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# HOW CAN WE BEST PREPARE THEM FOR 2030?



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# Preparing Students For An Uncertain Future 21<sup>st</sup> Century Academic Forum CES 2018 Conference Proceedings

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# The Power of Consciousness & Illuminated Citizens of 2030 – Integrity, Success, Self-Actualization

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# Abstract

In the current reality of fading values, proclivities for short-term gains, and the society shadowed by unawareness, impelled by fear or veiled in inertia, a wake-up call to the renaissance of the code of ethics and the mobility of mind and spirit resonates across the globe. In anticipation of 2030 with the prospects of social changes, new job opportunities, omnipresent technological impact, but also the hidden maneuvers, the shell and crust of integrity need to be reverted and the threshold of the publicly unknown to be crossed. The paper navigates toward the bolt of consciousness and the ways to plant its seeds successively. The proposed direction is a viably aimed arrow to succeed on the cornerstones of integrity, a conscious mind, and active spirit, within reach of power and selffulfillment, which occur simultaneously beyond the social strata or politics, and irrespective of the cultural variables or financial constraints. With the Truth in the vanguard and marked by unwavering moral standards, it becomes natural for those conscious-minded to transcend negativity and uncertainty, to remain immune to murky temptations and unfazed by critical life events, to emanate with unflinching determination and intrepid moves when faced with the unexpected, and to find inspiration and to be inspiring, eventually with a clearly defined itinerary for success. With the consciousness research as the fulcrum of this paper, involving the kinesiologic (muscle) testing, the panorama of the current state of social awareness in the various employment sectors across America and Canada, compared with the international arena, will be displayed.

Keywords: Consciousness, Integrity, Success, 2030

#### Alicia Trembowski

#### Introduction

An all-pervasive crisis in today's world generates questions about the fate of humanity, the pathway to physical survival, security and emotional existence - in the lower layer of societal needs, and the road to success, abundance and good fortune - when in search of the higher pursuits of self-fulfilment. What impedes the right decision-making and turning projections into conception seems to originate from a series of commonly-recognized factors such as political conflict, economic recession or unfavorable personal circumstances like the family status, financial difficulties, precarious employment, insecurity and mental struggle. What remains obscure or equivocal to the public of less advanced perceptual penetration, nonetheless, becomes transparent and discernible for those on a deeper level of awareness. And the higher podium of awareness becomes, the more abilities to relinquish negativity and resolve pending matters present themselves.

A conscious citizen has access to manifold wisdom: responds rather than reacts, focuses on excellence instead of adequacy, becomes omni-competent and unerring in estimates or evaluations of situations, demonstrates a will to defy what is fallacious and detrimental, and overall, sparks a magnitude of grace, prosperity and wellness. A conscious mind distinguishes illusion from reality, replaces despair with hope and faith, and manifests strength, conscientiousness, and true grit. Passion accompanies actions and intention guides choices. Intellect yields to intuition and the way of light becomes the way of heart. Integrity synchronizes acuity with ethics and conviction.

The alarming state of global authoritative chaos, political propaganda, a policy of delusion in the media, indoctrination in education as well as deteriorating medical care, insufficient funds, and allurement of short-term gains makes the populace turn a blind eye to the essence of consciousness and deters it, rather than reinforces, from augmenting its awareness of the current state of affairs and the pathway to impact it. In all areas of life and professional domains, the seeds of deceit spread doubt, mistrust, and inefficiency, which effectuate - whether in business or relationships - in quality crisis, plunging satisfaction of service, and misjudgment, causing further strife and collapse. Led astray by illusion and superficial glamor, the populace falls into the abyss of falsity, become susceptible to manipulation and coercion, overlooking what is impeccable, valid, veracious and sterling.

Facing society's oblivion to the past mistakes and lack of vigilance in the wake of current malpractice and disinformation, Orwell's oracle (1949) appears to spell the reality of dormant awareness and the social malaise most accurately: "Everything faded into mist. The past was erased, the erasure was forgotten, the lie became truth" (p. 155). Nonetheless, as Bergson noticed (1907), "fortunately, some are born with spiritual immune systems that sooner or later give rejection to the illusory worldview grafted upon them from birth through social conditioning. They begin sensing that something is amiss, and start looking for answers. Inner knowledge and anomalous outer experiences show them a side of reality others are oblivious to, and so begins the journey of awakening. Each step of the journey is made by following the heart instead of the crowd, and by choosing knowledge over veils of ignorance".

What is the prime motive of this paper is to demonstrate what significance consciousness brings to humanity, and more precisely, how it uplifts and reinforces workforce representatives in their professional mission. What is the pragmatic necessity on the pathway to real success is invigorating power in the ambience of integrity and firm values, and indomitable spirits of individuals. A wake-up call to the nations and the consciousness rising vision, replacing illusion with reality and despondency with credence, is to be placed in sight on the horizon of 2030.

#### **Historical Perspective**

#### The Emergence of Quantum Physics

The epistemological and dialectic dilemma with regard to the nature of existence, the role of the mind and the concept of spirit have persisted over the millennia, with a plethora of philosophies sparking off a number of inquiries and tentative answers, leading to spurious arguments and inconclusive remarks about the nature of life, characterized by limitations in full comprehension of what realms we operate in. While the conventional materialistic worldview, supporting and guided by the laws of causation, excludes the possibility of existence of intuition and devalues individual mystical experiences, more advanced physicists do not perceive science as the ultimate expression of affirmed reality, and by transcending linear mechanics, they acknowledge the emergence of life beyond what the human intellect can embrace.

The struggle to reveal the "soul of science" (Lindlay, 2007) begins with quantum physics and non-deterministic theories in lieu of classic, predictable mechanics dominated by the Newtonian paradigm of reality. The physical universe manifests as an array of vibrations on a myriad of frequencies, which was first discovered by de Broglie (1924) who attributed the wave nature to electrons and asserted that all matter have wave properties. That the wave function collapses into one of many possible outcomes proves that the wave function itself is not material.

Heisenberg's uncertainty principle (1927), indicative of deprivation of the Newtonian elements of space and time, and confronted by Einstein' skepticism of randomness of hidden factors, probes arbitrary accuracy in an attempt to determine both the position and the momentum of a particle at the same instant. With Born's scientific advocacy (1926), who excluded the necessity of any casual explanation to comprehend mechanics, Heisenberg's formula gave rise to matrix mechanics transfiguring old quantum physics, and served as the foundation for Compton's (1935) two-stage model of free will, which assumes that human freedom affects quantum events.

The earlier premise to the above revolutionary approaches was Kant's (2004) "*a priori* knowledge" – sensing without experience, "concepts of the understanding", and "psychological freedom" - affecting spiritual conceptualization, as well as his 'noumenal' realm - set outside of space and time and guided by morality. This is tantamount to Descartes' mental world, *res cognitas*, where a mind is a symbol of liberty, featuring immaterial and indeterministic properties, in opposition to *res externa* – the actual reality.

The above discoveries bring conventional academic science to the conclusion that nothing is describable and comprehensible without the consciousness of the observer. The verifiable truth is the matrix of content, the point of observation, the intention and context, reflecting a paradigm (Hawkins, 2005).

#### The Pathway to Consciousness

The enigma of consciousness has been broached by researchers due to inferences in the quantum experiments and approached by philosophers, psychoanalysts, and psychiatrists in their treatises or clinical research from earliest times to the present day.

Jung (1969) crystallized the notion of 'collective unconscious', or universal thinking patterns, owing its existence to external factors 'present always and everywhere'. Earlier, Hubert and Mauss (1909) define these as 'categories of the imagination', akin to Bastian's (1860) 'primordial thoughts'. The content of collective unconscious is a repository of human experiences and knowledge and correlates to 'archetypes', the psychic counterparts of instinct, or formed

motive forces, which are hereditary potentials activated in consciousness upon a particular context on interaction with the outside world.

The dogmas of materialism that assume the physical attributes to all of reality, the world consisting of inanimate matter, and consciousness being the manifestation of brain activity only, has been challenged by Sheldrake (1981) whose sentient reality, "Conscious Self", affects the mind in event and activity selection and does not result from the prior formation process. It is simultaneous with the 'morphic', or quantum fields containing a cumulative collective memory of the past, obtained by self-resonance with a single morphic unit and by resonance with all previous similar systems. They attract the systems under the common influence pattern coordinating and integrating smaller units into the wholes. These invisible connections link the mind with the surroundings and that is how social bonds form and lead to telepathy and precognition.

That there is an inner coherence in all that appears incoherent led to the identification of so-called attractors, more or less powerful, of which "Butterfly Effect" became the hallmark of Lorenz's scientific achievement. It explains how a minor change in initial conditions affects a major shift in a later state. *The law of sensitive dependence on initial conditions*, defined as chaos theory, also adding support to one of many nonlinear theories, explains the process of evolution and creation, which underlies the study of consciousness. (Hawkins, 1995)

The existence of 'enfolded' and 'unfolded' universes, or so-called the Manifest and the Unmanifest which shifted the paradigm of the classical mechanics due to Bohm's (1980) scientific contribution, and Alexander's (2012) 'holographic universe', or 'a deeper fabric of existence' strengthen precognition and confirm the research of the previous quantum physics experts and the Consciousness advocates.

#### Levels of Consciousness

Despite many fruitful attempts to elucidate the mystic nature of the universe, it was Hawkins, a psychiatrist and a researcher, who made the study of consciousness and a science of Truth the epicentre of his life, which he devoted to the spiritual evolution of mankind. He defines 'consciousness', as the omnipresent energy field, the very core of all existence and of intelligence itself. "The universe, both subjectively human as well as physical, is an expression of the infinite potentialities of energy itself, i.e., the unmanifest becomes manifest as formless, primordial energy that then becomes the field of nonlinear consciousness, which itself is beyond form, time, or locality" (2005, p.10).

With the advancement of evolution, the frequency of energy has been rising correspondingly. The higher the level, the more radiation it emits, and the more beneficial and uplifting in its interaction with its surroundings it becomes. Powerful attractors are anabolic, or life-enhancing, whereas weak attractors, dominated by force, are the catabolic and life-deteriorating factors (1995).

Years of clinical research and the holistic approach to the human body contributed to the development of new discipline in science – *kinesiology*. It opened its gates with Goodheart's (1976) pioneering research on muscle-testing technique and his startling findings that the strength or weakness of the muscles is determined by exposure to either healthy or detrimental stimulus. This further became a stepping stone to Diamond's (1979) *behavioral kinesiology* who supplemented the study by adding intellectual and emotional stimuli beside the physical one.

Discovering that the energy of mind is the response trigger to the brain (Eccles, 1986), the chaos theory along with Lorenz' (1979) attractor patterns, and an investigation into the muscle technique became an avenue to Hawkins' consciousness research. As all aspects of life can be

measurable calling forth a positive (muscle-resisting) or a negative (muscle-collapsing) response (2001), the application of the muscle method led to classifying the energy fields on a logarithmic progressive scale ranging from 1 to 1000. The scale, called the *map of consciousness* (Table 1), delineates all expressions of existence, from the most primitive (1 - representing the level of bacteria) to the most optimal states of awareness (the great sages of this world), and is the spectrum of verifiable truth. Notably, only 22% of the world population exceeds the level of Truth and Power whereas the prevailing 78% lead their existence in the realm of Falsehood and Force (1995).

LEVEL	LOG	Emotion	Life-view	Process	
Enlightenment	700-1000	Ineffable	ls	Pure Consciousness	
Peace	600	Bliss	Perfect	Illumination	
Joy	540	Serenity	Complete	Transfiguration	
Love	500	Reverence	Benign	Revelation	
Reason	400	Understanding	Meaningful	Abstraction	
Acceptance	350	Forgiveness	Harmonious	Transcendence	
Willingness	310	Optimism	Hopeful	Intention	
Neutrality	250	Trust	Satisfactory	Release	
Courage	200	Affirmation	Feasible	Empowerment	
Pride	175	Scorn	Demanding	Inflation	
Anger	150	Hate	Antagonistic	Aggression	
Desire	125	Craving	Disappointing	Enslavement	
Fear	100	Anxiety	Frightening	Withdrawal	
Grief	75	Regret	Tragic	Despondency	
Apathy	50	Despair	Hopeless	Abdication	
Guilt	30	Blame	Evil	Destruction	
Shame	20	Humiliation	Miserable	Elimination	

Table 1 Map of Consciousness by David R. Hawkins (1995)

The critical points are denoted by the attractor fields at the juncture of 200, 500 and 700. The field below 200 encompasses destructive ego-driven survival instincts with the downward spiral of Pride, Anger, Desire and Fear, and the lower spheres of Grief, Apathy, Guilt and Shame, which even exclude the life motive. Constant stress, often in conjunction with chronic disease, and 'the fight or flight' syndrome characterize the condition experienced by a person. Comprehension is then confined by inability to discern truth from falsehood despite the mind still being prone to recognize and acknowledge facts. Egotism, aggression, manipulation, deceit, self-interest and exploitation are the core 'values' within this realm.

The critical point of 200, initiated by Courage, differentiates Power, the symbol of Truth, from Force - denoting falsehood. Moving up the ladder of 200, sequenced further by Neutrality, Willingness, Acceptance, Reason and beyond, transforms the vested interest into the well-being of others, increasing productivity, the quality of life, building integrity, and emergence of happiness and harmony, along with appreciation of beauty. Ascending through the level of Love, at 500, the recognition of humility, compassion and selfless service ensues. The state attracts more benign and fortuitous life experiences and makes a person emanate with exquisite and pleasurable sensations, which are also detectable by the observers in close or even remote surroundings. Level 600, demarcating the state of Peace, is the interface of the linear and the nonlinear dimensions.

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Level 700 plus is the pursuit of spiritual pathway, intellectual advancement, enlightenment, and self-improvement as well as a strong intention to bring the mankind to the power of truth and salvation, even at the cost of self-sacrifice. The state of illumination enables to reveal the very substrate of the core of truth, which is characterized by universal knowingness, top integrity and surrender (Hawkins, 1995, 2001, 2005).

#### Energy Fields, Workforce and Societal Problems

The state in which ordinary people operate is a reflection of the possibilities of their current level of consciousness which entails attitudes, motives, behaviors and consequences of their actions. (Hawkins, 2001) And "the content of the field is the consequence of the quality of the field itself" (Hawkins, 2005, p.158). Transcendence of the levels marks augmenting maturity, proneness to higher states of awareness, and finally spiritual evolvement with the priorities of others' welfare and benevolence to be pro-active, pro-human and in compliance with moral standards.

With reference to Hawkins' map of consciousness (1995, 2005), the lower levels of consciousness are associated with Force and Ego-dominance and they are imbued with either nostalgia over the irreversible or anxiety in anticipation of the future. Shame (calibration Levels 20 and below) is reflective of self-hatred and the loss of hope, which manifests by apprehension of failure, rejection ('losing face') and fascination with death resulting in low self-esteem, withdrawal, and depression - often - in paranoia. Guilt (Level 30) arises from the basic need of self-flagellation and self-abnegation, but it is also a positionality being trapped in the duality of 'perpetrator/victim'. Consequently, it is prone to provoke rage, cruelty, and vindictiveness, with attempts to project out the hatred, or masked blame, onto the others. Apathy (Level 50) is a state of deprived life energy, the abandonment of motivation, and inertia turned into sloth, resulting in unresponsiveness to any stimuli, denouncement of responsibility, seeking excuses instead of resolutions, and dependence on others. Grief (Level 75) is a descent into regret over a loss or the past to a lesser extent and a state of constant despondency to the prevailing degree. It is the product of seeking happiness 'out there' instead of 'originating from within'. Fear (Level 100) seeks traps, peril and drama at every angle of life, and it is expressed via exaggeration of the reality, projecting causes, panic and self-centeredness to gain attention. Stress, control and defense mechanisms lead to slavery of its own mind and discomfort of existence which, in turn, breeds a gamut of phobias and inhibitions, PTSD, obsessive-compulsive disorders, addictions and other morbid conditions. Desire (Level 125) is a harbor of insatiable wantingness and neediness manifested as an endless drive for materialism, hoarding, status, relationships and public attention. This pathology leads to chronic frustration, low self-esteem, obsequiousness, narcissistic disorders and addictions. Anger (Level 150) stems from either a constructive or destructive intention. On the positive side, it may upsurge those affected to take action against injustice, inequality and violence, which acts pro bono. Conversely, in its malignant form, it indicates resentment, aggression, strife, coercion and callousness, which on a larger scale, may result in propagation of hatred, extremism, and widespread maleficence, or even carnage. Pride (Level 175) is the tiptop of the Ego-stimulated dimension, but as it "goeth before a fall", the internal qualities of this field are vulnerability to deflation and dependence upon external factors, whose unexpected absence can bring those with Pride at the helm to any lower level. The level comprises the inflated sensations of superiority, specialty, exclusivity and vanity. A person susceptible to Pride, displays oversensitivity, intolerance, hubris, and attempts to discredit its targets by dint of sarcasm, ridicule, slander and triggering litigiousness.

The energy fields above 200 are the onset of empowerment where malice and destruction are exchanged for benign and constructive behaviors. It is also the dimension where the qualities of the linear mind emerge, welcoming the tenet that "the word (ideology) is mightier than the sword" (force). Courage (Level 200), equipped with strength to face challenges and overcome obstacles, relinquishes anxiety and fears, bringing balance, self-honesty, and social responsibility. Reactiveness is swapped for contemplation and an alignment with integrity begins. Neutrality (Level 250) is characterized by equanimity and non-judgmentalism, where propensity for intimidation and confrontational situations diminishes. Willingness (Level 310) is demonstrated by responsiveness to the needs of others - thus commitment to volunteering and a great sense of sympathy, but also, capacity to handle personal issues - like bouncing back from adversity and learning through trial and error. This field attracts prosperity and supportive feedback according to 'like goes to like'. Acceptance (Level 350) is the state of realization that happiness 'comes within' rather than it depends on external factors. Experience allows to perceive the world the way it is as emotionality no longer defines feelings. Reason (Level 400) begins a major transformation where logics and intelligence along with apt conceptualization and comprehension come to the centre of the stage with "accomplishment crowning the work". Those within the attractor field are effective decision-makers, complex data analysts, theorists and experts of any domain, like medicine, science, and academics in general. It is the zone of top professors, genius engineers, excellent doctors, and other stellar professionals. The pitfall of the field, however, is inability to distinguish Descartes' symbols (res cogitans) from what they represent (res externa) as 'knowing about' is not tantamount to actually 'being'. Paradoxically, focus on intellectualizing, seeking confirmation, and ignorance of the essence impedes the pathway to higher consciousness levels. That which is 'provable' does not exceed the dimension of 400s and is based on the abstract paradigms as the dualistic intellectualizations separate subject and object which eventually confronts all tautologies in their approaches to truth.

It is only by transition from the abstract to the experiential, and from the supposedly objective to subjective that the revelation of universal knowingness occurs (Hawkins, 2005). And this is achieved by entering the energy spectrum of Love (Level 500) which, apart from capacity of unfolding the truth, progressively expands the sense of self. As Love no longer pressures for dominance and is resistant to egocentricity, hence emotionality and sensitivity to attacks, it proclaims stability, nurtures life and 'finds' happiness. In the dichotomy between a passion and an authentic feeling, Desire is frantic, inflated, erratic, and fearful, causing insatiable craving, frustration, and often impaired judgment or emotional imbalance. On the contrary, Love revolves around well-being, self-fulfilment, completion, gratitude, and tranquility. Experiencing loss in either case differentiates both conditions alike. Losing a target of attraction results in rage, hate and blame whereas experiencing the abandonment of Love manifests as grief, regret and silent longing. Whereas the demarcation point of Love is 500, Unconditional Love, or Joy (Level 540), transitions the former to a more advanced state of awareness and spiritual charisma. The persons within this field of influence emanate the aura of grace, kindness, compassion as well as the purity of intention, patience and humility. Radiance, confidence and capacity of a prolonged, open visual gaze make them stand out from the crowd. In a diagnosis of a true spiritual state versus a pathological one, also characterized by the apparent ecstatic state, the analogy shows that the authentic state of high consciousness evokes illumination, inspiration, vision, commitment, devotion and spiritual sharing, while the pseudo-spiritual state exhibits grandiosity, imagination, hallucinations, obsession, scrupulosity along with zealotry, and proselytizing, with attempts to control others. Peace (Level 600) is a rare state of illumination that no longer confines those

transcending it by the ego, causality, or falsity. The observer and the observable become the same, the mind is still and the world seems to be perfect and complete on its own right.

Enlightenment (Level 700) is the state of Pure Consciousness, and Self-realization where the life autonomy, the effulgence of Truth and the surrender of Ego occur simultaneously. It is the state of extremely powerful high-frequency waves, hyperactive sensations and immense telepathy, but also a breakdown of communication with the others as the channel of comprehension and interaction requires inner translation and alignment with the same field of awareness, which is still unique to many (Hawkins, 2006).

Consciousness research conducted in America (Table 2) illustrates the correlation between the energy fields and common problems the society struggles with on the national level such as the rate of unemployment, poverty, the "happiness" indicator and the percentage of criminality. It is quite transparent that the higher the level, the lower negative impact and the higher life satisfaction, and reversely. The demarcation line of 200 clearly marks a sudden leap from the zone of catabolic and impaired awareness to the anabolic and invigorating realm of power. For those between Courage and Peace, the status of life significantly ameliorates as evidenced by the findings of only 0-8% in the area of unemployment, just 0-1.5% still experiencing poverty, and 0-9% being involved in the criminal activity, but an overwhelming 60-100% manifesting a radiant attitude to life (Hawkins, 2005).

Level	Unemployment	Poverty	"Happiness"	Criminality
600+	0 %	0 %	100 %	0 %
500-600	0 %	0 %	98 %	0.5 %
400-500	2 %	0.5 %	79 %	2 %
300-400	7 %	1 %	70 %	5 %
200-300	8 %	1.5 %	60 %	9 %
100-200	50 %	22 %	15 %	50 %
50-100	75 %	40 %	2 %	91 %
Below 50	97 %	65 %	0 %	99 %

Table 2 Distribution of Consciousness Levels and their Correlation with Societal Problems (2005)

#### Methodology

To unfold the truth and/or discover the consciousness level of a human being, an animal, a place, entities of the inanimate world, historical figures and events, uttered declarative statements, and other phenomena of any kind, one needs to perform a procedure involving the muscles, called the *kinesiologic* test. As mentioned before, the experiment stems from the work of Goodheart (1976) and Diamond (1979), both of whom observed the muscles weaken or go strong in the presence of either inimical or benign stimuli respectively.

The testing technique to verify authenticity of the current energy level, called *calibration*, is to make a series of statements and utilize the arm-strength response. It takes two participants to perform the procedure: a subject and a tester. While the former stands erect with his left arm held out parallel to the floor and the right arm hanging down, the tester's role is to pose questions, or make declarations, following which the test subject's wrist is pressed down with two fingers. If the wrist stands firm, the indication is confirmation of Truth. If the arm collapses, Falsehood is evidenced.

That which is in concordance with spiritual Reality becomes recognized by the field of Consciousness and validated by the consciousness research which prompts the muscle to resist the strength of applied pressure. The absence of Truth is discerned by the Unmanifest which deprives the muscle of energy making it fall. The category that the tester inquires about can be visualized or silently held in mind, but also expressed verbally. Under some circumstances, the subject's role is to provide the answers of binary nature, either YES, or NO. But, under the other, the subject can remain silent as the responses are indicated by his muscle reaction and triggered by the specific questions with regard to suggested calibrations.

For accurate results, it is indispensable that both persons performing the muscle test possess a high level of integrity and they are guided by the purity of motive rather than they attempt to validate their standpoint and confront the projected outcomes. The test procedure is universal and allows for replicability of results if the following conditions are met:

- 1. The calibration level of both a tester and a subject exceeds 200 (the higher the field represented, the more accurate findings).
- 2. The intention for the use of the test is integrous.
- 3. Expertise of the procedure is present.
- 4. The answers are impersonal and do not hinge upon the belief systems of the participants.
- 5. A tester and a subject are devoid of skepticism (the calibration level 160).
- 6. A safe, secluded space is provided to perform the test without acoustic or visual distractions.

#### **Research Objectives**

The study intends to examine the current level of consciousness of the professionals of public domains in selected countries across North America, Europe and Asia. The workforce comprises the Government (Federal) Administration, the Cross-country Administration (on the state, provincial, or district level), the Judicial System (including Judges, Prosecutors and Defence lawyers), Health Care (Traditional and Holistic practitioners plus Nurses), and Education (teaching and academic staff across the tertiary system of education). The selection of eleven countries for the purpose of the consciousness research below includes: USA, Canada, Great Britain, Germany,

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France, Russia, China, Japan, Poland, Israel and Scandinavia in general, averaging the results of its four territories: Denmark, Finland, Norway and Sweden. The author's previous study which showed the approximation of results in the investigation of each of the particular countries of Northern Europe led to narrowing down the testing procedure and relating only to Scandinavia as a general representation of all its inclusive states.

The muscle, or kinesiologic method was applied to performed calibrations and the Map of Consciousness was used as a reference tool to determine the energy field of a given entity with a view of demonstrating their level of integrity and alignment with Truth. This further provides deeper implications with regard to the condition of functioning and the hierarchy of principles manifested by various occupations on the global scale. In the end, the response is obtained to the question of WHO is in charge of the present, most reputable decision-making institutional bodies, and HOW it will impact the quality of life and the code of ethics of future generations - the citizens of 2030 in particular.

#### **Collection and Interpretation of Findings**

The initial stage of inquiry into the consciousness level focused on the domain of Government Administration (Table 3). The highest level - at 370, denoting Acceptance, was attained by Poland, and the lowest one - at 260, or Neutrality, is represented by Great Britain. Interestingly, USA, Canada, and Germany prove the same energy field of 305, which along with Great Britain still does not exceed Neutrality. Israel is the only country, next to Poland, demonstrating Acceptance (Level 350).

GOVERNMENT ADMINISTRATION			
COUNTRY	Level of Consciousness		
USA	305		
Canada	305		
Great Britain	260		
Germany	305		
France	300		
Russia	300		
China	300		
Japan	300		
Poland	370		
Israel	350		
Scandinavia (Denmark, Finland, Norway, Sweden)	300		

Table 3 Calibrated Levels of Consciousness for Government Administration

The next analyzed category was Administration on the state, provincial or district levels (Table 4). As shown below, Israel has the highest calibration outcome at 335 – Willingness, the level shared with Poland again, this time at 320. Russia and Great Britain display the lowest result, at 201 and 220, which is the dimension of Courage. All the remaining countries occur on Neutrality, stretching from 275 to 300.

CROSS-COUNTRY ADMINISTRATION			
COUNTRY	Level of Consciousness		
USA	300		
Canada	275		
Great Britain	220		
Germany	285		
France	275		
Russia	201		
China	285		
Japan	270		
Poland	320		
Israel	335		
Scandinavia (Denmark, Finland, Norway, Sweden)	275		

Table 4 Calibrated Levels of Consciousness for Cross-Country Administration

The collected data on the Judicial System (Table 5) uncovers that the most conscious Prosecutors represent Israel (Level 355) - Acceptance, along with Japan (Level 345), and Great Britain (Level 340) placing both latter within the realm of Willingness. When it comes to Defence attorneys and Judges, Japan ranks the highest, at 400, as the only country attaining the level of Reason, with Israel right behind it at 398 and 370 respectively for each sector. Great Britain and France have a relatively high level of 350 for Defence, while USA and Canada obtained the identical outcome for Judges, which puts all of the above in the sphere of Acceptance. The lowest field in all three categories of the Judicial System fall on Russia – Courage (Level 200).

JUDICIAL SYSTEM					
	Levels of Consciousness				
COUNTRY	Prosecutors	Defence	Judges		
USA	300	305	350		
Canada	300	335	350		
Great Britain	340	350	310		
Germany	270	240	280		
France	320	350	310		
Russia	200	200	200		
China	300	305	305		
Japan	345	400	400		
Poland	305	345	300		
Israel	355	398	370		
Scandinavia (Denmark, Finland, Norway, Sweden)	305	320	290		

Table 5 Calibrated Levels of Consciousness for the Judicial System

In the domain of Health Care (Table 6), the top levels achieved for Traditional practitioners include Israel -400, China -395, Scandinavia -380 and Great Britain -370, which is the calibration of Acceptance, except for Israel - representing Reason. With regard to Holistic medicine, the professional excellence is confirmed again by Israel with a slightly higher level of 420, and the same top countries as in the conventional medicine, with a much higher result shared by all three nationalities, which is 400 - the dimension of Reason. The distribution of the best nurses is evidenced in China -380 (Acceptance), Israel and Japan -335, plus Poland -320 (Willingness).

HEALTH CARE					
	Lev	els of Consciousn	ess		
COUNTRY	Traditional Doctors	Holistic Doctors	Nurses		
USA	310	350	250		
Canada	285	350	250		
Great Britain	370	400	309		
Germany	320	349	260		
France	320	370	310		
Russia	340	300	300		
China	395	400	380		
Japan	340	380	335		
Poland	300	340	320		
Israel	400	420	335		
Scandinavia (Denmark, Finland, Norway, Sweden)	380	400	295		

Table 6 Calibrated Levels of Consciousness for Health Care Practitioners

The final sector that underwent the calibration technique was Education (Table 7). Strikingly, although the academia members on average achieve the highest calibration level of 400 in Israel, the elite university representation is found in Poland where full-professors achieve level 430. The other leading universities include Japan - 370 as well as USA, Canada and France – all of whose level remains at 350 and represents Acceptance. Besides Poland, the other top full professors are employed in Israel – 420, USA and Russia – 405, as well as Canada and Great Britain – 400, which is Reason. For Colleges, the top teaching experts are hired in Japan – 350, Israel -340 and Great Britain – 335. The most efficient high school teachers are represented by Poland - 350 (Acceptance), Israel – 330 and Japan – 325 (Willingness for both latter). In the Elementary educational sector, Israel and Poland attained the highest calibration of 320 and 310 (Willingness).

It is a perplexing fact that there is a huge discrepancy in the obtained results for Poland where the astounding level of 430 was the outcome for the full professors whereas the remaining staff in the same educational body did not exceed 270. Another astonishing finding is a relatively high energy level of USA and Canada (350-315/310 – Acceptance/Willingness), France (350-300) and Russia (310-300) in the area of academic and high school education, but a sudden drop in quality (250 - Neutrality) for all the above nationalities when it comes to Elementary schools. The lowest standards in education across all educational institutions except for universities were found in China (300-220).

EDUCATION					
		Levels of Co	nsciousness		
COUNTRY	UNIVERSITY (Full Professors)	COLLEGE	HIGH SCHOOL	ELEMENTARY	
USA	<b>350</b> <sup>(405)</sup>	315	315	250	
Canada	<b>350</b> <sup>(400)</sup>	310	315	250	
Great Britain	<b>315</b> <sup>(400)</sup>	335	320	300	
Germany	<b>300</b> <sup>(370)</sup>	300	280	250	
France	350 <sup>(370)</sup>	310	300	250	
Russia	<b>310</b> <sup>(405)</sup>	310	300	250	
China	<b>300</b> <sup>(385)</sup>	290	245	220	
Japan	<b>370</b> <sup>(380)</sup>	350	325	305	
Poland	<b>270</b> <sup>(430)</sup>	320	350	310	
Israel	<b>400</b> <sup>(420)</sup>	340	330	320	
<b>Scandinavia</b> (Denmark, Finland, Norway, Sweden)	<b>320</b> <sup>(385)</sup>	300	300	285	

Table 7 Calibrated Levels of Consciousness for Educators

#### **Research Implications**

Alignment with Truth and Integrity can be measureable and this process is obtainable via the kinesiologic, or muscle procedure. The collected database of consciousness levels across the globe in the selected employment sectors listed above displays a spectrum of values that the particular professional groups are guided by, which has staggering implications for society and pragmatic applications for employability prospects. Positively, the findings revealed that all the calibrations eclipse the destructive zone of Force and Falsehood as none of the tested categories fell below 200. On a vigilant note though, it does not escape notice that very few entities surpass the level of Reason, and there was no case found to indicate the transcendence of the critical point of 500 denoting absolute Power, which is Love.

