientific approaches to a problem, an issue or a theme. By articulating underlying-assumptions and choices and by making them explicit and subject to discussion and by situating one's research within some theoretical-framework one might be protected from criticism. The third-way posits that theory also nurtures the ability for recognizing complexity. Theory serves as a protection against the triviality of "*empiricism*". Those-parts of science that have been overwhelmed by "empiricism" have been suffering accordingly. Empiricism as simply the recordings of individual-facts and with no apparatus of generalization or theoretical-framework leads nowhere.

Doing empirical-research without a firm-theoretical-basis is not only lazy-research; it can have detrimental-effects, as it produces baseless-conclusions and most-importantly, unjustified intervention recommendations. Theory is important for researches, as it provides: (1) a framework for analysis; (2) an efficient method for field-development; and (3) clear-explanations for the pragmatic-world.

In essence, the conceptual or theoretical-framework (is the application of a theory, or a set of concepts drawn from one and the same-theory, to offer an explanation of an event, or shed some-light on a particular-phenomenon or research-problem), and it is the "heart" of every-research-project. It determines how a researcher formulates the research-problem (so as study-questions are fine-tuned, methods for measuring variables are selected and analyses are planned), it also determines which particular methodology to apply in investigating the problem, and how to interpret the data accruing from such an investigation. Although the place of theory in different-research-paradigms may vary, still "theory" appears to be fundamental to all forms of research (Liehr& Smith, 1999). Building research upon theory is equivalent to incorporating all that is known from the current-literature theoretical, mathematical, empirical, and practitioner-research into a single, integrated-consistent-body of knowledge. For researchers, using a single-integrated-body of knowledge for analytical and empirical-testing gives the results a deeper theoretical-meaning by differentiating between the competing-theories.

Bolman& Deal (1997) remind us that there is a tendency to examine issues and organizations through one predominant-mental-model or lens. The habitual-lens allows focusing and responding routinely to issues according to readily-available-scripts or schemas. Unfortunately, relying on one-lens also restricts the ability to see the whole-picture and to consider the complexity of the issue. A researcher may rant that his/her research-problem cannot meaningfully be researched in reference to only one theory, or concepts resident within one-theory. In such-cases, the researcher may have to "synthesize" the existing-views in the literature concerning a given-situation-both theoretical and from empirical-findings. The synthesis may be called a model or conceptual-framework, which essentially represents an integrated-way of looking at the problem (Liehr & Smith, 1999).

Mixed-methods-research is an intellectual and practical-synthesis based on qualitative and quantitative-research; it is the third-methodological or research-paradigm (along with qualitative and quantitative-research). It recognizes the importance of traditional-quantitative and qualitative-research, but also offers a powerful-third-paradigm-choice that often will provide the most-informative, complete, balanced, and useful research results (as it considers multiple-viewpoints, perspectives, positions, and standpoints (always including the standpoints of qualitative and quantitative-research)(Johnson *et al.,* 2007). Whereas research based on deductive-reasoning makes use of a pre-existing theory, or theoretical framework, research based of inductive-reasoning tends to be "theory-building" (Imenda, 2014). "Good" theory-building research's purpose is to build an integrated-body of knowledge to be applied to many-instances by explaining who, what, when, where, how and why certain-phenomena will occur (Wacker, 1998).

With regard, to the major-purpose of this-research, this study offered an array of of 19 theories, 10 models and 3 supportive-approaches that are relevant to the cheating-behaviour. These were borrowed from disciplines such as psychology, sociology and organizational theory as well as theories, models and frameworks

