



# ADVANCES IN SOCIAL SCIENCES AND MANAGEMENT

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## The Post Covid-19 Violence Prevention Approaches in Schools and Students' Achievement in Selected Government-Aided Secondary Schools in Jinja City, Uganda

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### Abstract:

The study intended to examine the impact of the post-COVID-19 violence prevention approaches in schools on students' achievement in selected government-aided secondary schools in Jinja City. The study was designed to specifically examine the various post-Covid-19 violence prevention approaches, establish the association between the various post-Covid-19 violence prevention approaches and students' achievement, and identify challenges faced by teachers when teaching students in the post-Covid-19 era in selected government-aided secondary schools in Jinja City. A qualitative approach was used to collect data from teachers and head teachers' results were analyzed thematically and were presented verbatim. Findings revealed that students and teachers acknowledged the presence of school rules and regulations but were not called upon to design them. Administrators work with teachers and prefects to ensure students put the rules into practice, dialogue is used to settle conflicts, and student leadership is encouraged. Further, if rules and regulations are clearly explained to students, they become cooperative, allowing them to concentrate on their work, revise hard, and get good grades. Dialogue encourages students to express their views, participate actively in their education, and synthesize their thoughts before acting. Suspension helps eliminate the wrong characters and retain focused and serious students. The study concluded that Students and teachers acknowledged the presence of school rules and regulations, administrators should work together with teachers and prefects to put into practice and schools' rules and regulations for the betterment of the school and attainment of quality education. Also, it noted that students who do not adhere to the rules and regulations of the school are an indication that forces are hindering their ability to implement ideas from the school administrators. Based on the conclusions above it is recommended that the school rules and regulations need to be effectively implemented. Also, instead of school administration appointing student leaders, should have a policy in which students choose their leaders. The student leaders should be included in decision-making. Finally, punishments should continue to be used so long as they are by the stipulated rules and regulations.

*Keywords: Covid-19, epidemic, Education in Uganda.*

## INTRODUCTION

According to Shanahan (2020), the potential of targeted violence in schools will remain heightened in the aftermath of the Covid-19 epidemic as more children return to school full-time. As a result, preventing targeted violence should continue to be a top priority for schools and the communities in which they are located. UNESCO (2023) established that confinement and increased economic strains on homes may cause stress, tension, and strife, leading to physical, psychological, and sexual abuse against children. Increasing internet use can expose youngsters to online dangers such as sexual exploitation and cyberbullying. UNESCO and partners have issued a suite of materials as part of Safe to Learn, a five-year worldwide campaign to prevent violence in schools, to assist lead this effort and keep kids safe during these unprecedented times. This includes a technical note on COVID-19 and its implications for protecting children online, advice for education ministries as they assist schools in providing safe online learning experiences, and a set of recommendations - for governments to help prevent and respond to violence against children in various learning environments, including at home (UNESCO, 2023).

In most incidents, an individual who has carried out an act of terrorism or targeted violence had identifiable potential risk factors before radicalization to violence and observable indicators once they radicalized to violence. Lockdowns are useful in imposing social distancing measures and locating COVID-19 patients, but they are detrimental to education and the economy (Oghenowede, Viens, & Ugoji, 2021). During its early years of political independence, Uganda acknowledged education as a vital tool for social and economic growth and transformation (Hassan & Macha, 2020). It is emphasized that education is vital for achieving national unity, democracy, and social fairness for all citizens (Hassan & Macha, 2020). Similarly, Uganda's Vision 2040 acknowledges education as an important endogenous driver of economic growth enabling the human capital development required to enhance and accelerate the country's transition and capitalize on the demographic dividend (National Planning Authority, 2020).

All schools in Uganda endeavour to avoid school violence, and make schools safe places. Students, and parents all play critical roles in improving school safety. Adults may show leadership by reminding kids that schools are normally extremely safe environments for children and teens, as well as emphasizing what safety measures and student supports are currently in place (Emokol F, Muweesi. C et el, 2022)

The recent pandemic of Covid-19 has posed a serious threat to schools in Uganda as closures of institutions have led to unprecedented disruption in the learning process. It has also posed a myriad of social problems, including a surge in violence in and around schools in Jinja city. According to the report by Uganda police [2020], there has been an increase in violent behaviours among students such as physical fighting. Assault and vandalism, which has attributed to a lack of access to regular schooling [UPF, 2020]. Moreover, the closure of schools for an extended period has resulted in a decrease in students' academic performance and other forms of academic achievements [Ministry Of Education and Sports 2020]. Against this background, this paper seeks to explore the post Covid-19 violence prevention approaches and their effect on student achievement in selected government-aided schools in Jinja City Uganda.