As the study outcomes indicate, the spectrum of common levels for most of the countries listed above covers those ranging from the first life-supporting energy field of empowering Courage, to revolving around abstract categories and attempts to comprehend facts, Reason. Notably, in the world seen through the eyes of the Courage-propelled person (Level 200), everything seems challenging and stimulating but feasible as the dominant emotion is affirmation. The professionals under its influence progressively become productive and in return their

accomplishments bring them self-reward and higher self-esteem. The jobs based on interaction with others (teachers, or nurses) can be satisfying and motivating enough for the persons calibrating on this dimension.

Occupying the level of Neutrality (Level 250) entails developing satisfaction and trust as well as more flexibility in problem-solving and less rigid attitudes to reality. On the other hand, as Neutral people do not manifest the will to control others, they are hard to exert control on alike. This can be an advantage for the teaching profession where educators are responsible for disseminating information in an efficient manner and they should be given full liberty to do so according to their conscience.

Willingness (310) promotes the win-win attitude and care for trust in the social circle. The contribution of professionals impacted by this field is tremendous as they display a magnanimous, noble and chivalrous demeanour reinforced by appreciation and recognition in their environment. This energy field is invaluable for positions held in the judicial system where the ultimate goal in legal proceedings should be the welfare of those in a more vulnerable standing rather than financial gain.

In the context of Acceptance (Level 350), happiness and harmony begin to shine from within, which becomes extremely vital for the motives of actions taken. That is the stage when long-term goals are prioritized over short-term ones and meticulousness along with mastery take primacy of place. This field dominance might be of great relevance to the medical occupations where precision of diagnosis and an accurate projection of treatment predetermines recovery and might affect someone's lifespan.

Reason (400) highlights knowledge and education as utilizing information is considered the main tool of achievement. It is beneficial to have Reason-oriented specialists in a technical world where massive amounts of data need to be processed and logics dominates, but as indifference to context and subjectivity are the downsides of this field, dealing with discrepancies in the material presented might be a challenge unless the level of Love is transcended. This is a highly desirable level for scholars, analysts, and surgeons, but also those in charge of the direction of the economy and administration on a national and international level, where crucial decisions impact the entire society worldwide.

#### Conclusion

As previously stated, people congregate according to the same attractor patterns and are attuned to the same system of values, objectives, and code of aesthetics. What should be the top factor in a hiring process is the integrity level of an individual or a professional group, with a cursory glance at the origin where the culture and environment might contribute to shaping a person's alignment with constructive (powerful) or destructive (forceful) motives, belief systems, and consequently their conduct in a professional (and personal) context. As generalizations may sometimes blur the quality and value of an individual presenting on his own behalf, the testing procedure is recommended at least on a micro scale of employability.

While the levels below 200 make people incapacitating or hyper-aroused, judgmental, megalomaniac or controlling, it is not difficult to draw conclusions that their presence in any work environment will be hindrance that limits not only their own possibilities but also those in their surroundings. Conversely, a person equipped with harmony, pure intentions, interest in others' well-being, and following the bright side of life with open-mindedness and honesty at the helm, will be of a huge benefit to the internal environment of co-workers and superiors, but also to the external clientele including the society as a whole.

#### Alicia Trembowski

The world needs heroes – not those who 'hit harder' but those who 'impact stronger'. Power is not about authority manifesting as demonstration of rank, prestige, popularity, grandiosity, dictatorship, defiling of others, claiming credit for dominance, relying on munition or troops, armed with pride and greed. This is Force – the level of havoc, misery, limitations, hidden fears and low self-esteem. Power is about speaking for Truth, setting goals, demonstrated excellence, confidence, nobility and appreciation of beauty, where Dignity replaces Pride and Integrity stands in lieu of manipulation, duplicity and the lose-win dichotomy.

Those conscious-minded are indomitable individuals and unswerving professionals. Their integrity shines forth through thoughts, intentions, actions and interactions. While Force only casts a shadow of apparent success, based on the pecking order, image-creation and a prerequisite of subservience and obedience, Power illuminates permanently - leading to autonomy, loyalty, inspiration, achievement, joy, and self-fulfillment.

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# Active Learning Strategies in Mathematics and Science

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#### Abstract

As students and teachers the diligence of education is learning. In the education system, mathematics and other theoretical sciences are often taught exhibiting lecture design which stimulates apathy and solitariness in students. In this study, we have discussed certain alternative teaching methods, including cooperative learning in small groups, essay writing assignments about technical topics and engaging in some events related to mathematics and science. The importance throughout is on getting pupils to participate more, interact more and extend their standpoints. These methods can reinforce students learning and attainment in science and mathematics to nurture student's confidence in their aptitude to do mathematics and science and increase the diversity of science and mathematical community. Professional societies and funding agencies can take the responsibility to give the support of training and resources for the use of active learning. I hope that the ongoing modernize curriculum and pedagogy will lead to more meaningful science and mathematical experiences for both students and teachers by implementing active learning methods.

**Keywords:** Active learning, Education system, Teaching methods.

#### Introduction

In today's complex world, people must learn to apply tools and knowledge in new domains and different situations. People would also be creative and dynamic problem solvers at every organizational level (Lynton, 1989; Resnick, 1987; Nickerson, 1988; Bransford, Goldman, & Vye, 1991). It is important to have the ability to apply experience and knowledge to address novel problems. Subsequently, this is required to promote higher level skills like: critical thinking, applying, analyzing, evaluating, synthesizing to solve technical, social, economic, political, and scientific problems, and work in groups industriously those are vital skills for prosperous and pleasing participation in the modern and competitive society. Education is getting cumulative stress from changing the global economic circumstance and intricate societal necessities (Grabinger & Dunlap, 1995). The challenge for educationalists is to exploit strategies and teach content in ways that also assist in improving thinking, problem-solving, metacognitive, and lifelong learning skills (Bransford, Sherwood, Hasselbring, Kinzer, & Williams, 1990). The society, country as well as all over the world the requirement to know ourselves and changing ourselves according to how we are positioned within environments in which we find ourselves. The personal knowledge as identity is often not recognized in mathematics classroom; however, the constructive disciplinary knowledge is crucial as it influences the degree of potential engagement along with stated content and learning technique of the mathematics classroom.

It is stated that mathematics and science are the most important tools in the development of goals in education. There should be a deliberate strategy for stimulating and inspiring the enlargement of native knowledge and the application of such to local development to achieve the goals (Akase Jir, Mwekaven, Awuhe, & Tombuwua, 2015). Mathematics is known as basic science or knowledge-based supports of all subjects. It is well known that the role of mathematics is the key to the success of national development and supported by the evolution of science and technology.

Undergraduate mathematics students develop abilities to think scientifically and logically. This work sought to illustrate and enlighten the elements of active learning in mathematics and science along with the fundamentals theory and instructional policies to make a common ground for discussion. The beauty of this learning is to depend on the continuous collaborative process, such as active engagement, participation in the classroom, collaboration with classmates, lecturing in the classroom, and personal relevance. The instructor would be responsible for creating the procedure of building and reshaping understanding as the natural consequences of their experiences and trustworthy interactions with the world (Goodman, 1984; Forman & Pufall, 1988; Fosnot, 1989).

#### Essential for educational modification

Teachers and students are responsible for updating the undergraduate education. Even the higher authorities of college and university, and university grants commission (UGC) would take responsibility for improvements. This is a joint project. Faculty members and administrators have to think as educators that have been following shared goals.

#### Interaction between faculty and students

The rapport between teachers and students are very important for the success of students. There are some ways to support diverse learning styles by using different activities such as using examples that are relevant to student knowledge and experience, encouraging students to ask questions – both during the class as well as at the end, asking students to explain their understanding of the concept to the classmate sitting next to them – teaching is an effective means of learning, doing problem solving exercises individually or in groups – applying a concept, and finally, reading key points from a book to break up the monotony of class lectures.

#### Evolve exchange and collaboration among pupils

Research has shown that collaborative and social activities are characteristics of good learning (Fosnot, 1989; Henry, 2010). They encourage students to join at least one activity that helps them to get to know one another, it is important to follow- up with student's engagement in class - listening, and active participation, inspire learners to participate in groups to be prepared for the exam and working on assignments, arrange projects and presentations in groups, and operate peer educating.

It is important to note that students need proper feedback on their performance for learning better. It is required to have proper opportunities to perform and receive suggestions for enlargement of students learning within the classroom. Learners need to know the reflection, what they have acquired, what they still essentially need to know, and how to evaluate themselves. Teachers would do well to provide instructive comments on student's discussion and give suggestions to overcome their errors, explain assessment techniques, such as – quizzes, assignments, tests, presentation, discuss the problems of assignments, quizzes and tests in the class and with individual students, return grades for quizzes, assignments and tests, and provide a question and answer session in every class.

# Respect the talents and techniques of learning

Students must have the chance to show their talents and learn in ways as per choice. There are various ways to learn, and no two humans follow the same way. Students have several talents and learning modes in the classroom. Therefore, teachers should inspire students to speak up when they do not understand, practice different teaching methodologies and techniques to address a broad range of students, provide additional material or activities which do have a lack of sufficient knowledge or skills, and give a problem to solve that has multiple solutions within the classroom. Guide students with clues and examples.

# Engage in active learning

Active learning was first defined by Bonwell and Eison (1991). Active learning responds traditional lecture formats with more activities that invite students to participate in learning, developing conceptual awareness, applying knowledge, experience, and transferring skills across contexts and usually connect with comprehensive teaching. It is empirically shown to reducing the acquisition gap for underrepresented minorities and first generation undergraduate learners, especially in STEM grounds to reach "a diversity of pupils"; and to shape "higher- order thinking skills" across involved students (Bonwell & Eison, 1991; Freeman et al. 2014).

# Why Active Learning?

The earlier literature shows that when the material is delivered using a single method (i.e. students are passively listening) their concentration limit is between 10 to 20 minutes, a small fraction of a lecture. Passively listening of a lecture is suitable at promoting learning at the lower end of a taxonomy of learning such as: 'remembering' and 'understanding' – but it is not as good at stimulating higher-level skills like 'applying', 'analyzing' synthesizing, and 'evaluating'. While all of the above types of learning are vital and build on each other, higher-level critical thinking

skills are integral part of the study. Delivering mode: lectures, where students listen rather than interact, are not good at promoting higher-level learning and skills. Students are reluctant to continue their studies in mathematics and other STEM disciplines (Hsu, Murphy & Treisman, 2008). Students who intend to enter STEM fields face integral barriers to success in our current mathematics education system, barriers that will likely remain for the near future [16]. Improve the class environment by stimulating interconnections between students, which can enhance the sense of belonging and motivation for marginalized students and those with differing levels of academic preparation.

# Types of Active Learning

#### Think-pair-share activities

Students work individually on an active learning or formative assessment activity (such as problem solving). They then compare their responses with a partner and synthesize a joint solution, and share with the entire class.

#### Pair summarizing/checking

One student can explain the concept. Classmates can listen and provide constructive feedback.

#### Large-Group Discussion

Pupils discuss a specific context in class based on a reading, or problem solving.

#### Inquiry Based Learning:

The instructor presents a major concept and then asks students to make observations.

# Problem creation

Each student poses a problem about a concept. They then exchange problems with a classmate and solve.

# Peer Review

Students complete individual homework, assignment or short paper. Before the deadline, students submit one copy to their partner or group, and then provide critical feedback of each.

# Weaknesses of current education system

Recent researches show that students are not particularly strong in their thinking and reasoning ability (Resnick, 1987; Bransford, Goldman, & Vye, 1991). Conventional systems regularly apply basic and de-contextual instances and problems that lead to an insufficient understanding and capability to execute the acquired knowledge. Apart from the above illustration, several issues are very important namely, the lesson plan and adaptation must favor the standpoint of the learners, student's reasoning should be monitored and execute various formative assessment methods, instructors need to use different ideas depend on situation and contents, the instructor has to have better quality to understand student's psychology, students have to write/copy from class by hand rather than only see from power points for mathematics, and for instructors, it is very important to know formative assessment techniques and practical application in undergraduate mathematics - identify misconceptions of potential students and planning to solve those misconceptions.

Instructional Resources

The primary instructional resource is a textbook, mathematical skills and concepts. Also, a practice set of tasks to be completed as homework, and personal and circumstantial factors of instructors influence the assessments and activities include the instructors' prior experiences, beliefs about teaching and learning, available resources, opportunities pronounced in the curriculum, norms of the department, among other factors.

### Educational Goal

The objectives of a mathematics program are the requirement to cultivate a well-balanced foundation in mathematics content having an in-depth understanding of elementary principles to understand mathematics desired for our rapidly changing technological society and to place emphasis on how to design the best and most effective curriculum and ways to deliver this curriculum. Moreover, as per the demands of the 21<sup>st</sup> century, it is required to produce Ph.D. graduates who can become the leaders of the educational community concerning the teaching of mathematics. It is also important to produce high-quality teachers of mathematics at all levels.

# Research Design and Methodology

#### Participants

The participants were students of BRAC University enrolled in the course MAT 110 (Differential Calculus & Coordinate Geometry), MAT 120 (Integral Calculus & Differential Equations), and MAT 216 (Linear Algebra & Fourier Analysis) in the first; third; fifth and sixth semesters of Fall 2018. A total of 150 students (108 males) completed the survey with the prescribed questionnaire. Of these, 122 came from Computer Science & Engineering, 20 from Electrical & Electronic Engineering and remaining from other programs.

# Results

**Table:** Students response to each question using a five- points scale (Legend: SA – Strongly Agree; A – Agree; N – Neutral; D – Disagree; SD – Strongly Disagree):

Sl	Question	SA	А	N	D	SD
1.	I would learn math better if I try hard.	103	43	3	1	0
2.	Natural (inherent, inborn) intelligence is required for being good in math.	12	21	21	47	49
3.	When I learn a new object in math, I try to relate what I already know rather than just memorizing the new way how it is presented.	51	77	17	4	1
4.	If we engage with other activities, we can learn more and open our minds rather than studying only notes.	74	64	12	0	0
5.	I think student's involvement is more important than delivering lecture.	76	68	6	0	0
6.	The topics should be reviewed after being discussed; these learning activities help us to learn more, enable us to interact more.	74	69	7	0	0
7.	It is important to cooperate with classmates, learn from peers, and see how much we know.	78	59	12	1	0
8.	As a student, if you guide your peer to solve their problems as a spearhead it would be inordinate key for your learning.	58	80	6	0	0
9.	If instructors give a different way to study other than just reading through the notes, it would be a better learning technique.	74	62	11	2	1
10.	If the classroom is interactive, and the instructor helps us to learn better, the class does not get monotonous.	73	63	13	1	0
11.	Students should involve several course-related activities, for instance- assignment, presentation, etc.	55	72	15	5	3
12.	I like power point presentation than board-and talk delivering lecture in math.	4	6	17	68	55
13.	In active learning getting involvement as analyzing, synthesizing, and evaluating- I think active learning is better than traditional learning.	80	64	6	0	0









The above bar chart and pie charts show that 69% of the students strongly agreed, 29% agreed and 2% were neutral whereas no single student disagreed and strongly disagreed with the statement "Students learn mathematics better if they try hard."





Fig. 4

The responses for the questionnaire "Natural (inherent, inborn) intelligence is required for being good in math" is displayed in Figures 3 and 4.





The result of students' opinions on "When they learn new object in math, they try to relate what I already know rather than just memorizing the new way how it is presented" is shown in Figures 5 and 6.



Fig. 7

Fig. 8

49% and 43% of the students strongly agreed and agreed respectively with the statement "If we engage with other activities we can learn more and open our minds rather than studying only notes".





The report of questionnaire "student's involvement is more important than delivering the lecture" is presented in figures 9 and 10.



Fig. 11

Fig. 12

The result on student's view "The topics should be reviewed after being discussed; these learning activities help students to learn more, enable to interact more" is demonstrated in figures 11 and 12.





The survey on "If instructors give the different way to study other than just reading through the notes it would be better learning technique" is illustrated through bar chart and pie charts.



Fig. 15

Fig. 16

The above pie and bar charts reflect the pupils thought "Students should involve in several course related activities, for instance- assignment, presentation, etc".





Figures 17 and 18 show the students responses on "Pupils like power point presentation than boardand talk delivering lecture in math".



Fig. 19

Figure 19 discloses the comparison between male and female students about their opinion. Whereas 26% of the female students strongly disagreed, 55% percent disagreed and no female strongly agreed with the statements.



Fig. 20

Fig. 21

In active learning, getting involvement as analyzing, synthesizing, and evaluating- learners think active learning is better than the traditional learning which is demonstrated in figures 20 and 21.



Fig. 22

Fig. 23

Figures 22 and 23 indicate the comparison of the opinion of girls and boys. No boys strongly disagreed and disagreed, but fifty five percent strongly agreed with above statement.

#### Conclusion

Students are very smart and busy with many activities. For attracting their attention in study, we should think about how to deliver the lecture. Depends on student's quality and their thinking it is required to collect some questionnaires. As per the survey report and illustrations from pie charts and bar charts, we can conclude that students love to learn from the board rather than power point presentation for mathematics. Pupils also like their involvement in class; they prefer active learning technique to learn better.

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# Preparing Students for the Future by Cultivating Mentor-Seeking Attitude

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#### Abstract

In the digital age, students are aware of opportunities and possibilities available at their fingertips. Their ease with technology should be garnered by encouraging them to seek mentors. As early as high school level, students would benefit from being prepared to seek mentors from their field of interest. This early mentor seeking would train them to recognize their own requirements using critical thinking based on need-based analysis to prepare them for future jobs and handling job related issues by pinpointing mentors most helpful for them. The paper presents a Career Mentoring Model for Youth to bring to light the importance of mentor selection from an early age for well thought out individualized career or psychosocial support. The paper is based on an inductive study conducted in Germany using Grounded Theory. The data was collected in 25 semi-structured in-depth interviews with professors and postdoctoral researchers participating in mentoring programs across Germany. The study found mentees with mentor-seeking attitude had successful mentoring relationships as compared to mentees who adopted complacent attitude. Hence, mentees should be encouraged to adopt mentor-seeking attitude for effective and successful mentoring relationship. The paper aims to propose initiating a dialogue for supporting individualized self-selected mentoring programs at high school level for preparing students for the future.

Keywords: Mentoring, Grounded Theory, Critical thinking, Need-based analysis.

#### Introduction

In Odyssey, before his voyage King Odysseus made his friend and companion Mentor in charge of his son Telemachus to guide and train him. This was the first introduction to the concept of mentoring and mentor. Mentoring has developed manifold since then and numerous definitions of mentoring are available. Some researchers focus on mentoring as a contract, which garner strength from being reliable and open (Gardiner, 1998). Whereas, others describe mentoring as a partnership between mentors and mentees, where step-by-step guidance is provided to mentees till they are comfortable with the process (Strong & Baron, 2004). The mentoring partnership is further defined by Chaliès et al. (2004) as an activity in which mentors and mentees engage in "collective thinking, integrating and associating" their ideas and thoughts. Hence, the concept that first emerged as relying on mentors has evolved to an extent that both mentors and mentees are responsible for their role in mentoring relationship and both have to participate actively to make it successful.

To make mentoring relationships successful they need to be focused on the needs of mentors and mentees. The purpose of mentoring could be to provide support and assistance to mentees, to retain and groom them to be successful in their respective field (Gibson, 2005); to enhance mentees' productivity and professional success (Gong, Chen, & Lee, 2011; Kemmis et al., 2014). Success in mentoring could be achieved by providing support such as Psychosocial Support and Career Support (Kram, 1985); Psychosocial Support, Instrumental Support and Networking Support (Tenenbaum, Crosby & Gliner, 2001); Emotional Support and Professional Support (Rippon & Martin, 2006); Instructional and Organizational Support (Hennissen, Crasborn, Brouwer, Korthagen & Bergen, 2010).

Successful mentoring relationships also require an understanding of mentees needs. The needs of work-place mentees are different from student mentees or youth mentees; the workplace mentees require guidance and support for dealing with challenges at work as well as coping with work-life balance. Similarly, student mentees require support for career counselling, managing grades and workload difficulties. And youth mentoring requires sustained support throughout puberty in shape of personal relationship in which a caring individual provides consistent companionship, support, and guidance aimed at developing the competence and character of a child or adolescent (MENTOR, 2003).

Youth mentoring, as compared to other forms of mentoring, leaves a lasting impression on mentees as evidenced in Lau, Zhou & Lai's (2017) study where students with good mentoring quality performed better at future planning and career goal setting. Therefore, it is imperative to understand importance of youth mentoring and mentors especially natural mentors should be encouraged to provide youth mentoring in early years. Natural mentors are mentors who "you can go to for support and guidance if you need to make an important decision or who inspires you to do your best" (Zimmerman, Bingenheimer, & Notaro, 2002, p. 226). They focus on providing relational support to develop a trusting, emotionally close connection that makes the youth feel understood, valued, and respected (Rhodes, 2002); as well as instrumental support to engage the youth in challenging, goal-directed activities (Darling, Hamilton, & Niego, 1994).

Providing youth mentoring has multiple benefits for youth. Youth with mentoring support have been observed to avoid health risk activities and behaviors (DuBois &
Silverthorn, 2005). They also demonstrate healthy adjustment despite environmental adversity (Masten, Best, & Garmezy, 1990). As well as improvement in youth competencies and reductions in problem behaviors have been observed (Tierney, Grossman, & Resch, 1995). Weiss, Harder, Bratiotis, and Nguyen (2019) posit school mentoring as most beneficial for youth, however, despite the benefits associated with youth mentoring, it has not been widely adopted by schools as a coping and support mechanism for youth facing challenges to provide them support needed to excel in school and in life.

Education systems as well as individual schools around the world have evolved to provide opportunities to students. This growth and student welfare was based on the concept of providing best possible opportunities to students to prepare them for the future. Critical thinking was introduced in classrooms due to ineffectiveness of standard instruction methods to survive in the modern world. Critical thinking, that is creativity, problem solving, intuition, and insight (Garrison & Archer, 2000), is encouraged in students to be successful in the future. Similarly, schools around the world are focusing on student autonomy and making them equal partners in their learning via enabling them to conduct need based analysis and seeking focused guidance. Hence, education systems around the world are evolving to cater to the needs of students for a successful future. Yet, lack of interest in adopting youth mentoring within schools raises many questions and this study is focused on two interrelated questions.

- 1. Can mentor-seeking attitude help mentees in making mentoring relationship successful?
- 2. What would constitute mentor-seeking attitude?

#### Methodology

The study was conducted using Charmaz (2014) constructivist approach to acknowledge subjectivity and researcher's involvement in construction and interpretation of data. Charmaz (2014) constructivist Grounded Theory (GT) approach was complimented with Glaser's (1978) Grounded Theory approach. The Grounded theory research process was guided by sampling scaffold for theoretical sampling (Qureshi, 2018a). The data was collected through 25 semi-structured in-depth interviews. Using the nested sampling scheme (Qureshi, 2018b), participation invites were sent to mentoring programs via Forum Mentoring, directly to mentoring programs coordinators across Germany as well as using snowball sampling to contact participants. The interviews were conducted over a period of one year across Germany. Out of these, 22 interviews were conducted face-to-face, one was Skype interview, and two were phone interviews.

Fourteen female and one male mentee, and eight females and two male mentors participated in the study (Table 1). The participants of the study were contacted via their universities' mentoring programs in which they were enrolled. The fifteen mentees and ten mentors volunteered to be part of the mentoring programs and subsequently this research study. The participants were interviewed for one-hour to one-and-a-half-hour duration depending on their time availability and topics to be discussed as per interviewees' convenience.

Participants	No. of participants	Male	Female		
Mentors	15	1	14		
Mentees	10	2	8		
Table 1: Participants' Demographics					

The data collected in interviews was transcribed word-by-word and coded using Charmaz's Initial coding and Focused coding method in combination with Glaser's Theoretical coding method (Glaser, 1978). The Initial coding process was divided in two stages developing codes and developing initial concepts. Throughout the Initial coding phase, the data was coded and coding scheme was checked multiples times to ensure reliability of coding process. The next phase was Focused coding phase in which the data was further analysed in two stages strengthening concepts and developing categories. In this phase as well, the codes were reviewed and organised under coordinating concepts. During this process codes were reviewed numerous times to eliminate any ambiguity. Once categories emerged from the data then the categories were analysed to see the emerging themes, which later gave way to theory as seen in figure 1 below.



Figure 1: Data Analysis Scheme

The data was analysed using Glaser's 6C's as analytical tool which lead to emergence of four themes. One of these themes addressed in this paper is importance and impact of mentor selection.

#### Findings

The analysis revealed two main results:

- 1. Mentor-seeking attitude helps mentees in developing successful mentoring relationship, when they;
  - a. Exercise the right to choose
  - b. Show responsibility





Figure 2: Mentor-Seeking Attitude

It was observed that out of fifteen mentees, eight mentees rated their relationship as successful based on their willingness to meet the mentor again due to beneficial nature of their relationship with their mentor (see figure 2 above). Whereas, five mentees stated that their relationship was satisfactory and they were not certain if they wanted to meet their mentors again. And two mentees claimed their relationship to be dissatisfactory due to non-beneficial advice they received from their mentors. It was observed that mentees who claimed success had chosen their mentors themselves and took initiatives to make the relationship beneficial for them. Whereas, satisfactory relationship was one in which mentees had selected their mentors, however, they did not take responsibility for making their relationship work. And mentees in dissatisfactory relationships stated that they were assigned mentors by mentoring programs and they did not take responsibility for the success of this relationship. Hence, mentees who choose their own mentors and then put in effort to make their relationships successful were most satisfied with their relationship and claimed it to be successful.

- 2. Mentor-seeking attitude comprise:
  - a. Proactive
  - b. Reflective
  - c. Goal-oriented



Figure 3: Mentor-Seeking Attitude Composition

An analysis of qualities of mentees claiming successful relationship revealed three common qualities: proactive, reflective and goal-oriented. These qualities were found in all eight mentees claiming successful relationships as compared to mentees in satisfactory relationship who showed a combination of any two qualities (see figure 3 above). However, mentees in dissatisfactory relationship did not show these qualities. Therefore, it was found that proactive, reflective and goal-oriented mentees were able to have successful relationships as compared to mentees not possessing these qualities.

#### Discussion

The paper presents a Career Mentoring Model for Youth (CMMY) based on the results of the study where mentees with mentor-seeking attitude found themselves in successful mentoring relationships as compared to complacent mentees who accepted mentors referred to them by their programs. The CMMY is developed keeping in mind that mentoring has already established itself as an effective medium for supporting youth in need of guidance; therefore, developing mentor-seeking attitude in youth would be a step towards empowering them.

Literature on mentoring suggests that success of mentoring relationships is effected by many factors such as shortages of mentors (Johnson & Kardos, 2005); over load of work on mentors which affects their performance and they may feel isolation due to their role as mentors (Bullough, 2005; Maynard, 2000); the mentoring environment; or lack of professional expertise (Ehrich, Hansford, & Tennent, 2004); the selection and pairing process (Hobson, Ashby, Malderez & Tomlinson, 2009), but still it can be developed into a successful relationship despite all odds with mentor-seeking attitude as witnessed in the study. Encouraging youth to develop mentor-seeking attitude to find mentors, who understand their personality, issues facing them, can empathise with youth, and guide them towards better solutions, is the answer to many youth issues.

The Career Mentoring Model for Youth comprise four factors; critical thinking, need-based analysis, technology and mentor-seeking attitude. Only mentor-seeking attitude would not be enough, it has to work in combination with other assets available to our youth that is critical thinking, need-based analysis, and technology (see figure 4 below).



Figure 4: Career Mentoring Model for Youth

Hence, the four parts of Career Mentoring Model for Youth need to be present for comprehensive progress in youth mentoring process. For instance, encouraging critical thinking in students has changed our classrooms from standard learning procedures to critical inquiry of subject matter focusing and encouraging student autonomy. Students engaging in critical thinking analyse the topic, look for constraints, gather information, generate and test hypothesises to come to conclusions (Kurfiss, 1988). As found in the study, when mentees are encouraged to engage in critical thinking they are being equipped with the tools to be successful in all aspects of life.

Moreover, critical thinking combined with need-based analysis provides a strong base for further enhancement of youth. Issues raised by them that need to be addressed based on their analysis provide a platform for mentors to start mentoring youth with already identified issues. And since they would be highlighted by mentees, therefore, mentees' desire to work towards solving the issues would be high as observed in the study, which in turns makes mentors more responsive to work with mentees. In addition, use of technology in mentoring youth can also be a great asset. Our youth is well versed with technology and is using it in classrooms as well as daily life. Mentees, in this study, claimed that they took a proactive approach and searched for their mentors who had more common ground with mentees, hence, proving that using Career Mentoring Model for Youth with all four factors, critical thinking, need-based analysis, technology and mentor-seeking attitude is helpful in developing successful mentoring relationships.

Critical thinking, need-based analysis and use of technology in classrooms have been explored in the literature but Mentor-seeking attitude is a new concept and it needs further elaboration. Mentor-seeking attitude was commonly found in mentees reporting successful mentoring relationships and it was concluded in the study that mentees adopting mentor-seeking attitude were successful in their mentoring relationship. It was further investigated to explore what constitute mentor-seeking attitude to find three qualities to form basis of mentor-seeking attitude: proactive, reflective and goal-oriented.

These three qualities can be developed in youth as a necessity to develop Mentorseeking attitude. Being proactive was found in the study to be most helpful quality for mentees. Proactive is "acting in anticipation of future problems, needs, or changes." The mentee participants' of the study who claimed to be successful in their mentoring relationship adopted proactive approach in their mentoring relationship. For instance, one mentee Violet stated that she did her research on her mentor before going to meet him, "ya...his work and his CV, and his all on the homepage of the university, and so I could um comment on these points I read there, then, and I was asking how did you do this things." Another mentee Donna also stated, "I was there, I had prepared, I questioned, I knew what I want to know, and I asked a lot, I think that's an important thing to ask, to ask, to ask, and to see what they do." Their proactive approach to selecting mentor who was best suited to guide them reflected that they took responsibility for the success of their mentoring relationship by investing their time and effort. This proactive attitude, in turn, has a positive impact on mentors who appreciate, value and expect prepared mentees.

Similarly, mentor-seeking attitude also requires mentees to be reflective. Being reflective is "to think carefully, especially about possibilities and opinions." Reflection is to question and critically analyse, it is essential for mentees (Holloway & Gouthro, 2011).

Kullman (1998) study elaborates concept of reflection using Dewey's (1933) description that to be reflective three attitudes are required namely:

'Open-mindedness', which implies an openness to new ideas and thoughts; 'whole-heartedness', which implies the capacity to fully engage with new ideas and actively seek them out; and 'responsibility', which implies being aware of the meaning and consequences of one's actions. (Quotation marks used as in Kullman, 1998, p.472).

The mentees who were satisfied with their mentoring relationship reflected on what they wanted from their mentors and what they could bring to this relationship. One of the mentee Patricia stated, "and to really to first of all make yourself reflect what do you really want? What would be the right way to go?" Another mentee Michelle reflected on her mentoring practice, "Ehmm, yea, but probably the questions are not as specific as they should, that's probably my part of the mentoring process." Hence, reflection is more than simply "recasting of events or episodes" (Freese, 1999, p. 896); it is a thought provoking process in which mentees need to analyse their own participation in the mentoring process.

Moreover, third quality that mentee require for developing mentor-seeking attitude is being goal-oriented. "A goal-oriented person or team works hard to achieve good results in the tasks that they have been given." It was found in the study that mentees with high goal-oriented attitude were more successful in developing successful mentoring relationships. For instance, one mentee Courteney while referring to her mentoring meeting reflected goal-oriented attitude by stating, "um this is a topic I am definitely want to talk about her." In comparison, a low goal-oriented mentee when asked about her agenda and expectations had little to add:

Interviewer- "What were you expecting from her?" Joan- "Umm a little bit but not that much."