that have emerged from within implementation-science. None of the theories presented are "supreme" or "grand"; although all presenting its unique-points of view; sometimes competing or even contradicting; they each have their-specific-limitations/boundaries and hence exact-restricted-applications, consequently almost all-theories have been rightfully-criticized, for example: (1) according to Niss (2006), a number of theories belonging to the humanities, social-sciences and education are *transcendental* (theories in which the concepts and claims are so-general and overarching that they do not apply in a straightforward-way to a specific, empirically well-defined world); (2) there is no such-thing as a well-established-unified "theory of education" which is supported by the majority of educational researchers. On the contrary, different-groups of researchers represent different-schools of thought, some of which appear to be mutually-incompatible, if not directly-contradictory; (3) many educational-researchers relate their-work to explicitly invoked-theories borrowed from other-fields (or at least from authors who belong to other-fields), and often do so in rather-eclectic or vague-ways. The use of "grand" theory or theories about the social-world as advocated by such-major social-theorists as Karl Marx or Michel Foucault, for example, raises further and different-issues for research-engagement; (4) much-discussion and debate within educational-research takes the shape of "battles" within and between theories. This could-potentially be fruitful to the degree that competing-theories offer different-perspectives on the same-thing, whereas it is potentially-unproductive, if not damaging; (5) quite few-educational-researchers have a poor-match between the theory they invoke and its relevance for their data set; and (6) all theories involve the simplification of complex-reality and different-theories simplify in different-ways (Mol& Law, 2002).

On the-other-hand, there are *now* so-many theoretical-approaches and also confusions, when a theory, for example, has so-many different-names, that some-researchers have complained about the difficulties of choosing the most-appropriate (Martinez *et al.,* 2014; Cane *et al.,* 2012; Rycroft-Malone& Bucknall, 2010; Mitchell *et al.,* 2010; Godin *et al.,* 2008; ICEBeRG, 2006). The major-aspiration is to facilitate appropriate-selection and application of relevant-approaches in implementation-studies and foster cross-disciplinary-dialogue among researchers. Researchers are faced with whether to find subtle-systematic-similarities or to explain deceptive-descriptive-differences between-individuals, organizations, businesses, industries, and countries. Fact-finding-research focuses on descriptive differences among data, while theory-building-research concentrates on the underlying-factors for similarities. Theory-building-research raises the abstraction-level by integrating subtle systematic-similarities across the descriptive-dimensions of individuals, organizations, businesses, industries, and countries. Consequently, from the standpoint of "good" theory-building, it seems that systematic-similarities are more-important than descriptive- differences.

Despite the "battles" within and between theories, the authors believe that the diplomatic co-existence of these-contrasting-orientations strengthens educational-research, since such-battles lead nowhere, it seems imperative to avoid them. The competing-theories also allow consideration of subject-matter through multiple-perspectives and thus each of these-perspectives suggests a reasonable-explanation of the cheating-phenomenon; therefore relevant-theories can be combined or several-different-theories can be integrated.

Combining or integrating several-different theories can generally be done in four-ways (Tellings, 2001): (1) *reduction* (means that one theory is re-defined in terms of the other theory or is subsumed under another theory), (2) *synthesis* (the integration of theories leads to entirely new-insights. The theories fertilize each other, new-ideas originate where the two-theories or models meet), (3) *horizontal addition* (is useful when different-theories or models cover different-domains in education, or when they cover different-aspects of one-domain, as for instance empathy-development and cognitive reasoning development, which might be viewed as two-different-aspects of moral-development), (4) *vertical addition* (theories or models are piled on top of each-other. The underlying-idea of vertical-addition is that different-theories or models describe different-stages or phases in a development).

For the domains of education with it multidisciplinary-character, horizontal-addition is especially promising and powerful, she argues.

Whilst diverse and sometimes conflicting, presented theories and models of behavior and behavior-change do provide some central cross-cutting-insights which can usefully inform players in the educational-sector as to how to promote sustainable-ethical-behaviors.

5. Conclusion

Integrity is so-essential to the flexibility, consistency, reputation, and overall-survival of higher-education that its dilution, or even-worse, absence, would lead to shocking-consequences to the future of higher-education.

To realize integrity-driven-education, the authors trust, academics need to conduct theory-based research to gain insights into why students do cheat, so to develop appropriate-well-justified and tested-approaches to break this relentless-habit, contributing, in its small-way, to the development of not only skilled and knowledgeable, but also moral-citizens and ethical-professionals.

To this-end, the study presented an array of 19 theories, 10 models and 3 supportive-approaches that are relevant to the cheating-behaviour. Since human-behaviour, such as cheating, is complex and the education-line

of work is broad; not only a single, but numerous-theories and models, should be utilized by combining or integrating several-different theories and models for academic-research at the micro-meso-macro-levels, to provide research of high-scientific-value, and in turn, inspire and inform organizational-change.

6. Aknowlegement

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