## **PURPOSE OF THE STUDY**

The study was intended to examine the post Covid-19 violence prevention approaches in schools on students' achievement in selected government-aided secondary schools in Jinja City.

## **SPECIFIC OBJECTIVES**

1. To examine the different post Covid-19 violence prevention approaches in selected government-aided secondary schools in Jinja City.
2. To establish the association between the different post Covid-19 violence prevention approaches and students' achievement in selected government-aided secondary schools in Jinja City.
3. To find out challenges faced by teachers when teaching students in the post- Covid- 19 era in selected government-aided secondary schools in Jinja City.

## **THEORY OF THE STUDY**

Lee Canter's Assertive Discipline Theory, which he created in 1979, was employed in the study. The assertive Discipline Theory defines four disciplinary competencies that all teachers must learn to manage problem behaviours effectively. They include establishing suitable behaviours that serve as the foundation for classroom norms, setting limits for incorrect conduct methodically, continuously reinforcing appropriate behaviour, and cooperating with parents and head teachers. A perceived lack of discipline in public schools led to the development of the aggressive discipline method. Lack of discipline is the fault of parents, teachers, and students. Although managing students now is more challenging than it was in the past, assertive discipline is based on the idea that all students, except those who have organic issues, can act appropriately, even though they may choose not to. The idea is pertinent to the study because it clarifies how classroom management of disruptive student conduct, which is essential to students' academic success, works. Both teachers and students in a classroom context have demands that can be satisfied by the aggressive disciplinary approach. No of their age, students require clear guidelines, rules, and encouragement. They also require educators who will intervene to correct their misbehaviours. In contrast, teachers must prevent pupils from controlling them and must feel free to ask for help from parents and head teachers. Because teachers must fulfil their needs and desires before they feel comfortable enough to provide a healthy learning environment, their needs and wants are prioritized over students' needs. This theory is pertinent to the study because it offers an organized disciplinary program, which is sometimes missing in a regular classroom yet is necessary for many special classes kids' effective mainstreaming. The program is specified, right down to the number of days for the plan's efficacy to be assessed, which reduces the likelihood that the children would think the punishment is being meted out on the teacher's whim. Everyone in the classroom is aware of the rules and their implications. This makes it easier for the teacher to put it into practice, which may be especially beneficial in the case of new teachers.

## **LITERATURE REVIEW**

### **Post Covid-19 Violence Prevention Approaches**

Headteachers need to navigate and make sense of policies and guidelines created by top officials and other influential external stakeholders while also engaging in sense-giving with their teachers (Sherry & Chen, 2019). In addition, Headteachers ought to implement changes and create new organizational routines to support their students, especially for students receiving special education services (Weiner, Chantal, Corrie, & Joshua, 2021).



According to Trujillo, Moller, & Larsen (2021), the involvement of student leaders in school administration brings closer the student leaders and the rest of the students into not only classrooms but also dormitory and dining halls. These student leaders, gain leadership skills that they use and even will apply them when they leave school (Nolan, 2020). However, teachers should always carry out close monitoring of the student leaders' activities, because at times they go astray and sometimes instigate them to strike/rebel against school administrators (Agung & Imum, 2019). In Kenya, schools assert that schools set rules and regulations for the proper governing of the various lifestyles of students containing the dos and don'ts (Mambo & Katindi, 2023). Rules are aimed at promoting order and efficiency in school (Teng, et al., 2019). Effective schools demonstrate sound inclusive practices, which include emphasizing school rules, and regulations, collaborative leadership and good practice (Opere, Kamere, & Wawire, 2021).

School rules and regulations in most cases do affect students more than any other thing because they are made by the school authorities to guide and protect students while in school (Maurice, Frans, & Nihad, 2019). If discipline has to be effectively inculcated in the learners, the teacher has to be aware of all the factors and Agents that influence the formation of certain habits, attitudes and behaviour (Ming, Chen, Kris, Wu, & Lau, 2021). According to Kleopatra (2020), punishment is used as a means of disciplining action against students, but it needs to be planned and executed with great sensitivity. He also added that many teachers prefer punishments because they are easy to administer and have been used for centuries. In Africa for years until the 20th Century, teachers were beating students for misbehaving, not until the governments adopted worldwide the United Nations Convention on the Rights of the Children (CRC). This always has made learners dislike school and studying (Huda, Iskandar, Muhammad, & Kittisak, 2020).

Chanda et al., (2015) argue that promoting student's self-esteem and belongingness is more effective in reducing behavior problems than punishment. Peter as cited by Warren (2014) believes that children are by definition uneducated, they are 'barbarians' out of the gates and teachers. Mapoliza (2015) posits that the external social environment causes the alarming increase in secondary school indiscipline and that the education provided will not prevent indiscipline from recurring. Factors like drug abuse, laxity of parents, influence of mass media, and peer pressure among others, have been frequently cited as common causes of indiscipline.