When mentees do not take goal-oriented attitude their mentoring relationships become less productive as mentors respond to prepared mentees as stated by one mentor Robert, "I would not receive you without you having prepared." Hence, being prepared for mentoring sessions reflecting goal-oriented attitude is the key to successful mentoring relationship. In short, eight mentees who reported successful mentoring relations reflected mentoring-seeking attitude (see figure 5 below) with three qualities proactive, reflective and goal-oriented



Figure 5: Mentor-seeking Attitude in Mentees

Hence, the three mentor-seeking qualities: proactive, reflective and goal-oriented combine to form Mentor-seeking attitude. And as mentor-seeking attitude alone cannot guarantee success of mentoring relationship; similarly, critical thinking, need-based analysis, and technology can also not reflect mentoring success. What is required is a combination of mentor-seeking attitude and mentoring assets (critical thinking, need-based analysis, and technology) to form the Career Mentoring Model for Youth for successful youth mentoring.

#### Conclusion

In short, mentoring youths is a necessary step, which can be made successful by using Career Mentoring Model for Youth. Mentors can use mentees' assets that are needbased analysis, critical thinking and technology in combination with developing a mentor-seeking attitude to enhance youth mentoring. It was found that mentor-seeking attitude helps mentees in developing successful mentoring relationship especially when they exercise the right to choose their mentors and show responsibility for their choice. And it was also established that mentor-seeking attitude comprise proactive, reflective and goal-oriented qualities, and it ensures a successful mentoring relationship when used as part of Career Mentoring Model for Youth. Hence, a dialogue is required to initiate youth mentoring programs in schools to prepare them for the future by encouraging them to use Career Mentoring Model for Youth to enhance their future prospects.

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# Using Open and Distance Learning to Achieve the Sustainable Development Goals of Education in Nigeria

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#### Abstract

The Millennium Development Goals (MDG) were unveiled in the year 2000 and Nigeria as a member of the United Nations put the necessary modalities in place towards realizing the goals particularly with respect to quality and affordable education. However, towards the end of 2015, the set goals had not been fully realized due to several problems necessitating the UN to come out with another set of goals- the Sustainable Development Goals (SDGs), which also highlighted education as a vital goal to be realized by the year 2030. In this paper, we examine the pitfalls of MDGs with respect to education and suggest how Open and Distance Learning methods via Information and Communications Technology (ICT) can quickly assist vital stakeholders, in particular the Nigerian Government, in fully realizing the goal of quality and affordable education of SDGs in Nigeria. Finally, we highlight some cogent points that require us to change the image of tertiary education through an open and distance learning approach for national development.

**Keywords**: Quality education, Open and Distance learning, Affordable learning, MDGs and SDGs and Nigeria.

#### Introduction

The United Nations (UN) is an umbrella body made up of independent and sovereign nations of the World. Its main aim is to maintain peace and better understanding amongst member countries and to promote sustainable development. As part of its efforts towards realizing this aim, member countries of the UN in 2005- adopted an eight-point agenda known as the Millennium Development Goals (MDGs), which were designed to eradicate poverty and ensure a better standard of living amongst all member countries. The eight-point agenda or goals are:

- To eradicate extreme poverty and hunger
- To achieve universal primary education
- To promote gender equality and empower women
- To reduce child mortality
- To improve maternal health
- To combat HIV/AIDS, malaria, and other diseases
- To ensure environmental sustainability
- To develop a global partnership for development

These goals resulted from deliberations on how to make significant, measurable improvements to people's lives, with the ultimate objective of reducing poverty throughout the world (Ejieh, 2003). Nigeria as a key member of the UN, adopted the MDG, which had a target of 2015 for realizing all the eight goals. Goal number two seeks to achieve universal primary education. The target was that by 2015, all children, irrespective of sex, could complete a full course of primary schooling through an increase in the number of enrolments and by ensuring that those enrolled complete their primary education.

As part of efforts towards realizing these objectives, the Nigerian Federal, State and Local Governments collectively started the implementation of the Universal Basic Education (UBE) scheme, which made education at the primary level and the junior secondary school level free and mandatory. Several schools were constructed and renovated while more teachers were employed and trained in order to realize this all-important goal but the implementation of compulsory primary education, even though it was never fully done in some states especially those in the Northern part of Nigeria, also diverted the focus away from the implementation of the secondary and post secondary education schemes (Durokifa & Abdul-Wasi, 2016).

The UN observed that as the end of 2015 was approaching, many member countries failed to achieve the full goals of the MDGs with some countries achieving some goals and others trying to do so. In September 2015, the UN member countries expanded the eight goals of the MDGs to include nine more goals, which were renamed as the Sustainable Development Goals (SDGs) with a take-off date of 2018 and a target implementation deadline of 2030. The aim of SDGs number 4 is to "-ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030. Professor Asha Kanwar, President and CEO of the Commonwealth of Learning (COL), says that "the achievement of Goal 4 would be a remarkable success, but will require new and innovative approaches to overcome the many challenges that stand in its way" (Kanwar, 2017). One of the most significant challenges for SDG 4 is that the continuing demand for education far outstrips supply.

For the aforementioned reasons, implementing the SDGs 4 would require additional efforts apart from the current system where the numbers of available institutions are not enough to cater for the current number of qualified candidates. Open and Distance Learning (ODL), which allows any number of qualified candidates to access education from any location and at their own comfort, would help in providing quality education to large numbers of students thereby helping in a large measure towards the realization of the SDGs in education. The concept of ODL's education system focuses on open access to education

and training to make the learners free from the constraints of time and place, and offering flexible learning opportunities to individuals and groups of learners (Ghosh et al, 2012). Open and Distance Learning (ODL) is now one of the most rapidly growing fields of education around the world and has helped to deliver quality and affordable education faster irrespective of geographical location and time (Bates, 1995; Bradley, 2000). In this paper, we examine present day Nigeria's education system, especially tertiary education and then offer a better method for helping to realize the SDGs for education in Nigeria using the Open and Distance Learning which is purely driven by Information and Communications Technology (ICT).

The rest of this paper is organized as follows. In Section 2 we discuss the related work. Section 3 examines present day Nigeria's education sector. In Section 4, we highlight the prospects and challenges of ODL. Section 5 discusses how to achieve SDGs for education through ODL. And lastly, we present concluding remarks in Section 6.

#### **Related Work**

Oladipo and Julianah (2016) have examined the level of commitment by Open and Distance Learning Institutions to the global development goals with an emphasis on access to education in Nigeria. They presented documentary evidence relating to the demand and supply of university education as well as the level of enrolment and graduate output in the Distance Learning Institute (DLI), University of Lagos.

It was observed that the level of unsatisfied demand for university education has continued to rise over the past 15 years, reaching its highest level in 2014. Simultaneously, a steady rise in the level of enrolment in DLI was also found with the highest enrolment recorded in 2012. In effect, a significant relationship between the level of enrolment in DLI and that of unsatisfied demand for education was established. Also graduate output was significantly related to students' enrolment in the DLI, University of Lagos.

On the other hand, the long term trend in enrolment was upward in all disciplines with Business Administration and Accounting recording the highest enrolment as opposed to Science Education. The author thus recognises the fact that Open Distance Learning is a giant step towards providing greater access to university education and recommends that more Open Distance Learning centres should be established in Nigeria so as to further broaden the access to university education for all. Finally, more disciplines should be included in the Distance Learning Institute (DLI) University of Lagos programmes.

Ojewumi and Olasupo (2013) reviews the present status of the unemployment situation in Nigeria with an emphasis on university graduates. Effort was also made to examine the role vocational education through open distance learning can play to address this national problem. Included is a recommendation of a vocational training programme developed for graduates seeking employment in areas such as Fashion, Interior Decoration, Leather works, Accessories etc. The importance of this ODL based model of vocational education and training programme has great importance and relevance in countries where unemployment is a serious challenge and where there is a great need of providing training to a multitude of unemployed youths at different levels to enable them to have skills that will afford them the opportunity to contribute their quota to the economic advancement of their country.

Robinson (2008) observes that the goal of 'teacher quality for all' is proving difficult to achieve in many countries, especially in rural areas, yet teacher quality is a key determinant of students' participation rates and achievement levels. It also affects the attainment of social justice in terms of equity in educational quality for students. One contributor to teacher quality is professional development though limits on its availability and quality create inequity for many teachers. Robinson's paper describes how distance education and ICT have

improved access, equity, and quality in professional development for rural teachers in one province in western China, viewed through the lens of a 'rights-based' framework.

Rupande (2015) argues that most successful economies in the world are the ones that invest heavily in their human resources and the vehicle for this human capital development is open and distance learning. Trinidad and Tobago stand out as typical examples of countries which were radically transformed by human capital development from being once a "plantation economy" to now being an exporting industrialised nation. Education and sustainable development are intricately woven, but what is obvious is that basic education is the backbone of a nation's ability to develop and achieve economic and sustainability targets. Higher education principally links workforce development to economic development by matching instructional programmes to the needs of industry. Work related learning opportunities need to be available so as to drive the economy, and this is the niche that Open and Distance Learning ought to fill. The advent of knowledge-based economies are giving comparative advantages to nations that thrive more on technical innovations and the competitive use of knowledge than the ones that depend on natural resources or cheap labour. Resource rich countries such as Nigeria still languish in the lower echelons of economic development because of high illiteracy rates, which subsequently lead to high poverty levels among its people. It is the intention of this article to examine how higher and tertiary education and ODL in particular can be used as a driver for socio-economic development as noted by Aristotle, centuries ago when he pointed out that the fate of empires depends on the education of their youth.

Jimoh (2013) observes the inability of qualified candidates to get a space in the conventional universities of Nigeria and calls for a strengthening of Open and Distance Learning programme to take in more prospective undergraduates. Thier paper notes the limitation on the number of spaces in universities, which imposes restrictions on access to conventional universities as only a ridiculously small percentage of those applying for admission succeed in securing placement.

This problem of an unfulfilled quest for education versus the actual supply of educational services has contributed to the acceptance, growth, and implementation of a distance education programme in Nigeria as a means to bridge the gap between demand and supply. In essence, the emergence of the system of ODL is an inevitable and unparalleled advancement in the history of educational development locally and internationally. Unfortunately, ODL is still bedevilled with a number of teething problems which are a clog in the wheel of implementation. It was recommended that the Nigerian government should subsidise ODL programmes just like the conventional school system and improve electricity supplies to the nation, which would help to power ICT-enabled devices and drive the ODL process effectively.

#### Nigeria's Education Sector Today

Nigeria today operates the Universal Basic Education (UBE) programme, which is a component of the 9-3-4 education system and involves a mandatory nine years of primary and junior secondary education, three years of senior secondary education and four years of tertiary education. The UBE Act was passed into law in 2004 as one of the strategies aimed at helping to achieve the educational component of the MDGs. The scheme provides nine years of compulsory primary and junior secondary education for free in the country and parents are required to ensure that they register their wards in schools and ensure they complete this basic education cycle with appropriate sanctions spelt out in case of default (Obong, 2006).

Education in Nigeria is a shared responsibility of the Nigerian federal, state, and local government as well as private individuals and organizations. Basic education comprises six

years of primary school and three years of junior secondary school and these first nine years of basic education are supposed to be free and compulsory. Unfortunately, however, Education in Nigeria is affected by a myriad of problems. These include; poor funding and thus poor educational infrastructure, inadequate classrooms and teaching aids (projectors, computers, laboratories and libraries), paucity of quality teachers and poor/polluted learning environments. In addition to these inadequacies, our school system is plagued with numerous social vices such as examination malpractices, cultism, hooliganism, and corruption (Odia and Omofomwan, 2007). Moreover, less than one-third of children with a basic education will proceed to senior secondary school. The rate of non-school attendance is highest among states in the Northeast and Northwest zones with 72% of primary aged children never attending school in Borno State compared to less than 3% in most Southern zones.

In an attempt to avoid the problems that have impeded the realization of the objectives of the past educational programmes, the government has outlined implementation guidelines to facilitate successful achievement of the stated objectives (Denga, 2000). The guidelines include:

• Public enlightenment and social mobilization, for full community involvement;

- Data collection and analysis;
- Planning, monitoring, and evaluation;
- Teachers and their recruitment, education, training, retraining, and motivation;
- Infrastructural facilities;
- Enriched curricula;
- Textbooks and instructional materials;
- Improved funding; and,
- Management of the entire process.

On aggregate, the efficiency of primary education in Nigeria has improved over the years. In 2014, the net attendance rate for primary school was 68.70%, which represents a 3.2% decrease from 71% recorded in 2012. The secondary school net attendance ratio was 57.4% in 2014, recording a minimal increase of 4.7% from 54.80% in 2012. The primary 6 completion rate was about 74% in 2014, which had dropped by 15.6% when compared to the 2012 figure. There was also a slight increase in literacy among young women by 0.15% from 2012 to 2014. The survey revealed that the proportion of boys and girls attending primary school declined in 2014, while those attending secondary schools increased minimally. However, primary 6 completion rates recorded a slight decline in 2014 (National Bureau of Statistics- UNDP MDGs performance survey report 2015).

On the other hand, civilization and development are closely connected. Both of them leverage very much on education. Education is a weapon for liberation from ignorance and diseases. Hence, it cannot be isolated from any development agenda as it is the pivot upon which several other programs rotate. Although the emphasis is on achieving primary education, it has to be realized that to sustain progress towards other goals such as full employment, poverty reduction and health related programs, attention should be extended beyond primary education.

Open And Distance Learning In Nigeria Today

The term 'open learning' describes policies and practices that permit entry to learning with as few obstacles as possible, while 'distance education' refers to the separation of the teacher and learner. Because learners and teachers are separated by time and space, technology or media must be used for communication between them. So, open learning is not the same as distance education but they are clearly complementary, which is why the two terms are used together – and the expression open and distance learning, or ODL is widely used (Kanwar, 2017).

Open and distance learning, basically refers to a style of instruction delivery by a non face-to-face approach in which the teacher and the learner are physically separated, and instruction is delivered via various types of media including print and modern ICT.

Open and distance learning is an economical instruction delivery, which does not depend on time, place, speed and space. It is possible to employ ODL in primary, secondary, tertiary, vocational and non-formal education and it flourishes in economies of scale. Its emphasis is solely on quality assurance, and well-designed instructional packages, and it succeeds with extremely well-structured and resourced student support. This aspect of open learning in the ODL relates to the flexibility of and access to instruction in order to ensure broad availability of educational opportunities to all.

Openness and access pay no attention to age, previous level of academic achievement, and other factors which create artificial barriers to education as a life-long pursuit (Jegede, 2016). Today, the National Open University of Nigeria (NOUN), now with headquarters in Jabi, Abuja, is the only tertiary institution established by the Federal Government of Nigeria to operate in Open and Distance Learning mode. It offers undergraduate (Bachelor degrees), sub-degree certificates, diplomas and Postgraduate Diplomas (PGD), Masters degrees and Doctor of Philosophy (Ph.D.) programmes in various fields of human endeavours. It has a unit called the Regional Training & Research Institute for Distance education and Open Learning (RETRIDOL), which was jointly established by NOUN and the Commonwealth of Learning (COL) in 2003 to identify and meet the needs of ODL-related research and capacity building in the west African sub-region (Jegede, 2016).

The National Teachers Institute (NTI), located in Kaduna, was established and operates the single mode programme for upgrading qualification of under-qualified teachers as well as the continuing education of teachers using distance learning techniques.

Presently, there are existing and emerging Distance Learning Centres approved by the National Universities Commission (NUC) of Nigeria to operate as dual-mode tertiary institutions. Some of them have been accredited while others are in the process of accreditation.

The Centres and the universities are as follows:

1) Distance Learning Centre, University of Ibadan, Ibadan, Oyo State.

2) Centre for Distance Learning, Obafemi Awolowo University, Ile-Ife, Osun State.

3) Distance Learning Institute, University of Lagos, Akoka, Lagos State.

4) Centre for Distance Learning, Modibbo Adama University of Technology, Yola, Adamawa State.

5) Centre for Distance Learning and Continuing Education, University of Abuja, Abuja.

6) LAUTECH Distance Learning Centre, Ladoke Akintola University of Technology, Ogbomoso, Oyo State.

7) Distance Learning Centre, Ahmadu Bello University Zaria, Kaduna State.

8) Centre for Distance Learning, University of Maiduguri, Bama Road, Borno State.

9) Lagos State University Open and Distance Learning and Research Institute, Lagos State University, Badagry Express-way, Ojo, Lagos

10) Distance Learning Centre, Joseph Ayo Babalola University, Ikeji – Arakeji, Osun State.

11) Centre for Human Resource Development & Life–Long Learning, Osun State University, Osogbo, Osun State.

12) Babcock Centre for Open Distance & e-Learning, Babcock University, Ilishan – Remo, Ogun State.

13) Centre for Open and Distance e-Learning (CODeL), Federal University of Technology,

Minna, Gidan Kwano Campus, Niger State.

14) Directorate of Distance Learning, Ekiti State University, Ado-Ekiti, Ekiti State.

15) Centre for Distance Learning, University of Benin, Benin-City, Edo State.

16) Centre for Open and Distance Learning, University of Ilorin, Ilorin, Kwara State.

17) Open Distance and e-Learning (ODeL), University of Port Harcourt, Rivers State.

18) Centre for Distance and e-Learning, University of Nigeria, Nsukka.

Justification and Critical Relevance Of ODL

There are easily perceived long and short term advantages to the government to using an open and distance learning mode to complement the traditional methods of education in Nigeria. Jegede (2016) in his keynote address at the 3rd University of Ibadan Annual Distance Learning Centre Distinguished Lecture and Stakeholders' Forum held at the International Conference Centre on 15 July 2015, opined that the many advantages, which the government and the good people of Nigeria stand to benefit from, when embracing ODL, can be grouped into the following areas:

• access and equity for comprehensive national development;

• alleviation of capacity constraints for economics, human resources and rural development;

• education for all especially to reduce or totally eliminate illiteracy and poverty;

• capacity building for human resource development especially in areas of acute deficiencies such as vocational and technical education, science and technology;

• life-long and life-wide education in order to build a learning and knowledgebased society;

• access to, and capitalising on, emerging market opportunities both within the African region and globally;

• avenue for transforming our higher education sector to make our institutions respond to contemporary changes, developments and needs of Nigeria;

• providing the answer to the perennial problems of teacher education;

• appreciating, educating the citizens about, and using information and communication technologies (ICTs) to accelerate national and community development and provide an organised entry into the global information superhighway;

• generating spin-off effects on other sectors of national development such as raising development in telecommunications, the information technology industry, broadcasting, postal and informatics and the development of many education-related small-scale industries; and

• alleviating budgetary constraints as expenditure on open and distance education which has been shown in other countries to be as low as 30 per cent of the total cost of the conventional form of education beyond the take-off costs.

From this, he proclaimed conclusively that distance education can complement human resource development, and satisfy the exceptionally large demand for education by our huge and rapidly expanding population, which is still mainly rural, remote, underrepresented, and marginalised in terms of resources, location, economic and other reasons. Distance education will enable Nigeria to provide access for all and achieve equitable representation by "taking the distance out of education" (Jegede, 2016).

#### Solutions To ODL Challenges In Nigeria

Jegede (2016) put forward that for the Nigerian government and its supporting population to start enjoying the advantages of ODL to solve national development issues via human resources development, there are many things to be done.

#### These include:

1) Expanding existing ODL institutions, establishing new ones, and providing facilities and spaces using reliable statistics of those needing higher education in Nigeria.

2) Integrating the distance learning mode with a traditional face-to-face education system in order to reduce the institutional resistance to innovation and to overcome the negative perception of poor quality with regards to distance education.

3) Establishing Open Schooling, Open Colleges of Education and Open Polytechnics to enable us to develop the required middle-level human resources for all sectors and at same time to achieve education for all (EFA).

4) Providing large-scale mass higher education and democratisation of open access to tertiary education as laid out in the National Policy on Education (NPE) and the African Higher Education Summit of 2015.

5) Using cutting-edge information and communications technology (ICT), including the internet, massive open online courses and other modalities in ODL that meet accepted quality standards to improve access to higher education.

6) Designing course material with a variety of methods that guarantee effective web-based instruction.

7) Effective and efficient management of the dividend of demography so that every citizen willing and able has unrestricted access to higher education.

#### Achieving the sustainable development goals in education

The international community embodied by the United Nations has long recognized education as a vital component for enhancing development and eradicating poverty worldwide which is why it was made a key component of the now defunct MDG and a vital component of the current Sustainable Development Goals (SDGs) (Lane, 2017). The SDG goals are provided in Fig. 5.1:

#### Sustainable development goal number 4

The aim of SDG 4 is to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030. The SDG 4 has ten (10) targets encompassing many different aspects of education. There are seven (7) targets, which are expected outcomes and three (3) targets, that are means of achieving these targets.



Fig. 5.1: The UN Sustainable Development Goals

Seven Outcome Targets. These include the following:

1) Universal primary and secondary education is expected by 2030 to ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.

2) Early childhood development and universal pre-primary education is expected, by 2030 to ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.

3) Equal access to technical/vocational and higher education is expected by 2030 to ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university education.

4) Relevant skills for decent work is expected by 2030 to substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

5) Gender equality and inclusion is expected by 2030 to eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.

6) Universal youth literacy is expected by 2030 to ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.

7) Education for sustainable development and global citizenship is expected by 2030 to ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and

sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and nonviolence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

Three means of implementation. These are:

1) Provision of effective learning environments by building and upgrading education facilities that are child, disability and gender sensitive and providing safe, non-violent, inclusive and effective learning environments for all.

2) Provision of scholarships opportunities by 2020, through substantial expansion globally of the number of scholarships available to developing countries, in particular the least developed countries, small island developing states and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programs, in developed countries and developing countries

3) Training of more teachers and educators, by 2030 through substantial increase in the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing states

From foregoing targets, the most logical pathway to achieve these SDG 4 targets is by embracing open and distance learning mode because of the following reasons.

1) According to the Special Advisor to the President on Social Protection, Mrs. Maryam Uwais, about 67% of the Nigerian population live below the poverty line

2. Thus, the majority of citizens willing and able to attend higher education remain denied.

3) There is a growing demand of working adults for higher education. The majority of them could not complete their studies or education before joining the workforce due to reasons beyond their control.

4) The total carrying capacity of all face-to-face institutions of higher learning in Nigeria could not admit the vast majority of Nigerian citizens who are thirsty and qualified for higher education.

5) In some parts of Nigeria, religious beliefs and early marriage denies a good number of the female population access to higher education.

6) Factors like physical disabilities, physical remoteness of localities from major population.

7) Payment of exorbitant tuition fees in most privately owned universities drives away the vast majority of Nigerian citizens who are thirsty and qualified for higher education.

Therefore, there is a need to change the image of tertiary education in Nigeria to solve challenges of social dislocation, poverty, conflict, and marginalisation, as well as achievement of the human development goals especially with regards to education for all (EFA).

#### Conclusion

Intuitively, the key to any human development and progress is education as it helps to enhance growth and development. Presently, the Nigerian educational system, especially, tertiary education lacks the capability to successfully find lasting solutions to educational problems in the country due to the unavailability of admission slots for every prospective undergraduate.

Development of our nation depends on tertiary education and if we are to enhance the effective training of manpower and citizens at all levels in order to achieve the SDG goals on education, then Open and Distance Learning which utilizes ICT for its operation and delivery, needs massive investment as that would enhance a wider spread of tertiary education at an affordable cost. More institutions should key into this initiative and governments at all levels should also be involved in developing useful policies and standards that would help increase the acceptability and quality of ODL certificates.

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### EFFECT OF COOPERATIVE LEARNING STRATEGY ON STUDENTS' ACHIEVEMENT IN AND ATTITUDE TO MATHEMATICS

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#### Abstract

The study investigated the effect of cooperative learning strategy on senior secondary school students' attitude and achievement towards mathematics. A pre-test, post-test, control group quasi-experimental design with 2 x 2 factorial matrix (randomized, control group, pre-test, post-test) was employed for the study. The subject for this study comprise of 200 senior secondary school students, 100 from each two randomly selected schools in Ibadan, Oyo state, Nigeria. Two instruments were used to generate data for the study. They are Mathematics Achievement Test (MAT) and Student Attitude and Characteristics Inventory Scale (SACIS). The participants responded to 50 items on an achievements test and 25 items on an attitude scale. Data analysis involved the use of descriptive statistics and Analysis of Covariance (ANCOVA). The highlights of the results are as follows; for the main effects treatments F (11.945) at p< 0.05 show that there is significant difference among the different groups, the cooperative group scored higher than the control group. Again, there is significant main effect on the gender score on achievement, while there is no significant main effect on gender attitude score after treatment. Also, there is no significant interaction effect in the score of subjects on attitude and achievement towards mathematics F (10.960) at p< 0.05. Cooperative learning strategy should be adopted as a mode of instruction in secondary schools. Again, seminars, workshops, conferences and symposia should be organized for teachers and student teachers in order to expose them to cooperative learning.

Keywords: Cooperative Learning, Attitude, Achievement, Mathematics

#### Leah Oni

#### Introduction

Mathematics is an indispensable subject of study. It is a methodological application of matter. It is so said because the subject makes one systematic. Mathematics makes our life orderly and preventing chaos. Certain qualities that are nurtured through knowledge of mathematics are power of reasoning, creativity, abstract or spatial thinking, critical (Zhou & Deng, 2017) thinking, problem solving ability and even effective communication skill. Mathematics is the cradle of all creations, without which the world cannot move an inch. Be it a cook or a farmer, a carpenter, or a mechanic, a shopkeeper or a scientist, everyone needs Mathematics in their day-to-day.

Mathematics plays an important role in forming the basic of all other sciences which deal with the materials substance space and time. Ukeje (2010) described the importance and the attention given to Mathematics as stemming from the fact that without Mathematics, there is no science, and without science, there is no modern technology and without modern technology, there is no modern society. From the societal perspective, Mathematics competence is essential for the preparation for an informed citizenry and necessary for the production of highly skilled personnel required by industry, technology and science without which a nation in the modern world cannot progress or become economically independent (Adesina, 2001).

Mathematics has been highly rated among others, and for that reason, it has been described as the queen of all sciences and servant to all disciplines (Fakuade, 1976). Perhaps, it is as a result of this that the Federal Government of Nigeria under the auspices of the curriculum planning body of the Federal Ministry decided to make Mathematics a core (compulsory) subject. Nigeria in her march towards technological breakthrough has made Mathematics a compulsory subject in the curriculum of the primary and secondary school level of her Educational system Federal Ministry of Education (2013). Again, the progress and development of a nation depends upon the volume of her scientific and technological advancements, which can only result from a sound Mathematics education, capable of making the citizens effectively functional in the field of pure and applied sciences.

As Mathematics is the tool for science and technology, the report of poor performance in the subject is giving the public a serious concern, since it is viewed as a major impediment to the technological transformation of Nigeria. The concern for this poor performance has not been limited to the mathematics and mathematics educators; it has also been the concern of parents and government. Mathematics education is confronted with serious problems which could be traced to some factors, such as:

- i. School population explosion resulting in poor teachers' attention to students.
- ii. Inadequate pedagogical training of teachers resulting in poor teaching and learning.
- iii. Economic and socio-cultural background of students which sometimes result in lack of home support and poor interest in mathematics education.
- iv. Lack of text books and teaching aids
- v. Inadequate number of qualified and dedicated teachers
- vi. Negative attitudes of students towards mathematics
- vii. Poor instructional strategies
- viii. Language problem.
- ix. Difficulty paying attention.
- x. Lack of practice
- xi. Insufficient prior knowledge
- xii. Lack of well-developed mental ability etc.

### EFFECT OF COOPERATIVE LEARNING STRATEGY ON STUDENTS' ACHIEVEMENT IN AND ATTITUDE TO MATHEMATICS

Sometimes teachers have serious defects in verbalizing concepts. Many of the concepts and terms in mathematics, which requires precise understanding are difficult to express in Nigerian language. The poor results of mathematics in both internal and external examination is not peculiar to Nigeria alone. It is world-wide (Akin Olajide, 2004).

Some efforts have been made to improve the level of learning of mathematics in our society (Olusoji, 2003). Curriculum organizations such as Mathematical Association of Nigeria (MAN), Science Teachers Association of Nigeria (STAN) and a host of others, have also continued to make efforts to popularize mathematics by organizing annual conferences where issues of content, methodology and problems associated with mathematics are discussed with the intention of providing solutions to the problem. Also, there is an annual mathematics competition for different stages of primary and secondary school pupils titled 'Mathematics Olympiad' organized by the Mathematical Centre. It is also a remarkable step to identify and motivate young talents in mathematics.

Moreover, the importance placed on mathematics is reflected in the way parents and guardians shows concern in the performance of their wards in mathematics, even when they cannot afford to pay for extra lesson in other subjects, they often strive to pay for extra lessons in mathematics (Graham-Brown, 1996).

Apart from the above mentioned efforts, there are some text books that have been written to halt this negative trend among students and correct the erroneous belief widely held by students that mathematics is a difficult subject to pass. Some authors have carefully devised the means of introducing the subjects to the student in such a way that will make them develop interest, love and thus perform brilliantly in it (Omothoso, Adedokun, & Abuduliahi, 2003).

The indispensable role of attitude in the learning of Mathematics has garnered the attention of educational researchers and Mathematics educators for a very long time (Mensal, Okyere & Kuranchie, 2013). Attitude is an internal state that influences the actions of an individual. Attitude could be learnt or formed and acquired from members of the family, teacher and peer group. It has also been realized that many students have developed negative attitudes towards the study of Mathematics which has led to poor performance of students in the subject.

Attitude can be seen as the stable way in which a person reacts to people, things, situations and problem. There are lots of definitions of attitude but the central thing to all these definitions is the idea of readiness to response. No wonder Good (1973) stated that attitude is a mental or emotional readiness to respond to situations, persons or things. Emotion is attitude based. The negative emotions may thus lead to stress which diminish the ability to think clearly which will invariably affect understanding of mathematics. Akinsola (1999) affirmed that lack of understanding may lead to frustration and when one is frustrated, it's unlikely that one will be able to reach set goals, which will result in failure. Akinsola (1999) highlighted some attitudinal factors which contribute substantially to the difficulties encountered by student in learning and understanding mathematics which are:

- i. An expectation to assimilate new ideas without mental efforts.
- ii. Reluctance to devote time to the study and to practice.
- iii. The lack of persistence necessary to tackle exercise of non-trivial nature.

Attitude is an internal state that influences the actions of an individual. Gbore (2013) defined attitude as the totality of an individual's inclination towards object, institution or idea. According to Reid (2003), attitude expresses our evaluation of something or someone which may be based on our knowledge, our feelings or our behaviour, and may influence future behaviour. Reid (2004) stated that attitudes are important to us because they cannot be neatly separated from study. Adesina and Akinbobola (2005) opined that attitudes could be acquired through learning and can be changed through persuasion using variety of techniques. Omotayo (2002) stated that students bring into classroom acquired attitude which could hinder or facilitate learning.

It has been observed that the traditional method such as lecture method used by teachers has actually made the learning of the subject difficult thus affecting their performance in both internal and external examinations. The circle of students' poor performance in mathematics needed to be broken which is the major concern of this paper. Basically, in the school system, students interact with one another as they learn together in three ways. One, they do compete with one another to know the best student perhaps for praise, grade and recognition. Again, students work individually towards a goal not minding how others do. Lastly, students can work cooperatively with the interest and mind of 'Together we succeed'. But in most institutions, competition is most dominant among the three ways. Conventional classroom environment is competitive most of the time. Students work independently on their own and often in competition with one another.

Cooperative learning is as old as research. The first research study came about in 1889. In the mid-1960s, cooperative learning was relatively unknown and largely ignored by educators (Johnson & Johnson, 2015). They further stressed that cooperative learning is presently used in schools and universities in every part of the world, for students of all ages. This is a successful teaching strategy in which small teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement. Cooperative learning has been well documented in educational research as a successful pedagogy to improve students' academic achievement. The Cooperative Learning paradigm has set very high expectations that students can understand course content by taking responsibility for their learning. Cooperative learning entails instructional methods in which the teacher organizes students into small groups, who then work together to help one another learn academic content.

According to Good, Graws, Mason, Slavings and Cramer (1990), small groups can allow students to be more active and enable teachers to introduce more thinking and more challenging content into the curriculum. However, Kutnick (1990) cautioned that not all relationships among peers promote either cognitive development or friendship, but the interaction has to be directed or controlled by the teacher for effectiveness. Various empirical reports have suggested the positive effects of group work in mathematics and science classroom (Good et al 1990; Kempa & Ayob, 1991).

Critics of cooperative learning strategy have commented on its impracticability with large class which is the prevalent situation with most Nigerian classes. Most teachers agree in principle with this approach but give excuses of not using it due to the large number of students

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which they have to face. Channon and Walker (1984) tried the cooperative learning strategy with large classes of students and the results showed enthusiasm and understanding of the mathematics concepts. They proposed that cooperative learning approach can be fully implemented with large groups of students if properly planned. When we compare cooperative learning with individualistic or competitive learning, it is more complex because it requires students to engage in learning tasks and work together.

Therefore, cooperative learning rarely succeeds in a situation where group members do not know how to manage the group particularly well, when it comes to resolving conflicts among group members. As part of cooperative learning condition, students are required to interact verbally with one another on learning tasks, exchange opinions, teach others, help the group operate well and take care of one another.

#### Statement of the problem

The dwindling general performance of students in mathematics has been a source of concern to all stakeholders, the parents, teachers, students, government and the general public. A number of factors such as the instructional materials supplied, utilization of instructional materials, gender factors and attitude of the students to mathematics, teachers' mastery of content, and teaching pedagogy have been identified as contributing to this poor performance. All these factors that affect students' achievement in mathematics have been an area of interest for researchers over the years. Many attempts have been made to improve the learning of the subject such as the provision of a better teaching approach. This study, therefore, investigated the effect of cooperative learning strategy on senior secondary school students' attitude and achievement towards mathematics.

#### Hypothesis

Ho1: There is no significant main effect of treatment on

- (a) Achievement in mathematics
- (b) Attitude in mathematics
- Ho2: There is no significant main effect of gender on
  - (a) Achievement in mathematics
  - (b) Attitude in mathematics
- Ho3: There is no significant interaction effect of treatment and gender on
  - (a) Achievement in mathematics
  - (b) Attitude in mathematics

#### Methodology

This study employed a pretest, posttest, quasi-experimental design, with a 2x2 factorial design. It is thus represented as follows:

O1 X1 O2

O3 X2 O4

X1-Experimental (Cooperative learning).

- X2- Control group (conventional method)
- O1 O3 are pre-test scores for the two groups.
- O2 O4 are post-test scores for the two groups.

Sample and Sampling Technique

A purposive sampling technique was used to select two schools for the study from Ibadan south/west local government based on the following criteria:

- i. School with qualified and regular teachers in mathematics.
- ii. Schools which have been presenting candidates for West Africa Senior School Certificate Examination (WASSCE) and National Examination Council (NECO) for at least 15years.

Simple random sampling was used to select an intact class from a Senior Secondary school (SS). Therefore, the sample size for the study consisted of 200 Senior Secondary school one (SS1) students offering mathematics from two government-owned secondary schools in south/west Local Government Ibadan. 100 students from one school were used for the experimental group (cooperative learning) while 100 students from the second school were used for the control group (conventional method).

#### Instrumentation

Two instruments were developed by the researcher namely:

- i. Mathematics Achievement Test (MAT)
- ii. Students Attitude and Characteristics Inventory Scale (SACIS)

In (MAT) the Blooms Taxonomy of educational objective was used to guide the structure of the items in the instrument. These items were drawn in line with Nigeria's mathematics curriculum for Senior Secondary school (SS 1). This was done to test student's cognitive ability in mathematics. Therefore, 50-item multiple choice mathematics achievement test with four options per item was constructed and the duration set for students to answer these questions was 1hour. Also, the SACIS instrument contained twenty-five items to elicit information on students' attitude towards mathematics.

#### Treatment

The treatment involved cooperative learning strategy for group 1 and the conventional (lecture) method for the control group 2.

#### Experimental Group 1

This group was exposed to cooperative learning strategy based on group method. There were 20 groups consisting 5 students in each group i.e students with different level of academic abilities to use a variety of learning activities to improve their knowledge in mathematics. Five topics (Indices/ Logarithms, Approximation, Change of subject formula, Statistics and Simple interest) were given to them to take care of among each group. The teacher then introduces the subject matter to the students stressing the need to work together as a group on each lesson. The teacher also ensures prompt collection of the textual booklets at the end of each lesson. This exercise lasted for six weeks.

#### Control Group 2

The control group where there are100 students in intact class (class A: 50, class B: 50) were exposed to conventional (lecture) method of teaching mathematics. In this group, teacher delivered his lesson using chalk and chalkboard. Teacher explained the topics to students and his focus is on knowledge transmission in an effort to cover the content within stipulated period.

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Students are passive in this group because it is teacher centered method of teaching though teacher asks questions to keep the students attentive.

#### Validity and reliability of instruments

Mathematics Achievement Test (MAT) was given to regular West Africa Senior School Certificate Examination (WASSCE) and National Examination Council (NECO) examiners for content validity. Also, Students Attitude and Characteristics Inventory Scale (SACIS) instruments were given to experts in the International Centre for Educational Evaluation (ICEE) University of Ibadan, Nigeria for both face and content validity. The criticisms proffered by these expects actually guided the final draft of the instruments. The reliability coefficient of the instruments value 0.72 and 0.71 respectively.

#### Procedure for data collection

In order to conduct the experiment successfully, the Mathematics Achievement Test (MAT) instrument was administered as pre-test to the students in the two groups (experimental and control group) in order to determine the entry behavior of the students in mathematics. In this case, students are to circle the correct option in the instrument. It was after this that the proper treatment began for both experimental and control group. The researcher spoke with the students and explained the purpose of the study. Besides that, two teachers were engaged and trained as research assistance. These teachers were given lesson plan on the selected topics which to be used for six weeks based on the experimental treatment using cooperative learning strategy and the control using conventional (lecture) method. Students in both groups were monitored and guided throughout the period. At the end of the exercise, Students Attitude and Characteristics Inventory Scale (SACIS) instruments were administered to students and Mathematics Achievement Test (MAT) as post- test was administered in order to see the performance of the students in the both groups.

#### Method of Data Analysis

The analysis of the data collected was done using descriptive statistics and analysis of covariance (ANCOVA).

#### Results

Group	Ν	Х	S.D
Cooperative	100	18.73	4.44
Control	100	15.49	3.92

Note: N = no of subjects

X = means achievement score for post-test.

S.D = Standard deviation

Table 1: Descriptive statistics of students post-achievement test scores under each treatment.

Source	Sum	of	df	Mean square	F	Sig
	squares					
Sex	107.459		1	107.459	16.199	0.007*
Treatment	124.412		1	124.412	11.945	0.013*
Sex treatment	3.313		1	3.313	0.827	0.529Ns
Group						

Table 2: Summary of Analysis of Covariance of students Achievement scores of cooperative learning post test Ns = not significant at p>0.05

\*= significant at p<0.05

Source	Sum squares	of Df	Mean square	F	Sig.	
Sex	178.153	1	178.153	.417	.636	
Treatment	63.374	1	63.374	.204	.756	
Sex*Treatment	569.017	1	569.017	2.874	.338	
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Table 3: Summary of Analysis of Covariance of students attitudinal score (SACIS)

#### **Findings of the Results**

Ho-1a: There is no significant main effect of treatment on achievement of students exposed to different learning method.

From table 1, the result shows that the post-test mean scores of students exposed to cooperative learning (X=18.73) is higher than students in the control group (X=15.49). To test the significant mean difference, table 2 reveals the result from Analysis of Covariance that there is significant main effect on subject scores base on their post test scores after treatment (i.e after expose to cooperative learning strategy 11.945 at p< 0.05) which shows that there is significant difference among the different group. In this value of f-ratio the decision was to reject the null hypothesis which says there is no significant difference in the achievement of mathematics among students exposed to the cooperative and control group.

Ho-1b: There is no significant main effect of treatment on attitudinal of student learning method. Table 3 shows that there is no significant difference on the attitude of students after exposure to the treatment. To test the significant mean difference, table 3 reveals that the result from analysis of covariance that there is no significant main effect on subjects scores after exposure to cooperative learning strategy f(.204) p<0.05 f test shows that there is no significant difference in the attitude of subject after exposure to treatment. The decision was to accept the null hypothesis which says there is no significant difference in the attitude of subject exposed to the cooperative and control.

Ho-2a: There is no significant main effect of gender on Achievement

From table 2 the result reveals from Analysis of Covariance that there is significant main effect on the gender scores base on the post-test scores after treatment f (16.199) at p<0.05, shows that there is significant main effect of gender on achievement.

Ho2b: There is no significant main effect of gender on attitude.

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From table 3 the result shows that there is no significant effect of gender on attitude of subject. F-ratio f (0.417) at p>0.05 shows that there is no significant main effect of gender on attitude. Therefore, the decision was to accept the null hypothesis which says there is no significant effect of gender an attitude.

Ho-3a: There is no significant interaction effect of treatment and gender on achievement Base on the result from table 2 which shows that there is no significant interaction effect in the scores of subjects on achievement towards mathematics. F (0.827) at p>0.05 which means there is no significant interaction effect of treatment and gender on achievement. The decision is to accept the null hypothesis above.

Ho-3b: There is no significant interaction effect of treatment and gender on attitude.

Base on the result from table 3 it shows that there is no significant interaction effect of treatment and gender on attitude f(2.874) at p>0.05 the decision is to accept the above null hypothesis.

#### **Discussion of Findings**

Based on the above findings, cooperative learning which is an instructional strategy in which small groups of students work together on a common task has been found useful in the learning of mathematics. This can be seen in the post-test scores of the students exposed to cooperative learning in the study. The finding is in line with Johnson & Johnson (2017) assertion that how teachers' structure student-student interaction pattern has a lot to say about how students learn. It means how students interact with each other should not be a neglect aspect of instruction. For attitude towards mathematics, it is expected that cooperative group will be better since cooperative interaction will provide social interaction, which may enhance confidence and positive attitude towards the subjects.

The findings of this study also corroborated with Tripathy (2004) who advocated that when the cooperative group situation is used, it could create a non-threating environment in which students can more readily take academic risks. He further stressed that students who are working in groups are more likely to stay on task and remain motivated because of peer support and encouragement. This finding also is in line with Papanastasiou (2000) assertion who claimed that students with positive attitude towards mathematics will generally excel at it. The finding of this study agrees with the practice of educational theories that cooperative learning strategy enhances cognitive and affective outcomes. It has noted that the way mathematics is taught in our secondary schools is far from the expectation. Through cooperative learning strategy, students can be helped to develop more positive attitude towards mathematics.

#### Conclusion

The cooperative learning strategy has been found in this study to promote the students cognitive achievement in mathematics. The treatment further improved and strengthens the cognitive achievement outcome of the students as a result of social interaction that occurred within the group during the time of learning. The famous Chike Obi (a professor of mathematics in University of Ilorin, Nigeria), first encountered problems in the study of mathematics, but he changed his attitude towards it and determined to succeed. Today, he is an expert in mathematics. Positive attitude towards mathematics will go a long way in the students' performance.

In conclusion, it is suggested that cooperative learning strategy should be adopted as modes of instruction to replace the conventional method which dominate our secondary schools. Again, the research also suggests that cooperative learning strategy can be combined with another learning strategy for more effectiveness.

#### Recommendations

Based on findings of the study, the following recommendations were made:

- 1. The study provides empirical evidence on the effectiveness of cooperative learning strategy in enhancing academic achievement of students in mathematics. This implies that the use of cooperative learning strategy of mathematics can improve poor performance of students in mathematics.
- 2. Cooperative learning strategy should be adopted as mode of instruction, since the result of the study shows that cooperative learning helps students' achievement.
- 3. The Federal and State Ministries of Education and other educational bodies like Nigeria Educational Research and Development Council (NERDC) and the Science Teachers Association of Nigeria (STAN) should organize training/ workshops for mathematics teachers. This could be done in order to update their knowledge on the use of the cooperative learning instructional strategy to improve teaching and learning in Nigerian schools.
- 4. The curriculum developers should design a curriculum based on cooperative learning strategy in teaching mathematics in our secondary schools. Also mathematics teachers should be encouraged to adopt cooperative learning strategy in order to enhance the cognitive learning outcome of students in mathematics.

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### Family Variables and Social Adjustment of Secondary School Students in Ikom Education Zone of Cross River State

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#### Abstract

The main purpose of this study was to determine family variables and social adjustment of secondary school students in Ikom Education Zone of Cross River State, Nigeria. To achieve the purpose of this study, two null hypotheses were generated to direct the study. The literature review was done according to the variables under study ex-post Facto research design was adopted. A sample of six hundred and two (602) respondents was selected for the study which was done through simple sampling technique and data was collected through a questionnaire. Independent t-test was the statistical analysis technique adopted to test the hypotheses under study. The results of the analysis revealed that, single parenting (male/female) and family type significantly influence social adjustment of secondary school students. Based on the findings of the study it was recommended that Parents should set clear standards for their children, monitor limit that they set, and also allow children to develop autonomy.

Keywords: Social adjustment, Family variable, Single parenting, Family type

#### Elijah Irozuru

#### Introduction

Social adjustment is an effort made by a person to cope with the demands or challenges of a new environment. It includes the individual's involvement in social activities and satisfaction with various aspects of experiences. In the process of social adjustment, the individual tries to behave in accordance with the norms, ethics, and values that will enhance his survival, and meeting the social expectations of the environment. Different individuals have different social adjustment abilities. When individuals are able to adjust effectively in a new environment, it enhances their optimal performances physically and intellectually.

In the school, parental control of students ceases, and the student is confronted with both new freedom and challenges. The school is a new environment that can trigger different reactions among students. The student now needs to reconstruct his/her personal relations in a new environment, and often causes some form of distress. Poor social adjustment of students with school life can make learning and general school experiences uninteresting for students. It is not enough for students to have passed through the primary school and seemingly declare parental intendance, there are still some tasks of effective adjustment to social and challenges through the secondary school. Positive and effective social adjustment of students is an important factor to effective learning and outcome of students.

Students have different ways and abilities of dealing with school challenges. Some deal with adjustment problems constructively, while some feel overwhelmed and find school life difficult. Students are confronted with new personal and interpersonal challenges that include the need to establish new relationships, develop, study skills and so on, and still cope with already established relationship with parents, former peers and so on (Renshaw, 2013).

When students find themselves in the school, it can reduce contact and social support from former friends and family members. Difficulties in dealing with the challenges may lead to poor academic performance and increased anxiety. Students who are adequately adjusted become more prepared socially, emotionally, and academically. But those that are not adequately adjusted are ill-equipped socially, emotionally and perhaps academically.

Parenting adolescents for social adjustment is more difficult than previous years. The availability of technological and sociological changes that have occurred in many Nigerian homes, have afforded the child the opportunity of gaining knowledge and experience from the more advanced Western world. Adolescents are exposed to activities and information from people that challenge their person, family standards and values (Bornstein & Bradley, 2003). These changes have brought great benefits and problems, in the family forms, structures, parenting styles and children's responses to issues. Experts increasingly describe the pressure on contemporary families as frustrating, demanding and confusing.

Parenting adolescents for social adjustment has become one of the most challenging tasks of raising children. Adolescents are faced with problems of insecurity, inferiority, frustration and dejection. Compounding adolescents are other factors such as societal pressure and aspiration, well meaning friends and relatives, and conflicting theories presented in books and magazines, on television, videos, computer and satellite communication system in many homes. Dinkmeyer and Mckay (2007) affirm that many parents enjoy their children's infancy and childhood but find their adolescence years a time of conflict.

Another contending issue is the increase in the number of families in which both parents work at the same time, the number of one-parent families as a result of an increasing divorce rate. With working parents, the time spent with their children is being squeezed and the quality of care is of concern to many (Crounter & Booth, 2004). The way parents use their time with their adolescents, the various child care arrangement in relation to home care arrangement influence children's social and intellectual growth as well as the resultant effect of the child being without supervision for hours everyday after school.

Parenting, however, involves more than hard work, effort and self-discipline. An added benefit is the ability to have fun with each other, to enjoy being part of a happy family (Vanpelt, 2004). Hence family togetherness breeds peace and understanding. Baumrind (2007) believes that parents should be neither punitive nor aloof. Rather, they should develop rules for their children and be affectionate towards them. There should be a cordial relationship between adolescents, and parents, staff and administration, and participation in social and religious activities should be encouraged. If parents and adolescents can adjust positively to the above situation, they should be able to live at peace and harmony in their homes, school and society successfully.

According to Mussen, Conger & Kungan, (2001), families are confronted by challenges of continuous adaptations and adjustment to parenting of children, that is commensurate to the demands of contemporary times. The home as the child's first environment after birth goes a long way to nurture and modify genetic endowments and behaviours. The child's behaviour may also be a product of his environment over which he had no control.

Similarly, Digiulo (2005) demands from parents a caring process which ensures the adolescents' protection from avoidable illness, harms, accident, abuse (sexual harassment, drunkenness, and unwanted pregnancy). It further demands a degree of parental control over the child, and an adequate knowledge of physical, emotional and social needs necessary for behavioural and social adjustment of adolescents to achieve societal values and responsibilities. With these demands, Nigerian parents need to readdress their parenting styles and their new orientation in pursuance of money, which has become the ultimate in many families, and to return to their children the love, care, attention and unity that exist before in the family.

However, beyond the process of genetic imprint over which couples have no control, the rest of the task of mediation of a course of successful formation, development and adjustment of adolescents revolve on the parents. They lay the foundation for successful personality development to the growing person (Arene, 2001). Therefore, successful management of adolescent constitutes a challenge which must be accomplished for successful development to adulthood. The adolescent thinks himself no more a child in the true sense, and yet not an adult, in the real sense.

In normal circumstances, child rearing and up bringing is a function of both parents (i.e. husband and wife). This seems to be in line with the popular saying that "it takes two to tango." However, where one of the two is not playing any expected key role in child upbringing due to some extraneous circumstances, be they man-made, natural causes, or socio-economic reasons, the product of that union, the child, is bound to experience some negative feelings in and around him or her and such negative feelings may affect the child psychologically, socially, economically, academically and otherwise throughout life.

Adolescents form the bulk of the student population in secondary schools. The above claim has universal application in Nigeria as elsewhere in the world. But there is a growing concern about this crop of scholars as studies have shown a growing trend in them, which indicates that their psycho-social and emotional needs are getting wider by the day; and this tends to be impacting negatively on their overall academic performance in school. Though adolescent, according to Oluwatosin et al (2011) "is usually a time of both excitement and troubles and can thus be a confusing time, it is vital that, parents, education planners, guidance/counselors and policy formulators understand why they may be excited, confused, receptive, aggressive and unfriendly at certain periods of their growing up.

It has become more imperative to conduct more researches on why these adolescents are maladjusted in behaviour and in their relationship with fellow adolescent, other members of the society, and to ascertain why they have problems with their self-concept. It is also
imperative to find out why they cannot adjust from the situation they found themselves, or cope emotionally.

In recent times, there have been a series of complaints from parents, teachers, annual reports of social welfare office, administrators and the general public about the behaviour of adolescents and their social adjustment. The adolescent behaviour pattern is formed by a transaction of the past, present, and future anticipation in accordance with the social setting. The child's behaviour may also be a product of his environment over which he had no control. Specially, social adjustment is influenced by lack of communication and family decisions (parenting style) that include unclear expectation of behaviour, inconsistent or lax discipline, lack of bonding and caring, conflict between parents, or caregivers, and low expectations for the child's success. Hence free communication is difficult if parents are consistently critical, dictatorial and dogmatic.

The current behavioural pattern in the family and society has affected the length of hours of interactions between children and parents. Parents, who are expected to be good models for personality excellence, have become more interested in self pursuit to the detriment of their parenting role. Hence, individual difference exists in physical appearance, temperament, intelligence, abilities and aptitudes. This has thrown adolescents into many antisocial practices such as; stealing, disobedience, disrespect for elders, lying, aggression, cheating, cultism, gangsterism, armed robbery, prostitution, ritual killing, kidnapping, get rich quick syndrome forgery and impersonation, falsification of school report sent to parents, public assault, pervasive feelings of inadequacy, timidity, rape, shyness, absenteeism, truancy, drop out among others. The incidence of these behavioural misconducts, are alarming. It tends to indicate that such behaviours have become embedded in our system, and remained features of life for the contemporary Nigerian adolescent.

Single parenting is growing in an alarming rate the world over. There are several causes or reasons why single parenting is assuming this unprecedented rate. The reasons include both natural and man-made factors. The natural factors may include death of one of the spouses, incompatibility of the couple, natural disasters that may have destroyed the couple's means of livelihood, such that one of the two may opt to live with her parents or a close family relative that is not agreeable to the other partner. It could also be as a result of economic down turn due to loss of job or phenomenal loss of business to fire, windstorm or floods. When any of these seemingly happens to a family, stress and hardship may set in; squabbles may become a reoccurring decimal in the family to an extent that one of the couples may decide to take separation or outright divorce as an escape route.

One of the aforementioned cases would give rise to single parenthood, which in turn gives rise to some form of maladjustment. The maladjustment may result from lack of dual parental love and affection, and this tends to have a debilitating influence on the psychological nature of the children in these families. Generally speaking, "a child deprived of affection exhibits social and intellectual disorder, which results in maladjustment" Denga (2005: 59). If the case of single parenting is male, the implication may be grave, such that "mothering deficiency manifests in emotional disorders, physical and intellectual retardation, aggressiveness, vandalism and other basic needs of delinquency". Children who lack affection and other basic needs, especially, mothering affection, according to the author, "grow into delinquencies, exhibiting behaviours such as …truancy, bulling, cheating, and laziness".

Bornstain (1985) sees the key function of the child's family, as raising the young person in a healthy manner as possible. The parental role, according to him, is to provide the child with safe, secure, nurturing, loving as well as support the child's environment, one that allows the offspring to have a happy and healthy youth life, in order to acquire experience that allows the youth to develop in knowledge, value, attitude and behaviour, necessary to

become an adult making a productive contribution to self, family, community and the larger society.

The implication is that whatever a parent does legitimately in order to fulfill these duties, or roles, is what is summarized as parenting and usually requires the mother or father, providing all, or most of the physical, psychological, emotional and socio-economic needs, in the process of raising the child within a given family. The psychological needs of the child are many and could vary as emerging situations present themselves. He (child) may require new experiences, affection and may require the parent(s) to allow him or her space to assume responsibility.

Benedek (1956) seems to support the above assertion as he opines, "one of the parenting responsibilities is to provide their children with activities which lead to their having new experience. Parenting involves aiding children to explore, experiment with things and experiencing the world around them.

Principally, children need this space to experiment and acquire new experiences because life within their environment, become boring if there are no new activities for them to experiment, more so that the child is full of energy that needs to be expended. But, in allowing the children such space, parents need to plan their activities to avoid them taking expensive risks that could endanger their lives.

Expressing his views on the essence of showing affection, Denga (2005) asserts that children as well as adults want to be loved. The primary affection, for children, he noted comes from their parents, especially mothers and siblings, later on, the peer group, teachers and members of the community. But the snag or pitfall to the involvement of teachers in showing affection to the child hinges on the inability of the teacher to show significant level of affection to 30 or more children entrusted into his or her care. Denga's conclusion on this matter is that "the major responsibility for affection rests with the parents". A child deprived of parental affection, according to Denga, exhibits social and intellectual disorder which results in maladjustment. He asserts further that mothering deficiency manifests in emotional disorders, physical and intellectual retardation, aggressiveness, vandalism and other forms of delinquency. Children who lack affection and other basic needs of life grow into delinquents-exhibiting behaviours such as stealing, imaginative lying, rudeness, truancy, bullying, cheating, laziness, gang-fighting, impudence and indiscipline generally.

Denga (2005) talks about child development in relationship to acquiring positive psychological acumen, that "development psychology is mainly concerned with physical development, motor development, perceptual (perception) development, including cognitive, personality, emotional and social-moral development. To him, a healthy physical development influences intellectual development and the entire personality of the child, which are consequent upon the child's environment and heredity. A conductive environment promotes a healthy physical and intellectual development, while a non-stimulating environment retards total development. In Denga's view, parents, guardians and others charged with child upbringing must try to provide a stimulating environment for children. Without waiting for the prompting of a soothsayer, it is the sole responsibility of parents, guardians to provide the needed stimulating environment for the child or children to develop all round.

Lisa Belkin (2015) said the rise in single fatherhood is attributable to an increase in both the rate of divorce and non-marital births, since 2002, both of which have contributed to an increase in the number of single parents of both sexes. Peer Research reports on why the number of single Father (Dad) has jumped in the U.S, tends to agree with Kathleen O Brien (2013), as she asserts, it is also a reflection of the changing role of fathers in general. They are arguably, where women were a decade ago in their awareness that they a different life

work equation, but are not yet what theirs should be. They also want a different relationship for their children than their own fathers were expected to have.

Contributing to the rise of the single dad, Caroline Kitchener (2014) said, "A rising divorce rate over the half-century, along with the increasing frequency of parents never marrying at all, and the growing societal acceptance of fathers as primary "care-givers" is one noticeable reason. To her, "a century ago, this image of men left alone with children was horrifying enough to spur an anti- suffrage movement". She equally attributed the rise in single dad in the U.S. which has quasi- Universal application, "to the U.S Judicial system and its stifling standards for child custody cases" until recently, the averred, US courts would almost always rule "in the best interest of the child" (slang for, in favour of the mother).

Besides, Kitchner (2014) believes more fathers are starting to believe that they have something important to contribute to their children's lives "an absolute fact? Does it make them better parents? Kitchner (2014) tends to disagree. She asserts, "Single dads are more easily discouraged than single moms--- because men suffer from a lack of parental training. While women often grow up tucking theirs dolls into bed at night, young men are rarely conditioned to take care of someone else. This lack of experience can make single dads begin to think "whether they are really cut out for this after all." Pp58. Like all other forms of single parenting, male single parenting has its own attributes, though some are peculiar.

There are also able differences between single mother parenting and single father parenting. Gretehen Livingston (2011) in a study to ascertain and compare the rise in the single fathers in the United States, came up with findings that single fathers are more likely than single mothers to be living with a cohabiting partner. His findings however revealed that single fathers, on the average, have higher income than single mothers and are far less likely to be living at, or below the poverty line. He also asserts that single fathers are also somewhat less educated than single mothers, and they are older. In terms of percentage the author said 52% of single fathers are either separated, divorced, widowed or never married and are living without a cohabiting partner.

The research also shows that households headed by single fathers appear to be much better off financially when compared with those headed by single mothers, but much worse off than married fathers. In addition, Livingstone's (2011) research shows that the prevalence of single fatherhood is closely linked to educational level; the more education a father has, the less likely he is to head a single father household. In all these, how does single fatherhood affect the self-concept and social adjustment of adolescents in school, bearing in mind the findings that most single fathers are less educated and less financially endowed?

Denga and Denga (2007), writing on the psychological challenges of child parenting, assert that "some parents are simply not able to provide a stimulating intellectual environment for their children. Learning equipment, such as reading, writing and listening materials are not affordable to an extent that children without materials become depressed, frustrated and emotionally changed because of lack of class participation. This action, the authors assert, adds to the children depression.

The single parenthood, be it single male or single female parents, has its own effects on children. The reason as captured in Denga and Denga (2007) is because children learn what they grow up to see happening around them... children from single parenthood, due to divorce, separation, will be affected psychologically and socially.

Psychologically he noted, one parent is missing, especially where they were two but due to incompatibilities in the marriage, one parent has to leave. The love and care of the mother/father is gone except for occasional times of visiting,

Edet (2007), asserted that adjustments of children who have lost a parent by death or divorce, exhibit significantly more personality problems such as shyness, anxiety and other inhibited behavior. While children who have lost a parent by divorce show, significantly, more conduct problems. The said research has shown that children from divorced families have significantly higher rate of delinquency than children from widowed and married families.

Denga and Denga (2007), assert that "women, whose husbands maltreated them, by battering and sending them away from their matrimonial homes... usually end up in their mother's abode, because if children of the battered mother take sides with her, the father vehemently drives them away with their mother, so far as the man does not receive support from the children even when he is wrong, they are out to face rejection, neglect and abandonment". This trend, according to them, "brings untold hardship on children and their mothers, who may not be financially strong but are now to cater for the total upbringing of the children". Denga and Denga (2007) said, "in case of death of the husband, some cultures expect the bereaved woman to bring all that her husband left for sharing by the family members. In many cases, the woman is driven away empty handed with no dime to cater for the children and her. pp73."

The behavior of the child, which influences his/her self concept and social adjustment, in the long run, is "the product of the environment... sometimes, the prevailing social, economic and cultural circumstances exert a negative impact on the child and change him/her from good to bad" (Denga & Denga, 2007, pp 84)

Thus, when the adolescent's self concept and social adjustment have rejection at the foundation, a female single parent, needs to work extra hard to erase from his or her psyche, some anti-social behaviours like aggression and hostility, which according to Denga and Denga (2007), "is strongly related to frustration and other aspects of psychoanalytic theory."

In effect, female single parenting, by all standards, is not adequate parenting. Inadequate parenting, as postulated by Denga and Denga (2007), "breeds unproductive and undesirable citizens, who often turn out to be criminals. Pp 62"

As children grow, they gradually develop affection for their parents. While the males gravitate to their mother's affection and attention, the females gravitate to their fathers for attention and affection.

## Methodology

The research design opted for this study is ex-post facto design. This design was preferred over all other designs because it deals with research issues that have already taken place in the environment long before the time the researcher carried out the study. The population of this study consisted of twenty-five secondary schools and students in the 5 Local Government Areas of cross River State in the 2016/2017 academic session. From the State Secondary Education Board (SEB, 2017) there were 76 secondary grammar schools manned by the SEB. Also, these schools housed a total of 112,153 students (55,646 males and 56,507 females). The stratified random sampling procedure was adopted in selecting the representative samples of schools and respondents to participate in the study. Six hundred and twenty SS-II students formed the representative sample of students for this study. Family Structure and Social Adjustment Questionnaire (FSSAQ) was the instrument used for data collection. The instrument was given to two experts in the tests, measurement and evaluation unit of Educational Foundations for validation and reliability analyses. Test-retest reliability co-efficient method was used to determine the reliability estimate of the instrument. After the administration, coefficient of internal consistency was obtained and the index was found to be 0.79 this value was high enough to be considered good for a research instrument.

## Presentation of the results

In this section each hypothesis is re-stated, and the result of data analysis carried out to test it is presented. Each hypothesis of the study was tested at .05 level of significance.

# Hypothesis one

There is no significant influence of single parenting (male/female) on the social adjustment of secondary school students. The independent variable is single parenting (male/female; while the dependent variable is social adjustment of secondary school students. Independent t-test analysis was adopted to test this hypothesis. The result is presented in Table 1 below:

Single parenting	Ν	X	SD	t-value
Male	346	34.42	3.69	
				-3.380*
Female	256	35.33	2.57	

Table 1: Independent t-test analysis of the influence of single parenting (male/female) on the social adjustment of secondary school students (N=602)

\*Significant at. 05level, critical t=1.96, df= 600.

The result in Table 1 revealed that the calculated t-value of -3.380 is higher than the critical t-value of 1.96 at 0.05 level of significance with 600 of degrees of freedom. With this result the null hypothesis that there is no significant influence of single parenting (male/female) on the social adjustment of secondary school students was rejected. This implies that there is a significant influence of single parenting (male/female) on the social adjustment of secondary school students.