According to Ain & Joshua (2020), the Coronavirus epidemic has greatly accelerated the growth of online learning in Chinese higher education. Technologies like the Internet, big data, AI, 5G, and cloud-based platforms, among others, have been used to improve education. A more adaptable approach to teaching and learning, however, does not result in infrastructure. However, infrastructure is only the start of a new paradigm for teaching and learning in the wake of the epidemic (John & Amanda, 2018).

### **Different Post Covid-19 Violence Prevention Approaches and Students' Achievement**

Parent-teacher conferences are a wonderful opportunity to extend lines of communication between home and school, keep parents informed about their children's progress both academically and socially, and develop cooperative strategies that can ultimately benefit every student (Teacher Vision, 2018).

Encourage children to attend school consistently: First and foremost, it is the responsibility of parents to see that their children go to school every day (Amber, Ogurlu, & Nikki, 2020). However, this role has been violated by the same parents. In the rural areas of Uganda, some parents

indulge their children in domestic labour, thus working in sugarcane plantations, babysitting, scaring birds in rice gardens, selling foodstuffs in the market, and involving them in a host of other household chores to earn a living at the expense of their consistent school attendance (Kaelera, 2010).

Many studies have determined that parent involvement helps children stay focused on their academic goals and not have as many discipline problems in school (Novianti & Meyke, 2020). In addition, a healthy relationship with your child can help encourage them to stay away from negative influences such as drugs and alcohol. In the end, students with parents who continually stay involved in their child's education tend to have higher graduation rates and are more likely to attend college (Fan & Chen, 2016).

Teachers are more involved in the academic work of the children and must see to their academic growth, strength, and soundness (Hallil, Karaca, & Metin, 2021). It is, therefore, necessary for parents and teachers to meet and discuss the academic development and performance of their children to enable the parents to participate by appreciating the standard of learning imparted to the children and understanding the difficulties that some children face (Misirli & Funda, 2021). Parents can see the importance of following up with their children at home because they know the particular difficulties that their children are encountering at school (Dostal, 2021).

It is incumbent on the teachers to help children whose behaviour and attitude leave much to be desired. At this stage of their growth, kids suffer from peer influence and will readily copy what their friends do without giving a thought to the correctness of what they are copying (Seyyid, 2013). Since rural areas are vulnerable to poverty, parents have the responsibility of providing resources for school academic development projects. Unfortunately, except in urban schools where parents contribute some money to meet some expenses (examination fees, teacher's allowance, coaching fees, PTA support, etc.), parents in rural schools respond negatively to such incentives, insisting that the government must cover everything related to their children's education (Mwesigwa, 2015).

### **Challenges Faced by Teachers When Teaching Students in the Post-Covid 19 era**

Internet access is one of the main problems of various online learning regions in Indonesia. Apart from that, online learning is also not supported by the readiness of various elements such as teachers/lecturers, students/students, and parents, because this policy is a new thing and there is no technical preparation for the implementation and use of technology in the application of online learning. The government implements social distancing and physical distancing policies to prevent the prevention of the spread of the Covid-19 pandemic. The world of education as a place of activity for students at every level of education, follows PBM from home through online learning as a solution to the system education is implemented based on standards in effect during a pandemic.

According to Siahaan et al (2020), Educators have a very big role, in addition to being facilitators in student learning, as well as guiding and directing students so that they become human beings who have a broad knowledge of both religious knowledge, intelligence, life skills, skills, noble character and good personality and can build themselves to be better than before and have a big responsibility in nation building.

## METHODOLOGY

The study was purely qualitative. No numeric findings were presented. It was conducted in secondary schools in Jinja City. Jinja City comprises different divisions. However, the study was conducted in the Jinja North Division, which comprises three public secondary schools. The findings were obtained using an interview guide, which comprised a set of open-ended questions, which were to provide only qualitative findings. The results were analyzed thematically and were presented verbatim. Only expressions in terms of explanations were used.

### Presentation and Analysis of Results

**Table 1: The demographic characteristics of Respondents**

Participants Items		Number of respondents	Percentage of respondents
1. Gender	Female	12	44%
	Male	15	56%
	<b>Total</b>	<b>27</b>	<b>100%</b>
2. Age	20-25	11	41%
	26-30	11	41%
	31 and above	5	18%
	<b>Total</b>	<b>27</b>	<b>100%</b>
3. Work experience	Less than 5 years	12	44%
	6 years and above	15	56%
	<b>Total</b>	<b>27</b>	<b>100%</b>
4. Schools	School A	10	37%
	School B	9	33%
	School C	8	30%
	<b>Total</b>	<b>27</b>	<b>100%</b>

Source: Primary data

The distribution of results by gender indicated that the percentage of male participants outran that of their female counterparts, as indicated in Table 1. Further, findings revealed that most of the participants who were at the respective schools of study had an experience of 6 years and above. The number of respondents was not even among the schools because the study was conducted in the afternoon when some teachers were already in class teaching. The few who were found in the staffroom were asked to participate.