## Hypothesis two

There is no significant influence of family type influence on social adjustment of secondary school students. The independent variable is family type (intact and single); while the dependent variable is social adjustment of secondary school students. Independent t-test analysis was adopted to test this hypothesis. The result is presented in Table 2 below:

Family type	Ν	X	SD	t-value
Intact	363	34.51	3.66	
				-2.762*
Single	259	35.26	2.59	

TABLE 2: Independent t-test analysis of the influence of family type influence on social adjustment of secondary school students (N=602) \*significant at. 05 level, critical t=1.96, df= 600.

The result in Table 2 revealed that the calculated t-values of-2.762 is higher than the critical t-value of 1.96 at 0.05 level of significance with 600 of degrees of freedom. With this result the null hypothesis that there is no significant influence of family type influence on social adjustment of secondary school students was accepted. This implies that there is a significant influence of family type influence on social adjustment of secondary school students.

# **Discussion of Findings**

This section is primarily concerned with the discussion of findings that emerged from the results of the analysis. The discussion is presented according to the variables of the study. The result of this hypothesis indicated that there is a significant influence of single parenting (male/female) on social adjustment of secondary school students. The findings of this hypothesis is contrary to the view of Wallerstein (1980) who observed that there are some women who see baby as status symbol, or as something of their own to hold and to love. To such women, it does not matter whether they are having such a baby out of wedlock. The negative effect is that such women, may be forced to make tough agonizing choices, to an extent of grappling with economic problems, emotional despair, loneliness and the stresses of rearing a child without a mate,

Several reasons have been advanced to explain why the single-parenting phenomenon is thriving. They include infertility, which may compel a female or male parent to adopt children, separation, due to incompatibility or childlessness, death of one of the spouse, the inability of the male spouse to live to marital expectation.

Nwachukwu (2007) also noted that children from single parent homes are more hostile, hyperactive and aggressive in nature. Many of the problems that single parents have are similar as those for two parents' family, but these problems seem more difficult to bear or manage when the home is being tutored by only one person.

The result of the second hypothesis showed that there is a significant influence of family type influence on social adjustment of secondary school students. The findings are in line with the view of Denga & Denga (2007) who while defining parenting in general term, said parenting is the activity which involves bringing up and looking after a child or children. This process, the authors assert, maybe carried out by biological or blood parents, or a parent in the case of single parents. The process may also involve surrogate parents (step –parents or special care-givers) who are not the real parents but are acting in loco parentis (in lieu of the biological or blood parents). Single relative parenting falls in the world of in loco parenting.

The environment of a single relative parent in the education of the child cannot be compared with biological parents (be they single biological parents) environment. The end product is the overall negative impact on the child or children which are ingredients for low self esteem, low self concept and social adjustment of adolescents in school. A combination of all these, can pre dispose the child to abuse, rejection and become tonics for imbibing anti-social behaviours like truancy in school, gang fighting, cultism, stealing, prostitution and other forms of emotional instability.

# **Conclusion and Recommendations**

Based on the results and findings of the study, the following conclusions were reached.

Single parenting (male/female) and family type significantly influence social adjustment of secondary school students. Based on the findings of the study, the following recommendations were made:

- 1. Parents should set clear standards for their children, monitor and limit what they set, and also allow children to develop autonomy.
- 2. Parents should be neither punitive nor aloof. Rather they should develop rules for their children and be affectionate with them. There should be cordial relationship between adolescents, and parents, staff and administration, participation in social and religious activities should be encouraged.
- 3. Parents should learn to accept, guide and be concerned over their children's needs to avoid academic, health and social problems. Parents and children should learn to maintain a cordial relationship and interaction to avoid family conflict and problem of the child's social interaction with others in school and society.
- 4. Parenting attention should be centered on organized abilities, needs, interest and desires. So that they can be expressed in a social context. This will enable the child to associate freely with others outside the home. Parents in this parenting styles or models should accept the child or individual with no personal regards of what the individual really is. This helps the child to develop a sense of self-belongingness, self esteem and independence because of the give-and-take, nature of the democratic parenting style. This is the most recommended style of parenting by child rearing experts.

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# Visions of the Future: Hope and Fear in an Age of Automation

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#### Abstract

This paper explores students' perceptions and feelings about their education, work choices and the skills they feel they will need to equip themselves for a new world increasingly shared with technology. There is wealth of literature detailing the impact of technological developments, and specifically Artificial Intelligence (AI), on the worlds of work and education (e.g. Ford, 2017; Brynjolfsson & McAfee, 2016; Aoun, 2017). A number of studies have been conducted to examine how susceptible jobs are to automation (e.g. Frey & Osborne 2017, Pajarinen & Rouvinen 2015, Arntz, Gregory & Zierahn 2016). This research aims to investigate students' hopes and fears for the future by examining their awareness of the technological developments that will affect them, how they plan to prepare themselves for the coming changes, and their attitudes to the impact of AI on the worlds of work and education. Qualitative and quantitative data was collected via online surveys, face to face discussion groups, students written work in the form of essays, and an online survey and discussion tool for real-time collective intelligence. Participants include both a general undergraduate student population studying in the UK and the US (n=356), and a specific group of undergraduate students studying a 'Robotics, Business and Society' course in the UK (n=53). The results and discussion focus on how to prepare students for increasing automation as well as the new challenges that AI presents for higher education more broadly. The findings provide valuable information around how students perceive their future in an increasingly automated work environment. As such, they provide guidance to educators looking to understand and best prepare today's workforce for the world of tomorrow; and will help students think critically about the kinds of future they could be navigating in a few years' time.

Keywords: Automation, Education, Workplace.

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#### Introduction

There is a large and growing body of work that explores the likely impact of AI on the worlds of work and on education (e.g. Aoun, 2017; Brynjolfsson & McAfee, 2016; Ford, 2017). With all of the hype surrounding technological unemployment, a number of studies have been conducted to examine how susceptible particular jobs are to computerisation (e.g. Arntz, Gregory & Zierahn 2016; Frey & Osborne 2017; Pajarinen & Rouvinen 2015). There are endless statements in articles about jobs being replaced, questions around what will happen in the future, and coverage about how prepared "we" as a workforce are for this future. The messaging in both the media and academic and practitioner literature alternates from alarmist and pessimistic ('the machines will take all of the jobs': e.g. Carr, 2015; Keen, 2015; Shewan, 2017) to more cautious and optimistic ('new jobs will emerge': e.g. Brynjolfsson & McAfee, 2017; Cowen, 2013; Ford, 2009; Lonsdale, 2017; Pistono, 2014).

It has been argued that unlike previous industrial revolutions, which affected some sectors more than others, the AI revolution is pandemic; it affects all sectors of the workforce, from blue collar jobs to white collar professionals (Ford, 2017). Amidst the fourth industrial revolution (Schwab, 2016) and industry 4.0, technological developments have enabled AI systems to perform many of the skills traditionally reserved for humans. In this sense, humans are facing a new kind of competitor when it comes to seeking employment. Robots do not need downtime, leadership or benefits and are completely loyal to their employers, generating relentless and consistent output. As technology changes, so too do the skills that workers need. Individuals must be able to make effective use of the tools of modern technology, as well as develop skills that technology cannot replace. Therefore, educators face the challenge of preparing today's students for the new world of work enabling students to navigate their way through shifting opportunities and make decisions about what seem to be increasingly uncertain employment prospects. However, less literature has investigated the perceptions, feelings and plans of these young individuals who will be navigating a future increasingly shared with technology.

#### Research Aim

This research focuses on a specific set of individuals: the current generation of undergraduate students on the cusp of entering the workplace. This group of young people are of particular interest to educators because of the unique position they occupy in history. They are the first generation who will see AI having a definite impact on their working lives – yet they have been educated in a system which is only just beginning to wake up to the implications of automation for the workforce. Many students are themselves not fully aware of what the future will hold. This research explores these students' visions of their futures, their awareness of how technological development may affect them, their hopes and fears, how they plan to prepare themselves for the coming changes, and their attitudes towards the impact of AI on the world of work and education.

#### Participants

#### Method

Data was collected from two different groups of participants:

- 1. Group 1 (n=356) was a group of students studying in the UK and the US aged between 16 and 26 years. The group was made up of slightly more males than females (56% and 43% respectively), and was from a mix of socio-economic backgrounds.
- 2. Group 2 (n=53) was a group of students registered in an undergraduate 'Robotics, Business and Society' course offered to second year students in a Bachelor of Business Administration program in the UK. These students took the course during the summer

term of 2018. The students were aged between 18 and 22 years. Again, the group was made up of more males than females (64% and 34% respectively). The university is fee-paying, and students tend to be relatively privileged in terms of socio-economic background.

# Design

Both qualitative and quantitative data was collected from these students.

# Qualitative data collection

Students from both Group 1 and Group 2 participated in a Crowdoscope (www.crowdoscope.com), which is an online survey and discussion tool for real-time collective intelligence. This tool allowed students to anonymously contribute to the following discussion: "AI is changing the future of Education and Work. How do you feel about the impact of these changes on your future career?".

Group 2, the smaller group of students on the Robotics course, took part in two focus groups (n=41 and n=44) at the end of the course that allowed them to discuss these same topics and share ideas and experiences. Group 2 also wrote essays at the end of their course (n=53). The essay question was composed of different sections as follows: "a) How has AI transformed an industry/sector (that you see yourself working for/in the new future) in the last 5 years? What further changes are predicted to happen within the next 5-10 years? b) What effects will these changes have on the workplace and on society in general? c) How do you think your university can help you develop the knowledge base, skills and attributes you need to flourish as a worker and a citizen in this new environment?"

# Quantitative Data Collection

Students in Group 2 also took part in online anonymous pre- and post- Robotics course surveys (n=50 and n=33 respectively), both of which featured a mixture of open, closed and multiple-choice questions. These questions asked students to think about a variety of topics including their knowledge of AI and automation, their attitudes towards it and the extent to which they feel prepared for a future in which AI plays an ever-increasing role at work.

# **Results and Discussion**

Data Analysis

Descriptive and inferential statistics were used to analyse the survey data. Focus group data was analysed thematically by organising excerpts of transcripts into categories which referred to the topic of speech (e.g. the human element of business), and the nature of the opinion that they were expressing (e.g. the human element of business is important/not important) (Boyatzis, 1998). Sentiment analysis (Lui, 2012) was used to examine students' open responses to the Crowdoscope discussion. Student essays were analysed using the content analysis method (White & Marsh, 2006). Recurring, aspects topics were coded and analysed to identify concepts and patterns in the data and recurring metaphors/analogies helped capture the meanings and emphasis expressed by participants.

All of the data was combined to present the findings in the results and discussion section around four key themes as follows:

1. What kinds of future do students envisage in an increasingly automated work environment?

Findings in this section include students' hopes and fears, and the benefits and challenges they see in a future increasingly shared with technology.

- How do students see themselves in these futures? Findings include how prepared students feel they are and the reported impact AI is having on their lives.
- 3. How do students plan to actively respond? Including what strategies students plan to develop to help them negotiate the changing workplace and what skills students think they need.
- 4. What advice students have for younger students and for educators.

# What Kinds of Future do Students Envisage?

Hopes and Fears

Sentiment analysis was used to examine Group 1's open responses to the Crowdoscope discussion and code them as shown in Table 1. Responses were sorted into groups depending on whether they expressed positive, negative, balanced (views with a positive point followed by a negative, or vice versa) or neutral views with regard to AI and its potential impact on the respondents lives.

Potential impact of AI on the future	% ( <i>n</i> =35 6)
Hopes (positive response)	31%
Fears (negative response)	18%
Balanced (mix of positive and negative response)	27%
Neutral (statement)	24%

 

 Table 1. Sentiment Analysis of student responses to Crowdoscope discussion on potential impact of AI on future (n=356).

As Table 1 shows, students' responses displayed mixed attitudes of fear and hope when asked to reflect on their feelings towards a workplace dominated by AI and automation. Almost one third (31%) of these students felt mostly hopeful about the future. Around one quarter (27%) felt both hope and anxiety, 18% felt mainly fear and 24% were emotionally neutral about the prospect of living and working with AI and automation.

The responses from Group 2, who took the Robotics course, showed that they expressed similar sentiments in terms of displaying a mixture of both hopes and fears. Survey responses from this group showed that before taking the course, the majority (96%) reported being worried about the changes AI could bring to their working lives. The majority (90%) also reported being enthusiastic about these potential changes.

The Robotics course asked students to research and reflect upon academic and industry sources on the topic of AI in the workplace and after studying the course many students reported feeling more empowered and less frightened of the future than they did pre-course.

Specifically, the post-course survey findings showed that 28% of students felt 'more enthusiastic' about the changes AI could bring to their working life. One quarter (25%) of students stated they felt 'more prepared' in some way to navigate a workplace which may be increasingly shared with AI. These students described how more knowledge, learnt on the course, led to them feeling more hopeful and seeing more opportunities in their futures. They felt that learning more about emerging technologies and ways in which they were likely to impact the workplace gave students a sense that there were things they could do as graduates to navigate the coming changes successfully rather than simply be overwhelmed by them. For example: "I see my future career with an amplified spectrum of opportunities and impact that could not be possible without AI."

### **Benefits**

Both groups of students who expressed hopes for the future felt AI would make life "easier," speaking of a workplace that was more "efficient" and "effective". They described how emerging technologies would "reduce costs", "save time", "eliminate the drudgery of repetitive tasks." Therefore, they would have more time for other interests, personal hobbies and more meaningful and interesting work: "AI is transforming the way we learn and perform our working activities. I feel AI will play an important role to bring efficiency to businesses by taking care of repetitive and time consuming activities and allowing the workforce to focus on more important activities and decision making."

In their essays and focus group discussions, the Robotics course, students were excited by the prospect of new kinds of jobs, of having more and better data to work with and of big data having the potential to change our lives for the better in all kinds of fields, from healthcare to clean energy to effective marketing techniques. Repeatedly, students spoke of AI and automation having the potential to completely disrupt and transform whole sectors of employment. Not all students were equally entranced by this vision of disruption, however. Other students' essays described potential downsides, for example "*developments [in AI] risk diluting the personal relationships between people to such a degree that the hospitality industry would simply not be the same*," and "*If there is no connection between employees and customers, we cannot talk about hospitality anymore, it should be called something else.*"

## **Challenges**

For both groups of students, by far the most commonly mentioned challenges were the "loss of jobs", "increased competition for existing jobs" and "growing social inequality." Many students also spoke of an "overreliance on technology," "privacy concerns," "reduced human interaction and communication," a "loss of skills/thoughts," as well as "an existential threat to humanity and what it means to be human."

Further details about concerns were taken from the students in the focus group discussions and essays from the Robotics course. When considering big data in their essays, these students reflected on the threat of loss of privacy and on the possibility of hacking, fraud and security breaches of all kinds. These students showed a lack of trust in AI, describing how they would feel safer if humans were in control of areas like military medicine and teaching (as they did not trust robots in these roles). The feelings of fear were sometimes underpinned by references to films and literature (e.g. Terminator and George Orwell's 1982). "I think that the way the artificial intelligence is going and how fast its evolving, is really scary, like for example the robot Sofia, who's the smartest robot in the world. Robots in the future will "steal" and replace humans, and this is totally stupid and things shouldn't be like that."

#### Paine Schofield

## Imagined Futures

Students feel that the future is not one thing. The future depends on who you are, and there are a range of potential futures. Based on all the findings from both groups of participants, the students imagined futures for individuals, for society and for industry and are summarised here:

For individuals, students imagine a better work life balance. They predict less social skills, and privacy than ever before. They are aware that not only their 'jobs' but also their 'careers' will be different. There will be new possibilities, which will demand different skills for this future: "AI and automation help advancement. Though these take away few jobs that are too tedious for humans to do, it definitely creates more opportunities and helps in the betterment of creating ease of life. It creates more challenging jobs which open new doors to learn and explore."

For society, students describe a "bright future," with "enriched lives" (through innovation, human development and progress). At the same time, students are concerned about human and social decline, including: "higher inequality", "higher crime rates" and "social unrest." They talk of social values and norms changing. One student described: "I'm mostly concerned about the gap that it [AI] could create because a lot of middle class jobs will be lost, and it would allow wealthy owners to reduce costs and become wealthier and then middle class would be destroyed and that would create imbalance in the world and there would be a lot of fighting and hatred between rich and poor because of the gap. So, I don't know it scares me that it might become an apocalypse."

For industry, some of the students referred specifically to the industries they were hoping to work in and predicted AI's impact on those. In all cases both hopes and fears were described. For example, the job losses and transfer of power to AI on one hand, to a more personalised, accurate and possibly inclusive world on the other hand. Overall, students described a painful transition period, with human responsibility to regulate and steer AI developments in a positive direction.

How Do Students See Themselves in These Futures? Impact of AI

Based on the pre- course survey data of students on the Robotics course, all (100%) of the students feel that AI will impact their future career to some degree, and just over half (51%) feel that the impact is 'very likely,' as can be seen in Table 2.

How likely AI will impact future career	% (n=46)
Very Likely	51%
Somewhat Likely	49%
Not At All Likely	0%

Table 2. "How likely do you think it is that AI will impact your future career?" (pre-survey; n=49).

The post course survey data shows that after studying the robotics course, 55% of the students think that AI is even 'more likely' to impact their career. One student described the relationship between education and the workplace and the impact of AI on both: "...AI will impact education [and] it will impact jobs because both will go together. If Jobs change then education needs to change. We study in order to get a job in the future and to acquire the knowledge that is needed to do so."

# Preparation for a Future Shared with AI

Despite this certainty about the impact of AI, there is a mixture of findings around how prepared the students in Group 2 feel to navigate this future workplace. As can be seen in Table 3, prior to taking the Robotics course, almost two thirds (63%) of students confessed to feeling only 'somewhat prepared' for the future, with a further one fifth (17%) feeling completely 'unprepared' and only (20%) feeling confident and 'very prepared' for what is to come.

How prepared to navigate a workplace increasingly shared with AI	% (n=46)
Very Prepared	20%
Somewhat Prepared	63%
Not At All Prepared	17%

Table 3. "How prepared do you feel to navigate a workplace increasingly shared with AI" (pre-survey; n=46).

These findings may be explained in part by the current generation of students who took part in this research. As mentioned previously, these students' careers will undoubtedly be affected by AI, yet so far education has failed to prepare them. Discussions during the focus groups and students' essays responses showed that many students are not fully aware of what the future will hold, and this uncertainty may be influencing how prepared they feel.

A significant majority of these students feel that their education has failed to prepare them for this future. For example, "...I have been wondering if I am ready to go into the workplace since I believe that no university can prepare you for a world that is changing so fast..." The uncertainty and anxiety students feel as is contributing to a sense of insecurity and fearfulness. For example, "Students across the world will have to face the possibility that perhaps what they are dedicating their lives to studying right now, at this very moment, may soon become redundant... Before taking the class, I would never have guessed that AI was this close to becoming a worldwide innovation that would perhaps take over ...our home or business environment." Following studying the Robotics course, 25% of respondents claimed to feel less anxious and better prepared for the future, and the qualitative data from the focus groups showed that this was linked to the knowledge they gained during the course. In their end of course essays, several students expressed a desire for more courses of a similar nature, arguing that students need to be better prepared to be strategic about continually improving and upgrading their skillset and mind set in order to cope with the coming changes in the workplace. With the right knowledge and skills, they felt, said changes could work for them rather than against them. As one student expressed, "we need to act now to gain a deep understanding and prepare ourselves for the digital age, which will also require policy changes to our educational systems."

Some students described how universities need to adapt to remain relevant for the future of work, and how it is the responsibility of the educational institutes to prepare them. At the same time, many students also described their own responsibility to prepare themselves to adapt to changes and remain relevant. Overall, it was clear from the findings that universities must do more to discuss this topic and also relieve feelings of uncertainty, particularly in this generation of students.

# A Level of Scepticism

Robotics course students' essays and focus group data, revealed a sense of "not me" and "not yet." Perhaps due to optimism bias, the students felt that the low-skilled workers and peers with fewer educational qualifications would be negatively impacted, not university students like themselves. A significant minority also saw their future selves as employers rather than employees, and concentrated on the increased savings and profits they were likely to amass thanks to automation and AI. This view remained even after students were exposed to texts that described the risk to white-collar workers– in some cases, even more so than blue-collar workers (Ford, 2017). For example, "I'm an entrepreneur and marketing major and I don't intend to work with AI, it's not that I don't want to, but nobody's perfect and I feel like as an entrepreneur, you have to make mistakes to learn from it, so you can grow. But if you have an AI then it's almost too perfect, so you don't get to make mistakes, or learn new things, so I personally am not interested in it and I don't care if I learn about the AI in the workplace". The Robotics students were predominantly from relatively privileged backgrounds which may explain why many felt confident that with the right preparation they could navigate these changes successfully.

Several students also described how any impact of AI would not be felt by them for a long time. For example: "I think we should be still confident because I think for our generation AI will play a role but not a major role, not a complete major role that you could actually become useless" and "I don't know, that's in a long time, I don't think it will be in our generation where it will be redundant."

## How Do Students Plan to Respond?

Participants in Group 2 were asked in the pre-Robotics course survey what the top three skills they felt they needed to develop for a career increasingly shared with AI. Forty-three students provided a total of 114 responses, as summarised in Table 4. The participants were asked the question again after completing the Robotics course, and 22 students provided a total of 62 responses, as summarised in Table 4.

	Pre course	Post course
Skill	% ( <i>n</i> =114)	% ( <i>n</i> =62)
Computing/Technology	29%	21%
Understanding AI	16%	10%
Human/Soft skills	16%	36%
Adaptability	10%	13%
Mathematics/Analysis/Engineering	6%	6%

Table 4. "Top skills need to develop for a career increasingly shared with AI" (pre-survey, n=114; post-survey, n=62).

Table 4 shows that prior to studying the robotics course the most common skill listed by students as one they needed to develop for a career increasingly shared with AI was "Computing/Technology," 29% of students listed this skill. They felt that this would give them a competitive advantage over their peers. This was followed by 16% of students listing "Understanding AI" and 16% listing "Human and Soft Skills," such as ethics and creativity. 10% thought they should try to improve their own 'adaptability' and 6% thought they should study mathematics or engineering.

After they took the course, the skill listed by the largest percentage of students (36%) was "Human and Soft skills." Students felt that these were the skills that AI was less likely to take over, a view that is highlighted in some of the literature (e.g. Aoun, 2017). From the qualitative data gathered in the focus group discussions and essays it was clear that students perceived qualities and abilities such as complex decision making, critical thinking, intuition, emotional intelligence, grit and entrepreneurship as areas that are exclusively human and are therefore less likely to be replaced by AI. The students felt that being human made them more valuable e.g. "*I think our emotions and understanding of subjects like philosophy and critical thinking that involves emotion in a positive way could never be done by AI because it can't be influenced by anger which would influence a person's behaviour or love. I think that already makes us a lot more valuable*". Students also described the need for educators to help them with this. For example, one student stated "[*Educators*] could increase the range of subjects offered and concentrate on the skills that will be needed rather than on information that is currently losing relevance."

More students listed "adaptability" as a skill (16%) after studying the Robotics course. Students felt that the future workplace will be characterised by continual and rapid changes and that they need to be prepared to constantly update skills and knowledge and being prepared for change. For example, as one student stated, "*I think I have more broad knowledge about everything so you can be flexible and adapt to new situations because, for example, if I specialise in one thing and they find a robot that can do it and in five years' time maybe I won't have a place to work, So, it's better if I just try to have broad knowledge about everything so I can be flexible and adapt."* 

Another feeling expressed by some students was that human beings need to guard against skills erosion by keeping their brains sharp. For example, "[schools should] introduce classes that emphasise the importance of training the brain and learning without always relying on AI." The idea here is that to compete with the machines, we need to keep our brains sharp and ensure that we can be self-reliant rather than dependent on AI.

Overall, students from both groups emphasised the need to keep skills updated, be flexible, stay familiar with developments in AI and keep themselves marketable, so as not to fall behind the technology trends. For example, "*I think, for me, it's adaptation, I think that's really important these days like everything is changing every day and all these things and I think if you can adapt well to any situation, especially in the case of robots, then you won't have a problem.*"

#### What Advice do These Students Have

Students who took part in the robotics course were asked in the post course survey for advice for younger students and educational institutions. These responses were combined with any responses from the focus groups, essays and Crowdoscope that also referred to advice in this area.

# Advice for Younger Students

Participants counselled younger students to be:

- adaptable and stay flexible to changes that can impact future education and careers: *"The only constant in the world is change and you must be ready to adapt to technological changes that may impact the course of your education and career"*
- learn IT skills, and keep them up to date, and be prepared to invest time and energy learning about AI, and how this will affect any career you are interested in: "Invest thought into the development of AI and learn to integrate it into your choice and life as it is developing and gaining presence and it is important to learn to adapt to it now in order to not miss out on opportunities in the future"
- be alert and informed, gather knowledge (though internships/ experience) to make informed decisions, and learn to spot trends and react to them fast
- keep your options open, think broadly, rather than vocationally, pursue a broad range of interests, and take advantage of any learning opportunities (particularly online ones): "I think if you want to survive in a world where AI is becoming a lot more powerful, you need as many skills as possible"
- follow your passion: "Do something you are passionate about rather than a lucrative career as this could cease to exist by the time you are qualified

Overall, students emphasised an appreciation that lifelong learning is more than a slogan - it is a survival strategy and they emphasised that all students should be aware of this.

# Advice for Educators: Content

Students provided the following advice for educators in terms of content.

- Students declared themselves hungry for all kinds of courses theoretical ones and also practical ones. They want to be offered courses on:
  - o programming: coding; technology engineering; data analytics
  - AI and Emerging Technologies: how different industries are being changed; AI in real businesses, what is happening already, what might happen.
  - humanities: history of humanity, psychology, sociology. Underpinning this was a sense of the need to preserve humanity in itself and guarding against artificial versions of humans.
  - what it is to be human: ethics and moral judgement; people skills; writing; psychology; creative. Participants felt that with the increase in AI and technology, there was a responsibility to use and implement it in an ethical and sustainable way so that in future when they were tasked with working alongside AI they had a solid and moral basis to make decisions from.
- Students urged educators to embed the impact of technological development and AI into *all* subjects taught: "*create more classes on AI alone, and then extra classes on how AI affects each major that is offered*". Students emphasized the importance of the core subjects: "*it is a great idea to redesign for an advanced world. However, the very basis of a business school and its core should not be forgotten*"

# Advice for Educators: Delivery

Advice to educators in terms of delivery of content much of the advice focused on the importance of hands on, real life, practical experience, including asking educators to:

- use new technologies, emphasising the importance of linking to real examples and case studies
- use AI in the classroom, and be allowed to experiment with new forms of AI. For example:

- "support small 'sandbox' projects where students can experiment with business ideas involving AI"
- "Schools should have a 'Maker's Lab' where they can experiment (with support) with 3D printing, Virtual Reality and other cutting-edge tools"
- offer internships with companies using AI, or at least closer relationships with organisations/businesses
- visits and field trips to see AI in action in industry
- seminars with expert speakers to talk about ongoing changes and development in different companies and sectors.

Finally, many students referred to the importance of keeping the traditional, human aspect of teaching. Again, there was this sense that in an age of rapid technological invention, it remains all the more important to understand and value our humanity.

## Conclusion

The research found that students envisage a future with AI and automation that contains both positive and negative elements. This particular generation of students believe the future holds many opportunities for those who are prepared, but is also threatening in many ways. Those students who were the best informed had clearer thoughts and insights in the range of futures that were likely and the best ways these futures could be negotiated.

The students who discuss how they actively plan to respond say they will do this by being alert to emerging technologies and doing their best to learn about them and get practical experience from them. The key advice students have for younger students and for educators is to learn about AI and automation, make sure to have the necessary skills but not to forget what makes one human: "*Your humanity is important and valuable, maybe even more so in an age of automation and AI.*"

The findings from this research provide valuable information around student's education and future skills needed. The findings can inform proposed changes to undergraduate and higher education curriculums more broadly, enabling us to better prepare students for the future.

Finally, future research in this area should follow this demographic into the workforce, to look in more detail at how they actually navigate the impacts of AI throughout their early careers. It would also be interesting to explore all of the above themes with HR managers and leaders, and also educators, to provide further insight in to how these stakeholders can work together to prepare everyone for a future increasingly shared with technology.

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# **Rural Youth 21st Century Workforce Ready**

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## Abstract

The educational system in Indonesia is facing significant quality and access challenges, and unemployment remains a real concern. Indonesian youth struggle to find their place in the national workforce which is undergoing significant change as a consequence of the burgeoning of information communications technologies. In 2007, the non-formal education center, called the Slukat Learning Center (SLC), was established in rural Gianyar, Bali to improve employment opportunities and facilitate empowerment by providing educational opportunities for rural children and youth. This paper reports early finding from a research project exploring how the curriculum at the learning center has been able to generate successful outcomes. Drawing upon data from interviews with the SLC Chairman and 18 SLC alumni, this paper focused upon how the curriculum has been able to empower rural Balinese youth in Gianyar, in ways that have enabled them to become future workforce ready. Aiming to contribute to the research in the field on youth empowerment through non-formal education, the data were analyzed using Bourdieu's Social Reproduction Theory. The preliminary analysis reported here indicates that SLC can be considered a field within which the curriculum facilitates youth empowerment through supporting the construction of a new habitus and acquisition of a range of economic, cultural and social capitals.

**Keywords**: Youth Empowerment, Non-formal Education, 21<sup>st</sup> Century Skills, Social Reproduction Theory, Bourdieu

### Introduction

Indonesia is the fourth largest (by population) nation in the world. It is ranked 74 out of 130 globally and 6th out of the 10 member ASEAN countries for developing and deploying human capital potential, based on the World Economic Forum Human Capital Report 2016. This positioning indicates that Indonesia still has considerable areas for improvement in developing its human capital. One area of real concern remains unemployment. While the national unemployment rate is relatively low, at 6% (Human Capital Report, 2016) the rate of unemployment for those aged 15 and 24 is 21.58 million young people, nearly 10 % of the total population. It continues to increase by roughly 1.7 million per year (World Bank, 2017). The pace of employment growth is much slower than population growth and the high unemployment among those aged 15 to 24 indicates that graduates from Indonesian universities, vocational schools and secondary schools are encountering difficulties finding their place in the national workforce. Indonesia should have enjoyed the potential demographic dividend from this cohort. However, their failure to secure employment not only exacerbates their own, but also local, regional and national levels of poverty.

For Indonesia, along with unemployment, poverty is an entrenched social and economic challenge. Indonesia's current level of poverty sits at around 8.3% of the population, roughly equivalent to 21 million people. The World Bank defines this as comprising those "living in extreme poverty," or below US \$1.90 per day. Furthermore, "approximately 40% of the entire population remains vulnerable to falling into poverty, as their income hovers only marginally above the national poverty line" as stated in the World Bank Indonesia Website.

The impact of the national challenges of both poverty and education can be observed at regional and local levels, particularly in Gianyar, in the mid-east coast of Bali. Bali is part of Indonesia and has been known as one of the top tourist destinations in the world. Bali was named as the World's Best Destination 2017 by the prestigious Trip Advisor Travelers' Choice Award. Even though the tourism industry is attracting millions of tourists, education and unemployment also remain a challenge (Tamatea & Pramitasari, 2018). This can be seen in a village called Keramas, Gianyar Bali which is located 40 kilometers east of the capital city of Bali. In 2004-2005, the number of people looking for employment in Gianyar over the age of 15 increased 28% from 13,135 to 18,475. 83% of these people had only completed primary levels of education. After observing this dilemma in 2007, the Slukat Learning Center (SLC), a free, after school, non-formal education center was established with the purpose to improve employment opportunities and facilitate empowerment for children and youth in rural Gianyar Bali.

## **Literature Review**

The Impact of Digital Technology Upon the Future Workforce

Digital technologies have revolutionised how people work and live. According to the recent Accenture-New-Skills-Now-Report (2017), the rapid pace and scale of technological change has disrupted labour markets and created challenges for the future workforce. The report also indicated employment opportunities requiring digital skills will grow by 12 percent by 2024, along with the increasing rate of automation. Arguably those with lower levels of education will be increasingly disadvantaged by these digital trends.

The Future of Jobs Report 2018 from the World Economic Forum highlighted the top trending in-demand of skills by 2022. Analytical thinking and innovation were predicted to be in highest demand. Technology competency such as programming and technology design are employment areas continuously increasing in demand along with the need for skills around creativity, originality and initiative. It is predicted that there will be a continued fall in demand for manual skills and employment opportunities requiring physical abilities alone as stated in the Future of Job Report (2018).

The Role of Non- Formal Education in Empowering Youth

To minimize the risk of increased disadvantage and employment drop-out, rural youths arguably required educational opportunities providing access to the new skills required by the new 21 century workforce. SLC as a non-formal education provider aims to provide these skills so that its graduates can think critically and creatively to solve problems, communicate effectively, collaborate, find and assess information quickly, and effectively use technology (Soulé & Warrick, 2015). Moreover, (Souto-Otero, Ulicna, Schaepkens, & Bognar) stated:

the purpose of non-formal education, youth organizations are to enhance the skills and competences that empower young people in their personal development - boosting their self-esteem and awareness of their identity-helping them to become responsible and active citizens in their communities and to access and stay in labor market (2013, p. 16)

This resonates with the founders' fundamental mission in establishing a non-formal education learning center.

According to empowerment theory, engaging youth in pro-social, meaningful, and community-enhancing activities enables youth to define and control their life, and helps them to gain vital skills, responsibilities, and the confidence necessary to become productive and healthy adults (Perkins & Zimmerman, 1995). These foci resonate with Blaak, Openjuru, and Zeelen (2013) view on the role of non-formal education, which is to provide practical empowerment. Practical empowerment would not only include acquiring marketable skills and business skills, but also decision-making skills, knowledge to make informed decisions, social skills to manage social support, awareness of one's position and rights in society in addition to the development of strong self-esteem and assertiveness.

Notwithstanding these perspectives, the Slukat Learning Center's approach to youth empowerment through the provision of non-formal education is particularly aligned with the work of Morton and Montgomery (2011) who argue that youth empowerment is a process by which a young person's social environment intentionally redefines his or her role as one of value, ability, autonomy, and contribution. Within this empowering environment, attitudes and behaviors change to reflect the redefined roles in which youth may find themselves (Morton & Montgomery, 2011). Non-formal education at SLC possibly creates 'bondedness' or social capital to access new ideas, skills, support, and resources that promote healthier communities and individual socio-economic mobility since its grounded by positive and trust-based interactions among all SLC stakeholders including staff and students.

## **Research Methodology**

## Research Aim

Over the period of a decade, more than 1000 students have participated in SLC programs, and while this may seem a lot, it should be noted that the total population of students aged 10 to 24 in Gianyar (Bali) alone is 103,474 (BPS Gianyar, 2014). Initial observations have indicated that some of the alumni who have completed the youth empowerment program have gained skills and increased self-confidence and motivation, which has led them to continue with further education and achieve improved employability.

The research paper aims to understand how SLC's curriculum facilitates rural youth empowerment in preparing them for the future workforce. To support this investigation of the curriculum, the project aims to answer the following research questions:

• How has the curriculum evolved over the past decade to meet the 21<sup>st</sup> century workforce?

- What are the skills acquired by students in SLC?
- How do the skills acquired at SLC impact the student's life?

## **Research** Orientation

The research project is framed by a broadly qualitative research orientation. It aims to generate a rich in-depth description of the programs which comprise the SLC's curriculum in developing empowerment for rural youth (Mertens, 2005). Thus far, this research orientation and accompanying qualitative research methods have supported exploring students' lives, behaviors, and indeed their stories and meanings that are connected with their experience of non-formal education at SLC. The research project is framed by the critical paradigm which allows for a better understanding of how socio-economic factors may impact the students' relationship to the curriculum and learning experiences (Tamatea & Pramitasari, 2018).

# Participants

The approach in recruiting the participants were conducted in two ways. The SLC Chairman, Mr. I Gusti Agung Rai was invited personally for an interview and the alumni invitation was posted in various communication channels including SLC's Facebook page, Instagram and the Alumni's Network Group. 18 SLC alumni who have since graduated from High School and are currently either continuing higher degree education, developing their own businesses or working in an institution/organization participated in the research. Their age ranged from 19 and 26 with the cohort comprising 9 males and 9 females.

# Data Generation

Data were collected from a range of sources. The primary data were obtained from interviews and the secondary data were generated from reviews of documents, videos and the alumni's social media and scholarship application essay. The interview with the chairman was conducted 'face to face', while the interviews with the alumni were conducted online using WhatsApp as the alumni were located in different part of the world including: 4 are in different parts of Bali, Indonesia, one in Java, one in Kalimantan, Indonesia, one in the United Kingdom and one in New Zealand.

# Data Analysis

The data collected through documents and semi-structured interviews were subject to a thorough process of data analysis. The audio recordings of the interviews were transcribed by a third party. The data analysis process aimed to identify key themes, based on Bourdieu's Social Reproduction theory (Bourdieu & Passeron, 1990) with its emphasis upon the field, capital (economic, social and cultural) and habitus. According to Webb, Schirato and Danaher (2002), Bourdieu's Social Reproduction theory provides the most significant and successful attempt to make sense of the relationship between objective social structures (institutions, discourses, fields, ideologies) and everyday practices (what people do, and why they do it). The data were analyzed for common and differentiated themes related to research questions on how the curriculum has evolved to develop skills that meet the 21<sup>st</sup> century workforce ready, and the graduates' experience of this.

Field

### **Preliminary Research Findings**

Tamatea and Pramitasari (as cited in Bourdieu and Wacquant, 1992, p. 101) stated that field "is always inhabited by individuals in a relationship with others who are framed by its 'rules of the game' or *doxa*. Moreover, Ignatow and Robinson (2017, p. 95) assert:

Bourdieu defines a field as a network or configuration of relations between social positions in which positions and their interrelations are determined by the distribution of economic, social, and cultural capital. Though the borders between fields are porous, each field is characterized by its own logic (the 'rules of the game').

#### SLC as Non-Formal Education

Based on the above understandings, the field of Slukat Learning Center (SLC) can be classified as a non-formal education according to Indonesian's Law no. 20 of 2003. This law states that educational paths consist of formal, non-formal and informal education. Article 26 explains that non-formal education is a form of education organized for citizens who need educational services that are substitutes, enhancements, and/or complementary to formal education, supporting lifelong education. Article 26 also explains the aim of non-formal education, which is to develop the potential of learners with emphasis on the acquisition of knowledge, functional skills and professional development. Expressed otherwise by Coombs and Ahmed (1974, p. 251) "non-formal education is simply any organized activity with educational purposes carried on outside the highly structured framework of formal education systems as they exist today". Arguably, SLC can thus be identified as an experimental and innovative non-formal education provider. It has significant independence from governments, and a capacity to respond to emerging learning needs that develop as societies evolve. It aims for rural youth in Keramas Village in overcoming their disadvantage by equipping them with skills, knowledge and behaviours to be ready for the workforce.

#### The Evolution of the Program

To achieve its mission, SLC's program is based on four pillars which comprise: character and leadership development, globalisation, information technology and local wisdom. These four pillars are integrated and they interconnect through various curriculum learning and teaching activities including the English and Computer Class which is supported by international volunteers. Student interaction with international volunteers helps them acquire intercultural and global understanding, which arguably improves their self-confidence and motivation. Local wisdom informs the curriculum through student participation in practicing yoga, learning Balinese dance and preparing Balinese offerings (Banten) and cuisine (*Dapur Bali*); activities that are facilitated by SLC's alumni and parents. Development of student character and leadership skills has occurred through establishment of the Slukat Student Organization (SSO) where students can apply, construct and implement an action learning project. To support rural youth readiness for the workforce, SLC has also conducted vocational workshops including those focused upon Hospitality, Tourism and Entrepreneurship. In December 2018, SLC launched a coding class for its students.

The Slukat Learning Centre overall program was designed to meet both academic and workforce requirements. Within a decade of its operation the program has evolved based on local, national and global trends with respect to workforce requirements. This journey of evolution and change is represented below.

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The rural youth English skills focused was set up in 2007 with the understanding that the ability to speak English would provide rural youth with an advantage in relation to work in the tourism sector. After five years of operation, it was identified that the need to have basic IT skills and have a good character were also important to secure employability. Thus, character development and basic IT skills were added to the curriculum. This was followed by the establishment of Slukat Student Organisation to support the development of personal leadership skills and the development organizational skills in 2012.

#### The Changing Socioeconomic Condition of Keramas Village

Meanwhile, the local socioeconomic environment of Keramas Village was also changing, from an agriculture focus to a tourism community. With Keramas beach being one of the best surfing spots in Bali, the impact of this was the increase in the number of hotels, restaurants and tourist attractions.

To respond to the changing environment, SLC - supported by the Accenture Skill to Succeed program - conducted a local market assessment to understand the employment and business opportunities. The findings of the assessment indicated that there was still a considerable demand for labour in the Tourism and Services sectors, however, labour skills need to be complimented with improved soft skills. It was noted that there was potential for youth to start a business to capitalize the growth in the Tourism and Services. The recommendation arising from the assessment was to build tourism and hospitality industry skills. Based on this recommendation, the SLC curriculum started to conduct tour guide skill in 2014 and tour operator experience facilitated by conducting an experiential learning program in 2015. An entrepreneurship workshop was conducted in 2017, and as the result of this two participants have since started their own business.

To anticipate the digital technology revolution, SLC launched a coding program in December 2018. The purpose of the coding class is to introduce rural youth for an increasingly in demand 21<sup>st</sup> century skill. It is hoped that acquiring coding skills will advantage SLC graduates in finding jobs in this digital world.

SLC as a Non-formal education provider adjusts the overall program continuously. This is a consequence of seeking 'alignment' with the needs of the wider context including national and global economic, social and political structures. It is also adjusted in relation to local needs including those of the students. This approach resonates with Blaak et al. (2013) who recommended the need for a holistic review and implementation of development strategies, keeping in mind the needs of local communities.

# Habitus

"Habitus is constituted in practice and is always oriented towards practical functions" Bourdieu (1990 p. 52), he further elaborates:

the conditionings associated with a particular class of conditions of existence produce habitus, systems of durable, transposable dispositions, structured structures predisposed to function a structuring structure, that is as principles which generate and organize practices and representations that can be objectively adapted to their outcomes without presupposing a conscious aiming at ends or an express mastery of the operations necessary in order to attain them (p. 53).

Elsewhere, the habitus is described as "a concept that expresses, on the one hand, the way in which individuals 'become themselves'—develop attitudes and dispositions—and, on the other hand, the ways in which those individuals engage in practices" Webb et al. (2002, p. xi).

Arguably SLC informs the student habitus in that facilitates the internalization of practices, perceptions and values which inform student behaviour. According to the Chairman, the curriculum is based on (habitus informing) philosophies which are interrelated and introduced sequentially. These include:

- a. PICU to inspire the students to have self-worth and appreciation of the Balinese culture. Thus, the students will be accepted in the communities such as school, village or workplace
- b. PACU to encourage students in facing the globalization by providing the ability to access information and knowledge. These skills can support their contribution in the society
- c. PECUT to empower the student's self-efficacy for them to compete in the workplace or further study. This will help them to be a trusted leader.

The philosophies are represented in diagram below:



The PICU activities that SLC conducts are character building and personal leadership, Balinese local wisdom and saving the environment. Whereas, PACU activities are English and Basic IT classes, while PECUT's activities relate to action learning programs such as the Slukat Student Organization's events, hospitality industry training and the coding class.

With this in mind, SLC activities aim to shape the possibilities, freedoms, necessities and opportunities that condition the student's perception of their self-efficacy and self-worth which will enhance their personal development to be ready for the workforce.

Capital

"Capital can be understood as the "energy" that drives the development of a field through time" Moore (2014, p.105). It is a generalized "resource" that can assume monetary and nonmonetary forms as well as tangible and intangible forms. Bourdieu (1986) distinguishes between three general types of capital: economic capital, cultural and social capital.

The SLC's philosophies of PICU is perhaps a source of cultural capital which exists in various forms. It includes a focus upon long-standing dispositions and habits acquired in the socialization process, the accumulation of valued cultural and formal educational qualifications and training. The students seem to have acquired politeness and courteousness, developed self-confidence to interact with other people from different nationalities and have gained effective communication skills to interact with different type of nationalities in different settings (school, workplace, conference, organization). Whereas PACU is a source of economic capital, which Bourdieu refers as monetary income as well as other financial resources and assets. The students seem to have gained skills that enable them to generate monetary income such as English skills, Basic IT Skills and Leadership and organizational skills. Lastly PECUT can possibly be associated with social capital which Bourdieu defined as the sum of the actual and potential resources that can be mobilized through membership in social networks of actors and organizations (Bourdieu, 1986). Analysis of the data indicates that the students valued the local, national and international social networks which support their employment opportunities, education funding opportunities, and socio-economic project funding opportunities.

The Alumni reported that because of their participation in the SLC curriculum, they have acquired the following beneficial capabilities:

- 1. English Skills and Basic IT Skills;
- 2. A mindset of becoming visionary, creative, innovative, resilience and courage;
- 3. An understanding and belief in the value of trustworthiness, integrity, courtesy and patience.
- 4. Personal leadership through the increase and improvement in self-confidence, motivation, discipline and time management;
- 5. Organizational skills in collaboration, leading others and effective communication.

A number of the above capabilities which the alumni have acquired are skills that are important for job success such as communication, collaboration, creativity and innovation (Soulé & Warrick, 2015).

Evidence of Youth Empowerment

These acquired capabilities have arguably empowered SLC graduates to change their habitus from one initially framed by low motivation, expectations and self-belief, to one sufficiently confident to pursue their dreams; indeed, sufficiently confident to begin to dream. These alumni have since gone on to achieve outcomes that would have arguably been beyond their expectations upon initially joining SLC. These have included:

- Being awarded an overseas and domestic bachelor and master degree Scholarship (UK, New Zealand, US and Indonesia)
- Participation in International Exchange Programs in Japan, Singapore and US.
- Pursuing a 'dream job' in hospitality industry, military and nursing
- Becoming an entrepreneur in the creative industry, as a web developer, professional dancer, and video and photography professional.
- Continuing into a higher education degree.
- Financially supporting themselves and their family.
- Mentoring and inspiring other students.

- Becoming leaders in their school and communities.
- Creating a social movement to save environment and improve public health

An illustration of how the alumni have arguably been empowered is the life journey of a financially disadvantaged, shy and low self-esteem girl at the time joining SLC. Within has five years, subsequently obtained a scholarship to continue her Bachelor degree in Public Health at the University of Udayana, Bali and has been awarded as one of the Most Outstanding Student. Moreover, she has since been selected to participate in a Youth Leadership Program in Japan, Thailand and Singapore and has conducted the Let's Share (*Mari Berbagi*) Movement to increase rural youth's knowledge and broaden their horizons.

Another example is that of a young man who attended SLC at the age of 13 years old when he was feeling hopeless and lacked motivation due to his disadvantaged family background. At the age of 19, he became a founder and CEO of a web development company and has since taught web design and web programming to rural youth. Arguably, both of these SLC graduates have not only enhanced their self-efficacy and self-worth, they have created a better livelihood for themselves. What's more, they are now in the position to inspire other students to do the same. By engaging young people as valued contributors, empowering programs aim to improve young people's beliefs in their own abilities to achieve tasks and overcome obstacles (Jennings, Parra-Medina, Hilfinger-Messias, & McLoughlin, 2006). Consequently, data obtained from SLC alumni, such as those in the examples above, strongly suggest that SLC students acquire empowerment by "doing and being educated." They have seemingly acquired capabilities and the freedom to enjoy 'capital' related opportunities "to improve the quality of their lives" (Seeberg, 2014).

#### Conclusion

SLC has been operating for more than a decade and can be identified as an experimental and innovative non-formal education provider. It has significant independence from governments, and a capacity to respond to emerging learning needs that develop as societies evolve. However, SLC is small and may become unsustainable due to limited resources. Some of the program and quality of learning delivery are inconsistent since these often depend upon sponsorship and volunteers. There is also decline in student participation due to the Government's initiatives of conducting full day school programs, which prevent students coming to the learning centre.

In conclusion, however, these preliminary research findings indicate "SLC" seems to contribute to student empowerment through the provision of a range of capital which have a positive impact upon the student habitus. Importantly the data show that English, basic IT usage, a new mindset, leadership and organizational skills have empowered them to both seek and obtain improved employability or continuing education opportunities that hopefully will lead them to a better livelihood. This conclusion, however, is based upon early and preliminary findings generated from a cohort of alumni. The research project will now begin to generate data from a range of other sources including current students, parents and head of communities to provide a more complete (if not complex) mapping of how the Slukat Learning Center curriculum supports rural Balinese youth to be ready for the 21st century workforce.

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# Readiness to Change Towards More Balanced, Personalised and Creative Education

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## Abstract

A more flexible approach to education and readiness to make changes, necessary more than ever before, appears nowadays to be an element of high importance if any real renewal and improvement of education is to come into existence, as expected by a variety of stakeholders (participants of education, schools, higher education facilities, employers). Ken Robinson (Robinson, Aronica, 2015) perceives the need of change in the nature and direction of educational reforms. He proposes a more holistic approach "which carries about the variety of talents in all our children." This requires education to be more balanced, personalised and creative. The objective of the paper is the presentation of theoretical and empirical aspects of education focused on pupils. The analysis covers the dimension of readiness to change of the persons who prepare to perform the role of teachers, that is those on whom the qualitative change in education will depend in the future. The questionnaire study included 136 subjects, participants of postgraduate studies, with rich occupational experience, preparing to perform the role of teachers. The study employed the Change-Ready Scale by Kriegel and Brandt (1996). 7 categories were measured which all make up the method of carrying out own work: inventiveness, passion, self-confidence, optimism, taking risk, adaptability, and tolerance to uncertainty. The results of the study encouraged the initiation of actions for promotion of personalised education, adjusting it to the needs and possibilities of anyone, practical application in daily life.

Keywords: Readiness to change, Balanced education, Creative education

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#### Introduction

The modern civilisation challenges, including the progress of technology in daily life applications, strongly affect the perception of the world by the current generations- people of various ages (younger and older), people of various professions. Education is one of the areas that are subject to strong transformations, and on one hand related to intense development of the new media realm, new technologies, on the other hand related to continuous changes within the school and the education system. The process of the reform of the education system that is being implemented in many countries (including Poland) concentrates in a small degree on the achievements of humanistic and social fields: pedagogy, psychology, sociology, philosophy, with economy and political and commercial aspects being more recognised.

Shalberg (2011), studying educational systems in many countries, noticed that what they share is high similarity. Teaching curricula are more and more standardised to comply with the international studies of achievements of disciples, who worldwide learn from the materials provided by global suppliers. Educational reforms in various countries are also implemented in accordance with similar templates. So the path to changes in the education systems is copied, which I call the Global Development of Educational Reforms or GERM. It is like an epidemic that spreads and infects education systems with viruses. It moves owing to experts, media and politicians. Educational systems make use of politicians to infect further countries. In consequence, schools fall ill, teachers do not feel well and children learn less.

Ken Robinson (Robinson, Aronica, 2015) concludes that the nature and direction of educational reforms have to change. He proposes a more holistic approach "in which varied talents of all our children are cultivated". This requires education to be more balanced, personalised and creative, sensitive, community-oriented (Robinson, Aronica, 2015, p.13).

These views are not isolated. Gardner (2009) also wrote about this perspective, with much attention paid in his publications to the issues of developing the capacity of the individual, accenting the need to adjust the curriculum to the preferences of the learners and their methods of perception of the reality. The notice that we all learn in a way characteristic of the individual person, whose recognition and understanding are conducive to effective learning and achieving successes, resulted in the increase of the role of individualisation in the attitude to the learners. Each individual has a specific potential that should be discovered and properly shaped.

*Raport Polska 2030* (Boni, 2009 states that individualisation of the teaching process with high standards maintained as regards the expected results of the education must be one of the directions in the education system reforms. (...) One school model, one teaching method for all make the school not being good for anybody. The times are coming to the end of "mass" education of children pursuant to one curriculum (...). To this day, most Polish schools are far from the implementation of the personalised education concept, which essentially means that the school makes an effort of adjusting to varied needs and predispositions of disciples, and was not focused on the adjustment of each disciple to the offered educational model.

The small fragments of the texts quoted here present a new trend of the modern times, which we can simply ignore or take a closer look at and apply – possibly – an approach to education different from the current one. For me, they were a strong impulse to look for better ways of working with pupils and transforming the modern school towards the idea of the school concentrated on pupils (Kuźma, Pułka 2014, 2015), that is personalised, creative, balanced.

A lot has been written about education in schools, and discussions about its shape are still going on. Those who study social sciences agree that changes are a constant. In the area of education, they come out every 10 years more or less, because the face of the world and the reality around us change. For this reason, the objective of this paper is to recognise and describe readiness for change in the group of the persons who are preparing to perform the role of teachers. What I currently perceive as the feature of the school reality is the need to be closer to pupils and their parents, closer to life experience, daily needs of the educational personnel and local community. However, the school is expected to be something more than a place that reacts to the needs of the committed entities, and its modern role is to transvertively develop the minds with educational activities, creating unity in diversity, and not unity through multitude of aspects / eclecticism that dominated in the post-modernist world.

## **Theoretical Background**

The overview of the current achievements and theoretical concepts in the scope of pedagogy allowed the conclusion that we now face polarisation of views – from the initial concentration on negative aspects: pathological conditions of individuals, groups and communities, dysfunctions and disorders in behaviour, to a group of positive views of the concentration on skills, talents, development of children, youth and adults. According to Szmidt and Modrzejewska-Świgulska (2003), it is high time to balance the proportions in pedagogical studies and theoretical considerations between the pedagogy of lack and deficiency and the pedagogy of development and growth. These authors stipulate more attention to be concentrated on health, skills, talent, wisdom, creativity and other human virtues and development resources, similarly to what was proposed by the positive psychology.

Szmidt concludes the Polish academic pedagogy resembles the condition of the Western psychology at the time of the appearance of stipulations of positive psychology on the verge of the 21st century. Similarly, the mainstream pedagogy is mostly occupied with illness, and not health and development. This current of pedagogical research, paying more attention to human resources, skills and talents, creativity and life wisdom, on which education programmes may and should be built, I call the pedagogy of development or growth. It is easy to notice that I am referring to the well-known metaphor by Abraham Maslov (1990), used in the famous classification of human needs (Szmidt & Modrzejewska - Świgulska 2003).

In the recognition of the need to create positive pedagogy, the need of the orientation on personalisation of education and balancing of the development of each individual are also worth accenting. I think that the time has come in Poland to discern the needs of stimulation, development of each individual, irrespective of their initial resources (talent, strengths versus deficits, weaknesses). The recognition of common pupils who are neglected every day and are somewhat bypassed due to their lack of problems and the ability to cope. The time to create a situation for improving every individual without comparing them against others, but only with themselves and with what they achieve in the work with other people. The time to perceive the changes that occur in the life environment and balancing the development of each individual in various levels. The time for a creative life full of openness to challenges, gaining new experiences, while maintaining sensitivity to everything that is happening around. This way of thinking about upbringing and education results not only from theoretical premises (found in the literature), but also from my personal experience and the inspiration of the Nordic countries, mostly Finland, where the principle of equality of each pupil in access to the education is common. The same attention of the teacher is deserved by a child with development deficits, an able child, and a child average in everything: everyone is perceived and has the opportunity to self-realise. The inner strength of the individual is being developed in the school, along with the feeling of creativity, the knowledge of oneself, so that each pupil could achieve well-being and high quality of life. With this approach, everyone is growing and not simply standing in one spot.

In the Polish system, normality and correctness of functioning is one of the neglected areas of being in the community. Support is provided for two extreme groups of pupils: those with deficits / lacks, and those talented / skilled. This is why the belief is strong in me about the need of emphasising the fact of neglecting those who are "ordinary", who generally cope well and have no problems; and this is why the idea came up to indicate the need of the same care being dedicated to everyone, and developing and supporting all pupils.

In the Finnish system, the support of balanced development and competencies of all pupils as members of the school community is the priority task of the modern school. To have the pupils feel happy in the school, they need to be ensured with the meaning of the world around, the capacity to manage daily life, the skilful choice making, as well as the feeling of being important for those around (being listened to, noticed, loved) (Halinen 2016). The school is to provide the tools to achieve the coherence of these elements so as to enable the capacity to find one's place in the new changing world. The new curriculum of the Finnish educational system emphasises transversal competences, that is the competencies that allow the skilful use and application of the gained knowledge and skills and sharing them. Obviously enough, it is good to be in some subjects (mathematics, history), but it is not enough. One has to be able to share this and apply (Halinen 2016). For this reason, the new Finnish educational curriculum includes the new perception of learning and teaching, and a move one step ahead.

The new core curriculum places an emphasis on transversal competences in instruction. A changing society demands more and more transversal skills and competences. Therefore, it is important that each subject promotes transversal competences. The aims set for transversal competences include thinking and learning to learn, cultural competence, interaction and self-expression, taking care of oneself and managing daily life, multiliteracy, ICT competence, working life competence and entrepreneurship, participation, involvement and building a sustainable future. The aims of transversal competences are specified in the national core curriculum. Education providers are able to further define them according to their individual areas of emphasis. Transversal competences are always taught, studied and assessed as part of the different subjects. Thus, the school not only has to respond to the changes in the world, but is expected to be the creative factor of the changes (Halinen 2016). In the next part, I concentrate on the education of the teachers, because this group becomes the centre of the attention in the current process of the reform. F. Mayor has to be quoted here with what he stated in 2001: "We should have teachers who see to progress in each child and attempt to valorise the potential of every person, because each one of them is a unique personality" (Mayor 2001, p.300). Let us then see the empirical reality in this respect.

### Methodological Aspects of Studies

One of the important links of the transformation in the educational sphere is the education of teachers, that is the persons who directly affect educational microsystems in their local communities. The aspects of the effective feature constitute the continuous subject of pedeutological discussions, probably never fully solved, so the more abandoned (Kwiatkowska, 2005). In present times, the necessity of an approach to education more flexible than ever before and readiness for change appear to be elements of high meaning, if the real renewal and improvement of the education is to be effected.

The change I am referring to does not mean disassociation from the current achievements of the science and knowledge. In my understanding, it is always inseparable with continuity. Cz. Banach (1997) perfectly phrased this concept and the presence of these phenomena: Continuity and change should be the basic premise in the development of the Polish educational system. Change without continuity is the revolution leading to the regression in

the development of the educational system, as well as of the science. We face this phenomenon exceptionally often in the reformation of the education in Poland. However, the world of patterns, copying gave to be left behind to prevent the enslavement of the teacher. The passage from the survival style to the development style is the condition sine qua non of the reform of the school focused on the disciple. Thus, availability and systematic updating of teacher competencies of all levels is one of the challenges, as the quality of the education depends on the quality of the staff and its dedication Banach (1997).

I do interpret change and I refer to the proposal of R. M. Kanter, which defines and identifies change with the process of the analysis of the past for the purpose of carrying out such measures in the present time that would bring about specific results in the future. Changes are apparent in various walks of human life, and we also perceive the changing characteristics in both the context of the changes in the individual affected by various situations and the scope of the differentiation of individuals. Helen Bee ( cited in Brzezińska, 2000) listed three categories of changes: universal, change shared within the given group, and individual changes. Universal changes are most common and related, although relatively, with the age to which specific features are attributed that result from biological and social determinants. Shared changes exemplify the characteristics of the persons in the specific community or group. This means that they constitute the result of experiencing similar events as well as taking part in similar social situations, which must lead to some characterological community. Individual changes basically refer to the meaning drawn upon during the development of unique individual experiences. Unique factors bring them about that affect only the given individual.

In the empirical study I assumed the measurement of readiness to change in the light of self-assessment by the persons preparing to perform the role of teachers.

I formulated the problem in the form of the settling question: Are candidates for teachers ready to change towards the education concentrated on pupils and build the educational environment friendly to everyone?

The study was conducted with two groups of students, candidates for teachers. I completed the first study in 2011, with the procedure repeated after 5 years (in 2016) with two groups of students. 136 subjects (candidates for teachers) constituted the first group, the participants of postgraduate studies with extensive professional experience. In terms of gender, the group was composed of 94 women and 42 men. The second group of 100 students of the second level of studies, preparing for the role of teachers, included 96 women and 4 men. The studies were conducted with Readiness to Change Questioanry by Kriegel and Brandt (1996) translated by Paszkowska-Rogacz, Tarkowska (2004). The questionnaire features 7 categories that may the method of performance of own work: inventiveness, passion, self - confidence, optimism, taking risk, adaptability, and tolerance to uncertainty.

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# Results

The results of the studies of the students who prepare to perform the role of teachers of 2011 and 2016 are given in the following table:

Category	Low level		Optimal level		High level	
	N/%	N/%	N/%	N/%	N/%	N/ %
Inventiveness	131 (96%)	67	4 (3,3%)	32	1(0,7%)	1
Passion	131 (96%)	46	3 (3%)	35	2 (1%)	19
Self - confidence	119 (88%)	45	15(11%)	46	2 (1%)	14
Optimism	80 (59%)	49	40 (29%)	30	16 (12%)	21
Taking risk	105 (77%)	58	26 (19%)	37	5 (4%)	5
Adaptability	103 (76%)	26	31(23%)	68	2 (1%)	6
Tolerance to	129 (95%)	46	3 (2%)	43	4 (3%)	11
uncertainty						

# Inventiveness

Inventiveness people can make use of any situation for their own purposes and do "something out of nothing". They can reach the proper sources and resources to implement their plans. They perceive various methods of action and creatively approach even stereotypical issues. They know that every problem may be solved and the difficulties inherent to it are a challenge for them and a value in itself (Paszkowska-Rogacz, Tarkowska, 2004). In the first group of the candidates for teachers, 3.3% of the subjects achieved the optimum result in this category, with 32% in the second group.

The low result was achieved by 96% (Group 1) and 67% (Group 2) of the candidates for teachers, which means that these people most often prefer common, routine methods of action. 1 candidate in each group achieved high result, which suggests that these persons overlook simple and obvious solutions, thus causing more work for themselves than necessary.

# Passion

Passion is the type of energy that strengthens all other features. People with passion more rarely become bored and tired. At the threshold of difficult tasks, they do not feel fear, but rather are full of energy and enthusiasm. The optimum result in this category was achieved by 3% of the candidates for teachers in Group 1 and 35% of the subjects in Group 2.

Low result was achieved by 96% and 46% of the candidates for teachers, respectively. Very high result, signifying the tendency to continuing pointless stubbornness, was achieved by 1% of the candidates in Group 1 and 19% of the 2016 Group.

## Self - Confidence

Self - Confident persons trust their own skills and capacities: 11% (2011) and 46% (2016) of the subjects had this feature. It is one of the higher results in the measurement of all features concerning readiness to change.

Low result was achieved by 88% persons preparing to start performing the role of the teacher and 45% of the subjects studied after 5 years, which suggests lack of faith in own capacity in the subjects. The high result in this scale was achieved by 1% and 14% of the candidates for teachers, respectively, which may suggest that these persons have strong self-confidence.
## Optimism

The feature of optimism highly correlates with readiness to accept change. Optimists present positive, and sometimes straight out enthusiastic attitude to all kinds of new experiences. In the studied group of the candidates for teachers, the optimum result was achieved by 29% and 30% of the candidates for teachers. One may assume that these persons perceive various opportunities around, positively interpret the reality, and believe that time is in their favour. Despite passing time, we have noticed a similar percentage result for both groups in the study. The low result in the scale was achieved by 59% of the candidates in Group 1 and 49% of the candidates in Group 2, which is a group of persons with pessimistic perception of the reality around and lack of the mood to initiate action. The high result in the scale may signify the lack of the skill of critical thinking; it was achieved by 12% students in 2011 and 21% in 2016.

## Taking risk

Taking risk people regard live to be a great adventure and love challenges. They are continuously in motion and they cannot stand stagnation. They are usually creators of changes and initiate innovative actions. They work effectively in the environment of "storms and whirls". This feature was apparent in 19% of the students in Group 1 and 37% of Group 2. The low result was achieved by 77% and 58% of the candidates for teachers, respectively, and the high result was achieved by 4% and 5% of the subjects. Low results prove lack of interest in uncertain situations, whereas high results mean recklessness tendency.

## Adaptability

This capacity includes two components: flexibility and resilience. Flexibility allows easy adjustment of the person to the varying requirements of the surroundings. Resilience is the future which makes people not succumb to failures and perceiving errors as carriers of educational values. They do not care much about their own status and function Paszkowska-Rogacz, Tarkowska (2004). The optimum result in this category was achieved by 23% (2011) and 68% (2016) of the candidates for teachers. The low results were achieved by 76% of the students and the 26-person Group 2. One candidate in 2011 and 6 candidates in 2016 achieved high results, which may signify superficiality and low commitment to the action.

#### Tolerance to Uncertainty

The only certain thing for the persons with this feature is that nothing is certain. They accept this condition, knowing that new and surprising things may appear in the implementation of any plan. As they do not expect quick solutions and simple answers, they show high patience and do not make hasty conclusions. The optimum result in this category was achieved by 2% and 43% of the subjects. The low result, which means withholding, abandoning certain actions due to the lack of perseverance, and the feeling of uncertainty, was achieved by 95% of the subjects in Group 1 and 46% of the subjects in Group 2, while difficulties in finishing the task and making final decisions May characterise the persons who achieve high results, that is 3% and 11% of the candidates who took part in the study.

#### Summary

The resulting empirical data present the candidates for teachers basically ready for changes (32% of the subjects). The candidates studied in 2016 showed the optimum results in 6 out of 7 measured features, first of all being self-confident, knowing their own talents, strengths, being capable of generating ideas and employing them effectively, being optimistic about the reality, the environment, and featuring high adaptation capabilities. There are a number of fears about the implementation of the new concepts, high uncertainty about undertaking

action, thus aversion to any risk. This element may be slightly disturbing, as accepting risk is the immanent part of creativity. Unique, many a time completely surprising situations occasionally require the teacher to accept risk. However, the candidates for teachers preferred known paths and proven solutions in this area. The result in the study of the candidates for teachers in 2011 was at the level of 10%, which correlated with the data of the Finnish researchers, while 5 years later (in 2016) readiness to change increased to 32%. It is very good as the trend is positive.

## How do active teachers perceive changes in the education?

When becoming acquainted with the problems of changes towards the education concentrated on pupils, I also tried to examine teachers active in their profession, based on the experience of cooperation with teachers, for example during the pre-experimental study that I conducted in 2013 (Pułka, 2013). The studied group included 15 female teachers of classes 1 to 3. In two measurements (pre - test and post - test), taken after a six-month interval, I have not perceived any changes in the perception of the content of teaching various subjects as a result of the implementation of the new model of art education for able children, but readiness and openness of the teachers to the implementation of the novation was high. The features of the study declared very high openness to improving one's own workshop in cooperation with various institutions. However, these persons declared that their readiness would not be unconditional. The improvement of the workshop is the activity for which teachers have little time due to the conditions of their occupation (time, economy, psychological, organisational constraints), which strongly affect their commitment and quality of their actions.

In the studies of teachers in 2018 (for comparison purposes, I will also refer to 15 randomly selected teachers), major variation of opinions as regards changes in the educational system was noticeable. The teachers who were pessimistic about changes stated that they constituted significant threat to their jobs and even if they tried to strongly commit to the work, inevitability of losing a job is the experience very close to them. The changes implemented without consultation of proposals with them, without taking account of their needs, make that they do not want to participate in it and prefer to withdraw and wait. The group of neutral teachers indicate that changes are their daily bread, and they work as they did before, because it is the teacher–pupil relation is important, and not that change of the system. They indicate chaos and overload of pupils, as a result of which children learn less, but the teachers do not feel any improvement or worsening of the situation. The persons with positive attitude to the work of teachers, the continuous oversight ("I feel as if imprisoned"), and the opportunity for larger support for the teachers who do want to improve and develop.

In Finland, every teacher who intends to improve their competences and develop in the field of interests or passions benefits from additional support in the form of a day off for development, financing of selected courses and trainings, and the possibility of sharing experiences in the platforms dedicated to specific groups of interests, profiled for the needs of the recipients. The cooperation of practicing teachers is also very often conducted through contacts with university-level facilities and including teachers in their projects, viewing them as partners, and not only as recipients of specific scientific proposals. The participation of this type allows mutuality and cooperation that are fully active and committed.

Teachers in Poland require, however, first of all support, appreciation and elevation of the importance of their profession on the part of decision makers, superiors and parents. On part of the pupils, they need the natural good relation of the master–disciple style that, amidst a variety of quite often divergent expectations, is neglected in daily caring. The teachers are ready and open to changes towards the personalised, sensitive and balanced education (focused on pupils), and they perceive them themselves, which is manifested in a number of

grassroots initiatives. They implement various changes: substantive, methodological, organisational. Strong grassroots initiatives appear, with more and more schools implementing the innovative methods of the education process under the influence of creative teachers who are open to changes, thus opening the space for action not only for themselves but most of all for pupils, their parents and the local community. There are too many of them to quote all such measures, most probably not all being described. However, one of the grassroots initiatives comes in the form of edu-changing teachers, those super-professionals, whose actions are referred to in their website.

## Discussion

Changes should be started from one's own milieu. The community of teachers did this with students during their practical exercises, and teachers during their daily meetings with students and work at school.

All national-level changes in the education system in Finland are always started with teachers, with listening to their opinions about the need to make the changes, their concepts, and then wider debates and developing joint premises. This direction is a perfect pattern to follow, as the changes related to the given environment should always be consulted with it for the effective implementation to occur.

Continuous support for teachers is very important in this process. The studies of the Finnish teachers of various types of schools (805 subjects) are very interesting in this context, as described by Bakker, Demerouti, Schaufeli, Verbeke (2003, 2004, 2007). They showed that the resources in support of teachers reduce requirements and effectively lower the subjective feeling of overload with occupational duties. The most important resources in support of teachers in their work with students included: the support on part of the superior, innovativeness, appreciation, positive feedback, and good organisational climate and the workplace. Finnish teachers form one of the most effective educational environments. Their students achieve one of the best results of education in the supranational dimension. Sharing good practices and presenting model solutions is definitely worthwhile.

#### Jolanta Pułka

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# Surviving and Thriving in the 4th Industrial Era of the Financial Service Industry

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#### Abstract

The financial service industry globally has been one of the most impacted industries by the technological, demographic and socio-economic disruptions. Moreover, the volatility, uncertainty, complexity, and ambiguity (VUCA) conditions in the world has created a greater challenge to most companies including Bank Mandiri. As one of the biggest state-owned banks in Indonesia, Bank Mandiri is mindful of the importance and vital role of their leaders to survive and thrive in the fourth industrial era. Along with other strategic initiatives, Bank Mandiri developed and implemented an extensive and integrated leadership development program to build leadership capacity in facing this disruptive era. Hundreds of its high potential employees have participated in the Middle Management Development Program (MDP) which started in 2014. This paper provides insight on the effectiveness and potential value of an integrated leadership development approach in building its leadership capacity by exploring how MDP graduates applied the tools and knowledge from MDP in their careers and how the business leaders as the "users" of MDP graduates values them. A survey was conducted with MDP graduates and their previous year performance evaluation and talent classification were analysed. The findings indicate that 79% of MDP graduates believe they were successful in applying MDP knowledge and 95% of MDP graduates' performance appraisal from their supervisors are classified as exceeding expectations. Based on Bank Mandiri's experience and lessons learned, the effectiveness of an integrated leadership approach requires strategic and extensive content for learning, an innovative learning journey, and strong commitment from top management.

Keywords: Leadership Development, 4<sup>th</sup> Industrial Era, Bank Mandiri, Financial Service Industry

#### Introduction

Bank Mandiri was established on October 2nd, 1998, as part of the bank-restructuring program of the Government of Indonesia. Four state-owned banks were merged into Bank Mandiri. After the merger, Bank Mandiri conducted several corporate transformation programs. (Bank Mandiri, 2018a). Today, Bank Mandiri has become the biggest state-owned integrated financial institution in Indonesia. The bank is also known for its successful merger story in the banking industry.

Bank Mandiri provides banking, insurance, leasing, and investment services all over Indonesia. As of September 2018, its assets were US\$33 billion with US\$1.7 billion profits and US\$8.1 billion revenue. It employed more than 74,000 employees, 68% of which are millennials. The operation covers 2,600 branches, 2,400 micro outlets, 12 subsidiaries, and 7 overseas branches in London, Hong Kong, Shanghai, Singapore, Malaysia, Cayman Island, and Timor Leste. (Handaya, 2018a).

On the bank's 20th anniversary in October 2018, Bank Mandiri was ranked 11th among the world's best employers by Forbes Global 2000. It was among other global companies like Alphabet, Microsoft, Apple, Walt Disney, Amazon, CNOOC, Daimler, Kasikornbank, Celgene, and BMW (Forbes, 2018).

#### **Literature Review**

Disruption Forces Transformed the Financial Industry

Horney, Pasmore, & O'Shea (2010) described the current business environment as volatile, uncertain, complex and ambiguous (VUCA). The U.S. Military first introduced the term when the Cold War ended. Organizations are struggling to navigate in a VUCA world. This can be seen from the volatility of the global economy, the uncertainty of the shifting of customer expectations, and new players in the market. The intense pressure from regulators have created a complex process and a shorter and faster innovation cycle.

Furthermore, Schwab in 2015 stated that the world is entering the fourth industrial revolution era that is fundamentally changing the way humans live, work and relate to one another. The fourth industrial era is evolving at an exponential rather than a linear pace and will have a major impact in many industries. The technology revolution will significantly disrupt existing industry value chains.

These disruptive forces are radically transforming the financial industry globally and domestically. The financial technology ("fintech") firms are disrupting the financial service industry reported by the Economist Intelligent Unit (2015). They are challenging banks in every product line in their portfolios from payments to lending to foreign exchange. Moreover, new competitors are using the power of technology to upend conventional wisdom and transform banking (Deloitte, 2016). Ant Financial in China is an example of the fastest growing bank that leverages the power of technology to take over intermediary functions from the bank (Cheng, 2018).

#### The Need and the Will to Reskill

Financial services industry executives globally are facing these pressures and challenges. Digitization has reshaped the banking competition landscape significantly. Bankers agree that their work is going to change as a result of the disruptions (Deloitte, 2018). The changing of financial business models and the integration of the financial eco-system has created a greater risk. As a result, risk management skills need to be elevated. Moreover, the Indonesian financial industry workforce is flooded by millennials. Septiari & Kusuma (2016)

indicated that 44.9% of the Indonesian workforce was born between 1980 and 2000. The 2018 OECD Economic Surveys: Indonesia stated that half of Indonesia's population is under 30 years old. This potential demographic dividend can be an advantage for Indonesia

These millennials are in a transition to become the next leaders with different styles of how to see the world. Most of them lack essential leadership skills required for organizational success (Nye, 2017). Thus, to tackle those challenges, bankers would need develop their roles as business leaders by considering three circumstances:

- 1. The development of leadership skills plays a significant role in the creation of sustainability competitiveness and performance (Edwards, Elliot, Iszatt-White, & Schedlitzki, 2013).
- 2. It is critical to build the dynamic capability for the leader, which is an ability to renew and recreate the organization strategy to continuously tackle the wild environment (Neo, 2018).
- 3. The integrated solution approach to leadership development represents a more strategic, synergistic, comprehensive, and sustainable way for organizations to build the leadership capacity to gain a competitive advantage. (Weiss & Molinaro, 2006)

The above actions require serious commitment from all members of the organization from the Directors, senior business leaders, and the Human Capital team. The process is more complex but in the long term it delivers a greater value to the organization and ensures that the investment in leadership development is optimized.

## Bank Mandiri Talent Management

Bank Mandiri's Human Capital organization are continuously improving its operation to drive business value, one of the initiative is linking the right person to the right position. It's talent strategy is to get the right people into the right places and doing the right things with the right attitude (Handaya, 2018b). This resonates with Ingham and Ulrich (2016) which explain the importance of managing talents, developing leadership capabilities and culture to build organization competitiveness. In developing the talent dynamic capabilities, the integrated leadership development has been designed starting from the management trainee level up to the executives' level (Handaya, 2018b). The structure is as follows:

- 1. The Officer Development Program (ODP) aims to introduce new recruits to the banking industry and develop its personal leadership.
- 2. The Master Degree Scholarship Program (S2) provides opportunity for high performing employees to pursue master's degrees in top global universities. The program aims to provide employees with global exposure and enhanced their skills.
- 3. The Middle Management Development Program (MDP) aims to develop high potential employees to become managers that are able to articulate the strategic directions, manage the team and execute the strategies.
- 4. The General Management Development Program is aimed for high potential employees who are the successors or are already in the executive's position. They are equipped in managing complex issues and navigating the business in this VUCA world.
- 5. The Executive Development Program (EDP) provides a development program for Bank Mandiri's Board of Directors to broaden their horizons and knowledge with the current and future global issues and trends.

The structure can be described in the below graphic:

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Figure 1: Leadership Development Structure

## **Research Methodology**

#### Research Purpose

The focus of research that has been conducted for four years is the Middle Management Development Program (MDP). The research purpose is to explore the effectiveness and potential value of the integrated leadership development approach in building its leadership capacity. The research aims to answer the following questions:

- Are MDP graduates applying the tools and learning from MDP in their careers?
- How do the business leaders as the "users" of MDP graduates value them?

## **Research Methods**

Quantitative research is applied in collecting and analysing the data. Data was collected through an online survey to MDP graduates and a review of MDP graduates' 2017 Performance Management and Talent Classification generated by Bank Mandiri's Talent Management Department.

The online survey was conducted by MDP's Academic Director, Associate Professor Maxim Sytch of Michigan Ross Business School in July 2018 (Sytch, 2018). The survey was distributed to 200 respondents. 107 or 53.2% of MDP graduates responded to the survey. The identity of respondents was not tracked and their confidentiality was assured. This research analysed parts of the survey results to investigate whether MDP graduates are applying the tools and learning from MDP in their careers.

Annually, Bank Mandiri's employees' performances were evaluated independently by their supervisors using performance management tools called Mandiri-Easy (Employee Appraisal System). The performance management ratings range from exceeding expectations, meeting expectations, and below expectations. This linked to their bonus and other compensations (Bank Mandiri, 2017). Based on the employee's performance and potential, employees are mapped into talent classifications. Employees are categorized into five type of talent classifications: high potential, critical resources, key contributor, underachiever, and limited contributor. This research analysed the MDP graduate's 2017 performance management and talent classification data to explore how the business leaders as the users of MDP graduates evaluate and value MDP's graduates' performance and potential.

## **Research Findings**

The Middle Management Development Program (MDP) was established in 2014, with the purpose to equip high potential employees with capability, culture, mindset, leadership, and purpose to become the managers that are able to articulate Mandiri's strategic directions, manage the team, and execute the strategy. As of 2018, eight cohorts have been conducted to develop 207 high potential employees.

The learning journey of MDP duration was six to seven months where the participants were learning while still working in their current jobs. The integrated program involved the BOD and senior executives in conducting an action learning project that relates to strategic business issues. Moreover, the participants were expected to collaborate with their peers from different units and listen to customer voices. An executive coach coached them to improve their personal leadership skills. To gain insights on the current issues and trends, Bank Mandiri partnered with one of the top business schools in the world. The MDP participants were given an opportunity to create a global network by visiting global companies in the United States, United Kingdom, Hong Kong, China and Singapore to practice their executive presence. At the end of the program, they presented their action-learning project, which has to be innovative and implementable in solving the business problem. These presentations were conducted in the Board of Directors and Seniors Executive Forums where they were challenged and valued. It was an opportunity for the board and business leaders to see the potential successors of the organization.

#### Data Interpretation

The overall survey result indicates that 79% of MDP graduates believe they were successful in applying MDP knowledge. The survey results indicated that the percentage of MDP graduates agreeing with the knowledge application are as follows: 89% stated they applied the insight and skills, 90% indicated MDP enabled them to do their jobs better, 89% helped them prepare for the next strategic roles at Mandiri, 90% enabled them to embrace the customer-centric mindset, and 92% developed their personal leadership awareness for how to develop themselves in the future.

The MDP's graduates stated that what is most useful to them in MDP are: Learning how to build and leverage networks and relationships, collaboration across silos, managing teams and leadership, skills to manage change, art of communication and influencing people, communication, marketing, and project management, and a broad network and the cohort system that enlarged their network

The MDP graduates' 2017 performance management and talent classification data analysis (Bank Mandiri, 2018b) showed that: 95% are exceeding their supervisors' expectations and 5% are meeting expectations, 66% are classified as high potential, 33% are critical resources, and 0.5% are key contributors.

In terms of career progression, MDP's graduates also stated that 59% have been promoted, 56% are at the expected position level and 75% have significantly changed in their job. This is part of providing new exposure and continuously developing them by assigning them to a strategic and critical role in the organization.

# MDP's Impact

The impact of MDP can be comprehended from three perspectives:

1. <u>Personal</u>: MDP graduates have experienced a transformation of behavior, confidence, and professionalism such as global mindset, executive presence, and strategic application of core learning topics. They have become more engaged and improved their leadership skills. They have also become purpose-driven leaders. One of them testifies that:

"After graduating from MDP, I launched several initiatives to be more engaged with my team. These initiatives instantly boosted my team's motivation to work harder and better."

2. <u>Teamwork</u>: MDP has created a strong and effective cross-functional collaboration and increasing appreciation of the value created by others outside their core area and business. One testifies that:

"I searched my personal network to discuss a situation who knew other alternatives; understood who the person in charge was and his surrounding contacts, trying to persuade them of the idea. As a result, we showed some alternatives to customer, and they were happy. Furthermore, the relationship with the customer improved, which led to other deals."

3. <u>Bank Mandiri</u>: The organizational impact has been achieved through the implementation of an action learning project where new ideas and business were generated as a result of cross-collaboration and development of a new cadre of future business leaders within Bank Mandiri. One testified that: "With the collaboration between loan, branch and wealth unit, we made acquisition of our region's targeted customer. All team members are cooperative and far less siloed. More revenue was generated with multiple units collaborating."

## MDP's Success Factors

Weiss & Molinaro (2006) stated that integrated leadership development is complex and intense. The research findings support the arguments and identified that the key success factors were "real time" implementation of program content to solidify and integrate learning, top management coaching of high-potentials helps to build relationships, trust, and enhanced feelings of empowerment, participants must "step up" to a higher level of strategic thinking and leadership, and finally, participant's cross-functional understanding must be built to acquire a bank-wide perspective.

## Conclusion

The research findings indicate that an integrated leadership development program in Bank Mandiri was developed and implemented in a strategic, synergistic, comprehensive, and sustainable way. More importantly, the data shows the effectiveness of an integrated leadership approach. This can be seen from how the participants viewed the benefit of the program in their job and how the business "user" values their performance. 79% of MDP graduates believe they were successful in applying MDP knowledge and 95% are exceeding their supervisor's expectations. The effectiveness of an integrated leadership development approach requires first of all a strategic and extensive content of learning which covers technical, thinking, and leadership skills, project management, team dynamic, agility to embrace business needs, and soft aspects such as mindset and purpose. Second, a transformative learning journey such as an action learning project, coaching, market visits, and global networking, and third, serious and consistent commitment from top management to ensure the sustainability and credibility of the program.

These, however, are early and preliminary findings generated from 8 cohorts of MDP graduates. Future research is recommended to further explore data from a range of other sources to identify areas to improve the effectiveness of the integrated leadership program in the future.

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The financial service industry globally has been one of the most impacted industries by the technological, demographic and socio-economic disruptions. Moreover, the volatility, uncertainty, complexity, and ambiguity (VUCA) conditions in the world has created a greater challenge to most companies including Bank Mandiri. As one of the biggest state-owned banks in Indonesia, Bank Mandiri is mindful of the importance and vital role of their leaders to survive and thrive in the fourth industrial era. Along with other strategic initiatives, Bank Mandiri developed and implemented an extensive and integrated leadership development program to build leadership capacity in facing this disruptive era. Hundreds of its high potential employees have participated in the Middle Management Development Program (MDP) which started in 2014. This paper provides insight on the effectiveness and potential value of an integrated leadership development approach in building its leadership capacity by exploring how MDP graduates applied the tools and knowledge from MDP in their careers and how the business leaders as the "users" of MDP graduates values them. A survey was conducted with MDP graduates and their previous year performance evaluation and talent classification were analysed. The findings indicate that 79% of MDP graduates believe they were successful in applying MDP knowledge and 95% of MDP graduates' performance appraisal from their supervisors are classified as exceeding expectations. Based on Bank Mandiri's experience and lessons learned, the effectiveness of an integrated leadership approach requires strategic and extensive content for learning, an innovative learning journey, and strong commitment from top management.

Keywords: Leadership Development, 4<sup>th</sup> Industrial Era, Bank Mandiri, Financial Service Industry

#### Introduction

Bank Mandiri was established on October 2nd, 1998, as part of the bank-restructuring program of the Government of Indonesia. Four state-owned banks were merged into Bank Mandiri. After the merger, Bank Mandiri conducted several corporate transformation programs. (Bank Mandiri, 2018a). Today, Bank Mandiri has become the biggest state-owned integrated financial institution in Indonesia. The bank is also known for its successful merger story in the banking industry.

Bank Mandiri provides banking, insurance, leasing, and investment services all over Indonesia. As of September 2018, its assets were US\$33 billion with US\$1.7 billion profits and US\$8.1 billion revenue. It employed more than 74,000 employees, 68% of which are millennials. The operation covers 2,600 branches, 2,400 micro outlets, 12 subsidiaries, and 7 overseas branches in London, Hong Kong, Shanghai, Singapore, Malaysia, Cayman Island, and Timor Leste. (Handaya, 2018a).

On the bank's 20th anniversary in October 2018, Bank Mandiri was ranked 11th among the world's best employers by Forbes Global 2000. It was among other global companies like Alphabet, Microsoft, Apple, Walt Disney, Amazon, CNOOC, Daimler, Kasikornbank, Celgene, and BMW (Forbes, 2018).

#### **Literature Review**

Disruption Forces Transformed the Financial Industry

Horney, Pasmore, & O'Shea (2010) described the current business environment as volatile, uncertain, complex and ambiguous (VUCA). The U.S. Military first introduced the term when the Cold War ended. Organizations are struggling to navigate in a VUCA world. This can be seen from the volatility of the global economy, the uncertainty of the shifting of customer expectations, and new players in the market. The intense pressure from regulators have created a complex process and a shorter and faster innovation cycle.

Furthermore, Schwab in 2015 stated that the world is entering the fourth industrial revolution era that is fundamentally changing the way humans live, work and relate to one another. The fourth industrial era is evolving at an exponential rather than a linear pace and will have a major impact in many industries. The technology revolution will significantly disrupt existing industry value chains.

These disruptive forces are radically transforming the financial industry globally and domestically. The financial technology ("fintech") firms are disrupting the financial service industry reported by the Economist Intelligent Unit (2015). They are challenging banks in every product line in their portfolios from payments to lending to foreign exchange. Moreover, new competitors are using the power of technology to upend conventional wisdom and transform banking (Deloitte, 2016). Ant Financial in China is an example of the fastest growing bank that leverages the power of technology to take over intermediary functions from the bank (Cheng, 2018).

#### The Need and the Will to Reskill

Financial services industry executives globally are facing these pressures and challenges. Digitization has reshaped the banking competition landscape significantly. Bankers agree that their work is going to change as a result of the disruptions (Deloitte, 2018). The changing of financial business models and the integration of the financial eco-system has created a greater risk. As a result, risk management skills need to be elevated. Moreover, the Indonesian financial industry workforce is flooded by millennials. Septiari & Kusuma (2016)

indicated that 44.9% of the Indonesian workforce was born between 1980 and 2000. The 2018 OECD Economic Surveys: Indonesia stated that half of Indonesia's population is under 30 years old. This potential demographic dividend can be an advantage for Indonesia

These millennials are in a transition to become the next leaders with different styles of how to see the world. Most of them lack essential leadership skills required for organizational success (Nye, 2017). Thus, to tackle those challenges, bankers would need develop their roles as business leaders by considering three circumstances:

- 1. The development of leadership skills plays a significant role in the creation of sustainability competitiveness and performance (Edwards, Elliot, Iszatt-White, & Schedlitzki, 2013).
- 2. It is critical to build the dynamic capability for the leader, which is an ability to renew and recreate the organization strategy to continuously tackle the wild environment (Neo, 2018).
- 3. The integrated solution approach to leadership development represents a more strategic, synergistic, comprehensive, and sustainable way for organizations to build the leadership capacity to gain a competitive advantage. (Weiss & Molinaro, 2006)

The above actions require serious commitment from all members of the organization from the Directors, senior business leaders, and the Human Capital team. The process is more complex but in the long term it delivers a greater value to the organization and ensures that the investment in leadership development is optimized.

## Bank Mandiri Talent Management

Bank Mandiri's Human Capital organization are continuously improving its operation to drive business value, one of the initiative is linking the right person to the right position. It's talent strategy is to get the right people into the right places and doing the right things with the right attitude (Handaya, 2018b). This resonates with Ingham and Ulrich (2016) which explain the importance of managing talents, developing leadership capabilities and culture to build organization competitiveness. In developing the talent dynamic capabilities, the integrated leadership development has been designed starting from the management trainee level up to the executives' level (Handaya, 2018b). The structure is as follows:

- 1. The Officer Development Program (ODP) aims to introduce new recruits to the banking industry and develop its personal leadership.
- 2. The Master Degree Scholarship Program (S2) provides opportunity for high performing employees to pursue master's degrees in top global universities. The program aims to provide employees with global exposure and enhanced their skills.
- 3. The Middle Management Development Program (MDP) aims to develop high potential employees to become managers that are able to articulate the strategic directions, manage the team and execute the strategies.
- 4. The General Management Development Program is aimed for high potential employees who are the successors or are already in the executive's position. They are equipped in managing complex issues and navigating the business in this VUCA world.
- 5. The Executive Development Program (EDP) provides a development program for Bank Mandiri's Board of Directors to broaden their horizons and knowledge with the current and future global issues and trends.

The structure can be described in the below graphic:

#### Gusti Agung Ayu Pramitasari



Figure 1: Leadership Development Structure

## **Research Methodology**

#### Research Purpose

The focus of research that has been conducted for four years is the Middle Management Development Program (MDP). The research purpose is to explore the effectiveness and potential value of the integrated leadership development approach in building its leadership capacity. The research aims to answer the following questions:

- Are MDP graduates applying the tools and learning from MDP in their careers?
- How do the business leaders as the "users" of MDP graduates value them?

## **Research Methods**

Quantitative research is applied in collecting and analysing the data. Data was collected through an online survey to MDP graduates and a review of MDP graduates' 2017 Performance Management and Talent Classification generated by Bank Mandiri's Talent Management Department.

The online survey was conducted by MDP's Academic Director, Associate Professor Maxim Sytch of Michigan Ross Business School in July 2018 (Sytch, 2018). The survey was distributed to 200 respondents. 107 or 53.2% of MDP graduates responded to the survey. The identity of respondents was not tracked and their confidentiality was assured. This research analysed parts of the survey results to investigate whether MDP graduates are applying the tools and learning from MDP in their careers.

Annually, Bank Mandiri's employees' performances were evaluated independently by their supervisors using performance management tools called Mandiri-Easy (Employee Appraisal System). The performance management ratings range from exceeding expectations, meeting expectations, and below expectations. This linked to their bonus and other compensations (Bank Mandiri, 2017). Based on the employee's performance and potential, employees are mapped into talent classifications. Employees are categorized into five type of talent classifications: high potential, critical resources, key contributor, underachiever, and limited contributor. This research analysed the MDP graduate's 2017 performance management and talent classification data to explore how the business leaders as the users of MDP graduates evaluate and value MDP's graduates' performance and potential.

## **Research Findings**

The Middle Management Development Program (MDP) was established in 2014, with the purpose to equip high potential employees with capability, culture, mindset, leadership, and purpose to become the managers that are able to articulate Mandiri's strategic directions, manage the team, and execute the strategy. As of 2018, eight cohorts have been conducted to develop 207 high potential employees.

The learning journey of MDP duration was six to seven months where the participants were learning while still working in their current jobs. The integrated program involved the BOD and senior executives in conducting an action learning project that relates to strategic business issues. Moreover, the participants were expected to collaborate with their peers from different units and listen to customer voices. An executive coach coached them to improve their personal leadership skills. To gain insights on the current issues and trends, Bank Mandiri partnered with one of the top business schools in the world. The MDP participants were given an opportunity to create a global network by visiting global companies in the United States, United Kingdom, Hong Kong, China and Singapore to practice their executive presence. At the end of the program, they presented their action-learning project, which has to be innovative and implementable in solving the business problem. These presentations were conducted in the Board of Directors and Seniors Executive Forums where they were challenged and valued. It was an opportunity for the board and business leaders to see the potential successors of the organization.

#### Data Interpretation

The overall survey result indicates that 79% of MDP graduates believe they were successful in applying MDP knowledge. The survey results indicated that the percentage of MDP graduates agreeing with the knowledge application are as follows: 89% stated they applied the insight and skills, 90% indicated MDP enabled them to do their jobs better, 89% helped them prepare for the next strategic roles at Mandiri, 90% enabled them to embrace the customer-centric mindset, and 92% developed their personal leadership awareness for how to develop themselves in the future.

The MDP's graduates stated that what is most useful to them in MDP are: Learning how to build and leverage networks and relationships, collaboration across silos, managing teams and leadership, skills to manage change, art of communication and influencing people, communication, marketing, and project management, and a broad network and the cohort system that enlarged their network

The MDP graduates' 2017 performance management and talent classification data analysis (Bank Mandiri, 2018b) showed that: 95% are exceeding their supervisors' expectations and 5% are meeting expectations, 66% are classified as high potential, 33% are critical resources, and 0.5% are key contributors.

In terms of career progression, MDP's graduates also stated that 59% have been promoted, 56% are at the expected position level and 75% have significantly changed in their job. This is part of providing new exposure and continuously developing them by assigning them to a strategic and critical role in the organization.

# MDP's Impact

The impact of MDP can be comprehended from three perspectives:

1. <u>Personal</u>: MDP graduates have experienced a transformation of behavior, confidence, and professionalism such as global mindset, executive presence, and strategic application of core learning topics. They have become more engaged and improved their leadership skills. They have also become purpose-driven leaders. One of them testifies that:

"After graduating from MDP, I launched several initiatives to be more engaged with my team. These initiatives instantly boosted my team's motivation to work harder and better."

2. <u>Teamwork</u>: MDP has created a strong and effective cross-functional collaboration and increasing appreciation of the value created by others outside their core area and business. One testifies that:

"I searched my personal network to discuss a situation who knew other alternatives; understood who the person in charge was and his surrounding contacts, trying to persuade them of the idea. As a result, we showed some alternatives to customer, and they were happy. Furthermore, the relationship with the customer improved, which led to other deals."

3. <u>Bank Mandiri</u>: The organizational impact has been achieved through the implementation of an action learning project where new ideas and business were generated as a result of cross-collaboration and development of a new cadre of future business leaders within Bank Mandiri. One testified that: "With the collaboration between loan, branch and wealth unit, we made acquisition of our region's targeted customer. All team members are cooperative and far less siloed. More revenue was generated with multiple units collaborating."

## MDP's Success Factors

Weiss & Molinaro (2006) stated that integrated leadership development is complex and intense. The research findings support the arguments and identified that the key success factors were "real time" implementation of program content to solidify and integrate learning, top management coaching of high-potentials helps to build relationships, trust, and enhanced feelings of empowerment, participants must "step up" to a higher level of strategic thinking and leadership, and finally, participant's cross-functional understanding must be built to acquire a bank-wide perspective.

## Conclusion

The research findings indicate that an integrated leadership development program in Bank Mandiri was developed and implemented in a strategic, synergistic, comprehensive, and sustainable way. More importantly, the data shows the effectiveness of an integrated leadership approach. This can be seen from how the participants viewed the benefit of the program in their job and how the business "user" values their performance. 79% of MDP graduates believe they were successful in applying MDP knowledge and 95% are exceeding their supervisor's expectations. The effectiveness of an integrated leadership development approach requires first of all a strategic and extensive content of learning which covers technical, thinking, and leadership skills, project management, team dynamic, agility to embrace business needs, and soft aspects such as mindset and purpose. Second, a transformative learning journey such as an action learning project, coaching, market visits, and global networking, and third, serious and consistent commitment from top management to ensure the sustainability and credibility of the program.

These, however, are early and preliminary findings generated from 8 cohorts of MDP graduates. Future research is recommended to further explore data from a range of other sources to identify areas to improve the effectiveness of the integrated leadership program in the future.

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# Mindfulness Methods and a Growth Mindset Approach as Social-Emotional Learning Supports

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#### Abstract

This paper is focused on practical strategies utilized in a New York City teacher preparation program to empower future educators to support children's social and emotional learning through use of mindfulness methods, wellness strategies, meditation, and a growth mindset approach in diverse learning environments. Techniques presented are intended to help foster calmness in the face of adversity, as well as improved levels of emotional wellness to help support educators and young learners in coping with multifaceted challenges of attaining deeper levels of learning inherent in striving toward mastery of 21<sup>st</sup> century competencies or key thought processes and skills today's learners need for personal and professional preparedness to live and thrive in the modern world, including critical thinking, complex problem solving, communication, and collaboration. A primary goal is to share mindfulness methods, wellness techniques, and a growth mindset approach to support social and emotional learning integrated in undergraduate and graduate level teacher education course curricula and connected professional field experiences in diverse childhood education settings. Additionally, use of mindfulness and growth mindset techniques implemented in a literacy intervention program designed to support young struggling readers are highlighted. Many strategies presented are geared toward teaching young students new ways to manage the frustration and emotions related to ongoing learning challenges. Social and emotional learning supports for use in coping with obstacles to learning, such as multiple academic struggles and life stressors, are discussed. Techniques presented can be adapted for use with a wide range of audiences and age groups. Lessons learned and reflection on successful implementation of mindfulness methods, wellness strategies, and a growth mindset approach for supporting social and emotional learning in diverse educational settings are shared.

Keywords: Social and emotional learning, Mindfulness, Growth mindset, 21st century competencies

#### Introduction

The precarious nature of the current global educational landscape has created unique challenges for modern learners of all ages, as well as educators preparing to teach them. Some of these challenges simply did not factor into teaching-learning processes as prominently just a generation ago. For instance, the impact of technology integration, a focus on mastery of 21<sup>st</sup> century competencies, the quest for global citizenship, and coping with the resultant frustrations of striving to excel in all realms simultaneously, has led to new levels of stress and frustration for educators and students alike. These added variables extend far beyond teaching and learning the requisite content area knowledge and skills of educational curricula and have made it even more important to focus on educating the whole child to adequately prepare children for the future.

The Association for Supervision and Curriculum Development (ASCD), a leading international educational organization (ascd.org), has long advocated the need for a Whole Child approach to education. ASCD (2007) developed a new learning compact entitled Educating the Whole Child, which identified investing in children's health, safety, engagement, support, and challenge as essential elements of educating 21<sup>st</sup> century learners. Toward that end, it's imperative for educators to carefully consider ways to help nurture the many, and often complex, facets of a child's overall development, which include social and emotional learning components, along with academic knowledge, skills, dispositions, character education, etc. Noddings (2005) discussed the innovative goal of happiness as one that might support pedagogical choices and contribute toward inspiring the joy of learning as part of educating the whole child. In order for children to be able to find the joy in learning, they need to be able to develop social and emotional learning skills, such as self-regulation and prosocial behaviors because, without them, academic success can become unattainable for some learners. Broadening the scope of childhood education curricula to include more focus on social and emotional learning is pivotal toward helping children develop vital skills they'll need for success in school and in life. In turn, employed educators currently teaching young learners, as well as teacher candidates preparing to teach children in the future need to become well-equipped to help children develop social and emotional learning skills that will serve them well throughout their lives in our increasingly complex world.

Professional experiences throughout the past 25 years as a career educator have made the need for a shift toward inclusion of SEL supports for all learners as core components of what we teach children in school and how we train the future educators pursuing certification quite evident. Personal experiences with the hardships of teaching and what it takes to thrive as an instructional leader have made the author realize, without solid SEL skills, educators and children will face unnecessary challenges in an already arduous world. This ignited a passion for finding ways to bring a focus on SEL supports into teacher preparation programs and guiding teacher candidates toward successful implementation of these strategies in diverse childhood education learning environments. Effective mindfulness methods used as SEL supports with young learners and teacher candidates will be shared in this chapter.

#### **Literature Review**

Social and Emotional Learning

Social and emotional learning (SEL) has been defined by Reilly (2017-2018) as an instructional approach that takes into account emotional components that either facilitate or impede learning built on safe, positive relationships cultivated between educators and students. She described the cumulative goal of education as "offering students interrelated academic, personal, and social competencies that have long term impact on their lives and stressed two key tenets of a social-emotional approach to learning as a caring, responsive

#### Jennifer Lauria

school climate for both students and adults, along with children's emotions, behaviors, learning, and regulation being inextricably intertwined" (Reilly, 2017-2018, p. 57). Key to SEL, students' emotional wellness comprises a substantial component of their overall wellbeing and mental health. Curiosity and joy for learning can become muted when social and emotional struggles become part of the equation. While modern educational systems continually have been developing programs to help educators and families support students' social and emotional health, more work needs to be done to help provide students with the tools they need to thrive despite incremental stressors ever present in our modern global society that can function as potential obstacles to their academic success.

Within the realm of SEL, the use of mindfulness techniques is on the rise in a variety of educational settings. Mindfulness can be defined, generally, as consciously focusing on the present moment. Mindfulness expert, Jon Kabat-Zinn (2017) defined mindfulness as paying attention, intentionally, in the present moment, and non-judgmentally. Some researchers, who have discussed mindfulness practices in terms of breathing and focusing exercises that enhance attention and awareness, have reported the benefits of incorporating mindfulness to support social and emotional learning, and identified the ability to manage stress and pay attention as important determinants of well-being and successful learning (Titone, Feldman, & DeRosato, 2017-2018). A literature review revealed school-based mindfulness research that included a specific focus on social and emotional learning. Broderick and Metz (2009) successfully piloted a mindfulness curriculum for adolescent learners in 2009. Later, a SEL program involving mindfulness and caring for others, designed for elementary school students was examined extensively by Schonert-Reichl, Oberle, Lawlor, Abbot, Thompson, Oberlander, and Diamond (2015), who described significant gains in cognitive control, stress physiology, empathy, perspective-taking, emotional control, optimism, school self-concept, and mindfulness were reported for the children who received the SEL program with mindfulness components.

#### Growth Mindset

Dweck (2006), who conducted extensive research on growth versus fixed mindsets and their implications for learning success, defined mindsets as beliefs about yourself and your most basic qualities in terms of fixed mindsets that are givens and therefore, fixed, and growth mindsets that can be cultivated throughout one's life through passionate practice, dedication and effort. She shared her belief that cherished qualities can be developed, thus creating a passion for learning; each successive learning opportunity will provide more experience with careful consideration of someone else's position on a selected topic or understanding another's problem-solving strategies, develops their capacities for critical thinking, deeper levels of reflection and effective communication skills through collaborative learning. She stressed that educators can help foster the development of growth mindsets as students strive to improve and grow rather than rely solely on the strengths they already possess and areas in which they presently excel. Another motivation technique proposed by Dweck (2006) was to make students believe they can achieve by removing negative, defeating talk, along with the word "can't," from their vocabularies and to make a habit of consistently using the term "yet", as in "I can't do this YET"!

Busch (2018) discussed growth mindset as the idea that intelligence can be developed in his synopsis of growth mindset research written for educators in which he synthesized results of multiple studies and reported other advantages of a growth mindset approach beyond academic attainment, such as students coping better with transition, higher selfregulation, and pro-social behavior. Furthermore, he identified mental health benefits of adoption of a growth mindset including less aggression, higher self- esteem, and fewer symptoms that can be associated with anxiety and depression. He also shared recommendations centered on teachers carefully considering word choice in praise and feedback to highlight strategies for improvement rather than more commonly used generalized modes of praise, which tend to omit more specific feedback to help students grow.

#### **Practical Applications**

As a key component of social and emotional learning, a mindfulness approach can be particularly beneficial in childhood education settings as a foundation for future self-care, caring for the welfare of others, and development of stress management tools and selfregulation. Various modes of utilization of mindfulness approaches to help foster students' social and emotional development have been highlighted in mindfulness literature. Such evidence warranted personal reflection about how teacher education programs prepare future educators to enter their chosen profession and prompted careful consideration of more prominent infusion of SEL elements in curricular redesign of teacher preparation programs that aim to nurture caring, competent, and confident educators.

This professor's comprehensive work as a PreK-5 classroom teacher in a diverse and challenging urban New York City public school, followed by nearly two decades as an education professor in higher education revealed common threads regarding the need for SEL supports for teacher candidates, and the young students they are preparing to teach. In conjunction with substantial faculty teaching and scholarship, serving as Director of both undergraduate and graduate Childhood Education programs for a combined 17 years granted the flexibility to redesign course curricula, including the Health education methods courses to expand the mental health components toward a more in depth focus on SEL.

From the onset of a strategic focus on SEL supports, teacher candidates consistently requested even more work with the SEL components to inform their classroom practice. Serving as an unanticipated outcome each semester, without fail, several students would comment on how they began to apply many of the SEL supports explored in courses to their own personal and professional lives and lamented that they believed mastering such support techniques as much younger learners would have helped them tremendously throughout their earlier years of schooling. That dynamic prompted my sharing of how I'd used many of the SEL supports myself as a beginning teacher, then a professor brand new to higher education and navigating demanding tenure and promotion processes up through earning the rank of full professor, and continue to implement them to this day, particularly the deep breathing techniques and meditation, which can be used almost anywhere and at any time. Such candid discussions regarding realities of teaching stressors and coping strategies for use in tackling them contributed to the community building components of our classroom learning environment. Through leading by example, strategies for implementation of SEL supports teacher candidates would be expected to utilize in their professional field placements with diverse students in grades 1-6 were modeled. Soon afterward, cooperating mentor teachers in field placements were partnered with the teacher candidates, and the young students' families, were offered opportunities to learn about the SEL supports to be implemented in the classroom by our teacher candidates, such as mindfulness methods, including meditation, yoga for children and families, breath work, gratitude journaling, etc. The cooperating mentor teachers were receptive to learning new techniques for their own professional development and helped facilitate the scheduling of modes of SEL outreach to families.

In early 2018, the *Learning & the Brain* organization's *Educating Mindful Minds: The Science of Stress and Resilience* conference, held in New York City, provided an invigorating forum through which a plethora of brain-based research was shared by leading mindfulness experts on the neuroscience aspects and benefits of this essential component of learning. Initial steps for incorporation of mindfulness in teacher education course curricula that have been developed and implemented at Wagner College, a private, 4-year, liberal arts college in New York City, were shared through poster presentations at the conference. This presenter focused mindfulness methods and a growth mindset approach as SEL supports that have been successfully integrated into the course curricula of Wagner College's undergraduate and graduate level teacher education programs in Childhood Education (grades 1-6) through which teacher candidates earn dual certification in general and special education. More specifically, the mindfulness strategies shared included: a) implementation of a growth mindset approach to providing effective, actionable feedback that helps foster communication between teachers and students to develop professional relationships and establish a rapport conducive to learning, b) cultivating kindness and nurturing a culture of mutual respect in which students feel valued and safe to take academic risks; and c) mindfulness methods that help manage stress and foster resilience.

In several teacher education methods courses, mindfulness techniques and a growth mindset approach were modeled consistently spanning 37 semesters in total to date. Undergraduate and graduate level students learned about the benefits of self-care as crucial for success, rather than merely a welcomed enhancement, and focused on guided meditation, a growth mindset approach, yoga for children, movement breaks, deep breathing, body scanning, kindness strategies, nutritional tutorials, high quality sleep strategies, journaling, and relaxation. The mindfulness techniques were taught and modeled in an effort to support SEL and provide stress management training to help foster higher levels of resilience, overall wellness, and self-confidence. Some techniques were modeled through "thinking out loud" to demonstrate why mindfulness strategies such as kindness training and use of growth mindset language could be beneficial in each scenario and how they might be utilized in diverse childhood education classroom field placements. Others were modeled through active demonstration requiring substantial student participation, including guided meditation, deep breathing, yoga for children, and body scanning. For instance, we began course sessions with mini meditations, paused for brief movement breaks, and ended class with deep breathing during the debriefing and reflection portions of our lessons, which provided teacher candidates with opportunities to observe the implementation of the supports, become active participants, and reflect on the experiences from a child's perspective prior to implementing each technique in their classroom field placements. Teacher candidates were encouraged to implement the mindfulness methods learned in their teacher preparation courses in corresponding professional classroom field experiences in preparation for the upcoming immersive student teaching semester. Table 1 presents easily accessible, cost free resources and techniques that were utilized with implementation of mindfulness methods in Wagner College's teacher education programs, as well as in diverse childhood education settings, to help support students' social and emotional learning. Several of the children served in the professional classroom field placements were coping with serious life circumstances, including homelessness and extreme poverty and were in dire need of stress relief and tools to help them process feelings of hopelessness, fear, and despair.

Easily Accessible Mindfulness Resources	Getting Started with Mindfulness Techniques
1. Mindsetworks.com	1. Strategic self-care
2. GoZen.com	2. Guided meditations
3. MindBodyGreen.com	3. Deep breathing
4. MeditationDojo.com	4. Dissolve-A-Thought
5. KidsYogaStories.com	5. Quality sleep
6. MindfulInquiry.org	6. Body scanning
7. Littlefloweryoga.com	7. Purposeful nutrition
8. Mindful.org	8. Mindfulness breaks
9. YourTherapySource.com	9. Fun physical exercise
10. Shambalakids.com	10. Movement in learning activities
11. Mamarooyoga.com	11. Feelings Yoga/Yoga for Children
12. TheMindfulClassroom.wordpress.com	12. Journaling
13. Calm.com/schools	13. Growth mindset language/behaviors

14. Mindfulschools.org	14. Kindness
15. Sleepbeditations.com	15. PLAY !

Table 1. Easily Accessible, Cost-Free Mindfulness Resources for Educators.

Consistent use of growth mindset language can help educators clearly communicate their belief in students' abilities to improve, along with their commitment to help them strategize how to do so. It sets a tone on partnership in the teaching-learning process between teacher and students, which can motivate learners to persevere, rather than one of criticism that often closes down lines of communication Through use of growth mindset-based communication, children aren't left feeling defeated in accepting a grade with no additional feedback. Rather, their effort might be acknowledged more positively, coupled with specific comments on components needing more work. For instance, an educator might communicate the following comment to a student that demonstrated much effort but still hasn't achieved mastery. The comment might be framed as "I'm proud of the extra time you've put in to work on your problem-solving skills, but let's conference soon to figure out where you are still experiencing difficulty and construct a plan together. This sends a message to the student that the teacher recognized the effort expended and is offering further support, indicating a more collaborative teacher-student partnership, rather than simply indicating the work was not completed successfully with a low grade and no feedback. The following growth mindset language prompts retrieved from www.mindsetworks.com were utilized as well. When providing more feedback to learners who struggle despite strong effort, language such as "I realize you didn't do as well as you wanted to. Let's look at this as an opportunity to learn. You are not there/here yet. When you think you can't do it, remind yourself that you can't do it yet!!" or "You might be struggling, but you are making progress. I can see your growth in . Look at how much progress you made on this. Do you remember how much more

\_\_\_\_\_. Look at now much progress you made on this. Do you remember now much more challenging this was (yesterday/last week/last year)?" can be effective. Another example used for this same purpose provided by mondsetworks.com was "I admire your persistence and I appreciate your hard work. It will pay off!" For communicating a learning goal at the onset of a lesson, a teacher might choose to say "Today's learning objective will give everyone an opportunity to stretch beyond your comfort zone. I do not expect you to know this concept already and am here to help you learn challenging material. We're in the learning zone today. Mistakes are our friends!" Or, in order to communicate high expectations, "Let's make mistakes together! I have seen you stretch and succeed in the past. Let's do it again!" is a recommended prompt.

During adoption of a growth mindset approach, it was one thing to motivate teacher candidates to want to try the techniques when providing feedback to children in classroom field experiences and teach them how to do so, but quite another for them to be properly equipped to implement the techniques on their own. Beginning with intensive modeling and practice in the teacher education courses prior to implementation, the clear and focused growth mindset language prompts provided by www.mindsetworks.com proved to be very effective tools. The positive responses teacher candidates received from young learners when using the growth mindset approach to communicate feedback resulted in higher levels of motivation and confidence for both the children and teacher candidates alike.

Use of such specific, supportive, and encouraging language may help a learner recognize the teacher's belief in their ability to improve, which can help to encourage the student to continue working toward mastery. A growth mindset approach to classroom communication and modes of feedback can help children develop self confidence in their own abilities, begin to appreciate the power of perseverance, and believe in their own potential for success. Dweck (2006) explains, in her revolutionary work on mindsets, that a growth mindset thrives on challenge and sees failure not as evidence of lack of intelligence but as a promising springboard for growth and for stretching our existing abilities. Additionally, along with

motivating and supporting struggling students, growth mindset-oriented feedback can inspire successful students to even higher levels of achievement.

Stemming from the aforementioned teacher education curricular expansions, the same SEL supports also were infused throughout a reading intervention program, designed to help first grade, at-risk children in a New York City public school learn calming techniques for relaxation, anxiety relief, and focusing attention for use in coping with the disappointment that can arise when experiencing reading difficulties, along with other academic and life stressors. This proved to be particularly helpful for many student participants who were experiencing rather extreme hardships beyond their academic struggles and clearly needed support in managing their emotions and frustrations in order to be able to focus and concentrate on literacy development. One of the program's primary goals, beyond use of the SEL tools when experiencing high levels of emotional frustration and lack of focus while learning, was that children would continue to utilize some of the mindfulness techniques and growth mindset language used in the reading intervention program in their daily lives both in and out of school going forward after program completion. The mindfulness components proved to be essential program elements, teaching children simple techniques for calming their minds and bodies to prepare to focus on learning, as well as cope with frustrations they may face both in and out of the classroom. Some of the mindfulness techniques were deep breathing, guided meditation, yoga for children, journaling, and energizing through movement. Many of the deep breathing exercises corresponded directly with the characters in the daily reading texts, such as "Moose Breathing" for the Morris the Moose text and the "Elephant Sigh" stress release exercise for Horton Hears a Who, a Dr. Seuss text in which the main character, Horton, was an elephant.

Children reflected in personal "My Mindfulness" journals each day after participating in the mindfulness exercises. Each entry highlighted the name of the day's technique and included either a drawing of the exercise or a few words about how students felt about it. At the end of the program students took the journals home as a resource to support continued mindfulness practice and journaling. Student testimonials, journal reflections, and qualitative attitude surveys evidenced predominantly positive responses to the mindfulness techniques and growth mindset language implemented throughout the duration of the program. Many students began to self-correct with use of growth mindset language toward the end of the program through replacement of their former negative responses, frustrations, and/or tantrums characterized by consistent "I can't" language with "I can't do this yet, but these are the things I will do to improve so that <u>I can.</u>" A related program objective was to help struggling readers improve their attitudes toward reading and to believe in their abilities to grow as young readers despite multiple reading difficulties. Consistent use of growth mindset-oriented language and behaviors were modeled to encourage students to embrace the idea of learning as a growth process full of mistakes needed for improvement and development of perseverance. It helped the children begin to view literacy mistakes as learning opportunities rather than defeats and validated students' expressions of frustration they experienced with literacy struggles, while providing encouragement and support strategies to help them overcome hurdles. It eventually became evident that the slight shift toward feeling more supported while experiencing reading difficulties helped the children to become more optimistic toward improving their literacy skills Simultaneously, many participants demonstrated higher levels of self-confidence regarding literacy skills and willingness to persevere, along with more positive dispositions toward reading. Observation of students utilizing some of the mindfulness techniques and growth mindset language on their own when needed, truly was a program highlight.

#### Conclusion

The ethic of caring as a disposition has a prominent role in social and emotional learning as it provides a basis for students to develop empathy, compassion, a sense of justice, positive values, and the capacity to take action. For learners of all ages, caring thinking includes caring for oneself and caring about others. Students involved in caring thinking recognize what they value and acknowledge their feelings about pertinent issues, as well as the feelings of others. Prior to teacher candidates' implementation of a growth mindset approach through instructional methods and both verbal and written feedback for young learners in classroom field placements, it was imperative to ensure they were placed in classrooms that exhibited safe, respectful, and caring learning environment in which students would be willing to take risks and challenge themselves. The goal was that meaningful and regular use of the suggested growth mindset language prompts might help children begin to appreciate that although taking risks might lead to some mistakes, they could learn from and didn't need to fear making mistakes during the learning process. Fostering growth mindsets can support students social and emotional learning and help students enjoy learning in ways that aren't possible when evaluation of progress is perceived through a more critical lens. Students can experience lifelong benefits, including self-confidence, positivity, and perseverance, from working with caring educators that encourage growth mindsets. Dweck (2006) expressed that the passion for stretching yourself and sticking to it, even, or especially, when it's not going well, is the hallmark of the growth mindset and allows people to thrive during some of the most difficult times.

A multitude of SEL supports can be utilized by educators to help mitigate daily stressors in their own lives to better equip them to support their students' SEL toward that same end. Several cooperating mentor teachers that partnered with the teacher candidates in classroom field experiences expressed interest in continuing the practice of utilizing SEL supports when the placements ended due to the improvements they had observed in children's achievement, work ethic, attitudes, and levels of motivation. Some commented that they were pleasantly surprised how incorporation of mindfulness methods and focus on a growth mindset approach could shift the dynamic of classroom culture so positively, particularly since they had not learned to use SEL supports in their own teacher training or professional development endeavors. Learning more about the role of SEL in students' overall academic success can help educators to better prepare children to face the inherent challenges of striving to become productive, caring citizens of our multidimensional global society and cope with the increasingly complex challenges they will inevitably face. A logical next step could be incorporating training on use of SEL supports and consideration of a growth mindset approach into professional development endeavors for employed teachers and infusing training into course curricula and corresponding professional field experiences in more teacher education programs. Additionally, focus on other wellness strategies for students, teachers, and families, such as guidance on healthy living (nutritional coaching, importance of regular exercise, quality sleep, and overall stress relief elements) would add value as effective supports for key stakeholders working in partnership to best serve students' needs, while also teaching elements of healthful living to children.

Wagner College's teacher preparation programs have grown in breadth and depth through expansion of course curricula to include more strategic focus on techniques for infusing SEL supports in pedagogy implemented in diverse classroom field placements in order to help teacher candidates guide young learners in managing how to cope with stressors. The curricular adjustments were well received by the teacher candidates, many of whom expressed gratitude for the experiences of guided support while learning how to implement mindfulness methods and a growth mindset approach. They were confident in their abilities to be able to effectively incorporate these methods into their pedagogy once certified to teach and planned to use the SEL supports in their future classrooms. Again, an unexpected outcome of integrating mindfulness methods and a growth mindset approach into curricula of multiple teacher education courses arose as the majority of teacher candidates continually expressed how much the mindfulness techniques they were learning to implement with diverse student populations were beneficial to them as adult learners in helping them balance the challenges of pursuing dual childhood (1-6) teaching certification in both general and special education. Consistent themes prevalent in course evaluations included sentiments such as, "I can only imagine how much more enjoyable school might've been for me if I'd had access to support strategies like simple meditation or deep breathing work I could use on my own without needing help from an adult because I wouldn't have felt so overwhelmed." Or, "I hadn't realized the power of my word choice and just how negative my mindset had been, when being kinder to myself with more positive self-talk would've made my life less stressful". Acknowledging one's own effort, focusing on the progress being made, and persevering despite challenging circumstances are important life skills students can develop though use of mindfulness methods and a growth mindset approach as SEL supports that can extend far beyond using them to overcome academic, social, and emotional adversities throughout their schooling.

Similarly, the young first grade children who participated in the literacy intervention program began to express positive comments about using the new SEL supports they'd learned. Although some couldn't articulate exactly what was working as they participated in the guided meditations, yoga for children, pictorial journaling, or deep breathing exercises, their smiles, lower levels of aggressions, and improved social skills were indicative of beneficial outcomes. By the last week of the program, parents and visitors noted a difference in the children's behavior and improved ability to focus on reading. Program evaluations and feedback have inspired a second phase through which quantitative data can be collected for analysis.

Infusion of mindfulness methods in teacher preparation programs can begin slowly, with perhaps just a few techniques, and can create a shift toward positive changes with potential for substantial impact on students' social and emotional development, which can empower educators with practical tools to support struggling students, as well as those who are ready to aim even higher. The SEL supports infused in to teacher education course curricula and, later, implemented in classroom field placement work with students in grade 1-6 were simple to incorporate. They included mini meditations at the beginning of class to help focus our attention and calm our minds, brief movement breaks when needed to energize our bodies and minds, yoga, and as an element of closure, guided deep breathing and journaling during debriefing and reflection portions at the end of class. None of the techniques took much time, yet were very impactful components of the learning experience. Teacher candidates were asked to envision themselves as the young learners they'd be implementing each strategy with to get a sense of how children may perceive these unfamiliar additions to the daily classroom experience.

A plethora of free and easily accessible online resources utilized as supplemental course resources were presented in Table 1 to help educators experiment with SEL supports. Additionally, these resources can be shared with families through home-school partnerships to continue mindfulness practice at home. Jain (2017) believed mindful children react differently to challenges. She touted mindfulness as a skill that can improve children's impulse control, calmness, kindness, patience, compassion, empathy, executive function, and attention spans, as well as contribute toward nurturement of self-respect and self-compassion. In light of the multifaceted challenges modern learners face in today's global society, consideration of

infusing a focus on mindfulness in teacher education programs and, in turn, diverse classroom settings, can benefit all stakeholders with minimal effort and cost, and a substantial return on investment. Although SEL supports shared were geared toward teaching young learners new ways to cope with the frustration of ongoing learning challenges and obstacles, such as multiple academic struggles and life stressors, techniques presented can be adapted for use with other audiences and age groups as supports for coping with inevitable life stressors in the personal and professional realms.

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# The Second Generation of the Software Project Management Innovation (SPM) Methodology: Applying the Methodology in SME

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## Abstract

This paper continues the journey of the first generation of the Software Project Management (SPM) methodology presented at the third 21<sup>st</sup> CAF conference at Harvard (2015). The current study described in this paper seeks to define a second generation of the agile process (SPM), which comes under the auspices of the Software Development Life Cycle (SDLC). This method manages IT projects through service-oriented iterations that follow the aspects and characteristics of sustainable agility. The second generation of the SPM is produced through applying, adopting, and testing the method into many IT projects.

Keywords: SPM, Software project management, Agile.

#### Fahad Alied

#### Introduction

In the previous paper (Aleid, 2015), the author presented the first generation of the agile methodology called Software Project Management (SPM), which was developed and examined by the Software and Engineering Development Centre (SEDC). After two years of applying SPM the author developed a second generation SPM, which is described by this study. SPM is a developmental approach that originated in the field of IT to develop systems and applications that meet customers' satisfaction in terms high quality and within a given timeframe.

This paper briefly mentions the first generation of SPM by way of an introduction and then proceeds to describe its second generation.

The study reviews the original SPM and its concepts, values, principles and characteristics. It describes the second version of SPM. Then it covers the added value of the updated SPM, which is the central feature of this study. The final section summarizes the research by describing its contribution to knowledge, its implications and its scope for further work in the field.

#### **Literature Review**

As the author mentioned in the previous study SPM is an agile method that adopts the twelve principles in the Agile Manifesto mentioned in (Aleid, 2015). These principles are customer satisfaction, the ability to change requirements, a cycle delivery achieved within a certain time. Developers and clients are able to work together in self-organised teams, hold face-to-face regular meetings and discussions to maintain a constant pace to deliver quality software quickly with simplicity. Moreover, it has been shown in the previous academic paper that SPM has agile characteristics being modular, iterative, time-bound, parsimony, adaptive, incremental, convergent, people-oriented and collaborative. There are four core values of the Agile Manifesto which are:

"Individuals and interactions	Over	Processes and tools
Working software	Over	Comprehensive documentation
Customer collaboration	Over	Contract negotiation
Responding to change	Over	Following a plan "
(Agile Alliance, 2013).		

#### Software project Management (SPM): Second Edition

Depending on different practices and experiments in the SEDC (Software Engineering and Development Centre), the second version of the SPM appears as shown in figure 1 and figure 2.



Figure 1: Iterations in SPM

In SMEs (small-to-medium enterprises) where there are often many IT projects and limited IT professionals, the second version of SPM aims to utilize every resource organizations possess. As mentioned in the previous study (Aleid, 2015), the author demonstrated that for each IT project, an SME needs a team of three to nine persons consisting of system architects, programmers, system analysts, documenters, testers, quality assurance specialist, customers' representative etc. Where organizations have a shortage of specialists, they are limited to the number of IT projects they can develop and manage. This is because each project will require one specialist from each different service to be involved. Therefore, a second version of SPM was developed that is service oriented rather than dependent upon the individual as seen in figure 1. In order to enhance efficiency in terms of time and effort for SMEs, the project team has amended the methodology depending on the
stage the project has reached. This is achieved by representatives from each service engaging the process at the appropriate stage. In this version of SPM, iterations are based upon service oriented; therefore, if one staff member goes another is ready to join.

For example, at the beginning of a project, not everyone is involved. It usually involves just the user/customer and a representative of system's analyst team preparing the initial business document. Here iteration may take between three to ten working days. During this stage, SPM saves time and effort for the other related staff in SMEs.

The second iteration occurs after completion of the initial business document and involves the solution architect's service to develop the structure, design the solution to the requirements stated in the business document. It also involves the decision of the need to develop a new system/application or add some functionality to a current one to meet the customer's requirements and the prerequisite to integrate it with other systems. The solution architect document is the result of this iteration. Then, the third iteration involves the solution designer's service who defines the IT solution for those requirements which are represented by the solution design document.

The fourth iteration involves software development service, which is responsible for developing the software. The fifth iteration involves the release management service that plans for release of the project. The sixth iteration involves the IT Operations service which responsible for the infrastructure and application deployment. The seventh iteration involves the quality control service where there is a quality assurance that ensures the team is doing the right things in the right way.

Each specialist in the organization should be oriented about each project in which their service is involved. Figure 2 below shows the development life cycle in SPM methodology.



Figure 2: Development life cycle in SPM

## **Research Contribution To knowledge**

As mentioned earlier, this paper presents the second version of SPM, which is considered to form a good solid ground for improvement and can assist SMEs to develop their IT projects.

#### Implication of the study

This paper has theoretical, practical and methodological implications for academics and firms to benefit. To begin with, the study presents a framework that can be applied as an initial one for further studies. The framework can be used by SMEs in their IT projects. Moreover, it provides a new version of one of the agile methodologies for theoretical discussion among academics.

### **Further work**

This paper continues the research based upon previous work conducted by (Aleid, 2015). Further work is required to confirm the researcher's findings and bring about improvements to the methodology.

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