### The Post Covid-19 Violence Prevention Approaches

The study established whether the teachers and students observed the fact that rules and regulations were available in their respective schools. The findings indicated that students and teachers acknowledged the presence of school rules and regulations, which they were expected to adhere to. According to the findings, the availability of school rules and regulations is followed by students' adherence to them and the presence of a disciplined body. This did not appear to be the case in the selected secondary schools.

Sometimes, it is necessary to involve parties to whom rules and regulations apply, such as students. According to the results, there is an indication that students are not called upon to design the rules and regulations. The implication is that the chances of students being involved in making school rules and regulations are slim, indicating that students are not completely ignored when it comes to making school rules and regulations. This demonstrates the availability of the head prefect and the disciplinary body on the side of students, who may participate in staff meetings while discussing rules and regulations, either amending or establishing new ones.

According to the words of one of the head teachers, administrators work along with teachers and prefects to ensure that students put into practice the school rules and regulations for the betterment of the school and the achievement of quality education.

The findings also indicated that dialogue was a weapon used to prevent violence among students in secondary schools in the period after COVID-19. The findings by teachers revealed that when students develop misunderstandings amongst themselves or develop personal grudges against teachers, the responsible parties at the teacher and student school disciplinary committee meet and trace the source of the misunderstanding, then quickly forge ways out of the problem together. This not only helps in settling disputes but also enables the two grumbling parties to establish a friendly environment that promotes effective teaching and learning services.

The findings also revealed that student leadership opens doors for students to interact with teaching staff and administration. This is because students' views are directly represented by their prefects, who are elected into leadership. In such an environment, students' discipline is normally unpredictable because wrongdoers can easily be identified through the student leaders, who are not given space in some schools. According to responses from head teachers, in all schools, there is an environment put forth to encourage students' participation in leadership.

**Table 2: Transcript analysis of the post-Covid -19 violence prevention approaches.**

Head-teacher	Response
A	<ul style="list-style-type: none"> <li>➤ We use dialogue to handle the issue of discipline</li> <li>➤ Here, we also use any other peaceful means as the situation dictates</li> <li>➤ Sometimes, though abolished, we used corporal punishment</li> </ul>
B	<ul style="list-style-type: none"> <li>➤ So, before we do anything else, we try our hardest to ensure that school rules and regulations are not only implemented but also communicated to students so that they understand these rules and regulations... Putting rules and regulations in place is one thing, and making students understand the rules and regulations is another.</li> <li>➤ Negotiations are applied where possible.</li> <li>➤ We at times use warning systems to enhance self-discipline.</li> <li>➤ To an understanding person, we normally call those students for dialogue especially if this can help.</li> <li>➤ We expel some students to leave those who are well-behaved in the school.</li> </ul> <p>On regular bases, we enforce rules and regulations</p>
C	<ul style="list-style-type: none"> <li>➤ Students are allowed to conduct campaigns just like members of parliament. The purpose is to initiate them into a pool of knowledge that they can use to settle cases in their day-to-day social lives. Besides, initiating students into leadership is a must, and it is done every year after one year to encourage students to respect each other and also handle minor disciplinary cases.</li> <li>➤ Many parents make follow-up by being in close touch with teachers and vice versa.</li> <li>➤ We call parents in meetings to make a continuous follow-up of students' behaviours.</li> <li>➤ Keeping them busy with books to prevent them from being idle.</li> </ul>

Source: Primary data

From Table 2 above, the head teachers were asked about the approaches they employed to prevent the post- Covid- 19 violence, responses from head teachers were varying for example some indicated that there was an improvement in performance as stated by head teacher A. To foster discipline, negotiations, use of warning system are employed as said by head teacher B. To

improve student behaviour, student leaders are empowered to handle minor cases and parents are involved in monitoring their children’s behavior as intimated by head teacher C.

**Post Covid-19 Violence Prevention Approaches and Students’ Achievement**

The association between post-conflict violence prevention on students' achievement and students' achievement was viewed in different ways;

First, the findings from teachers revealed that if the rules and regulations are clearly explained to the understanding of students, they become cooperative because there is no coercive approach in any way. This in turn allows students to concentrate on their work, revise hard and get good grades. Findings from the head also support this notion.

Furthermore, findings show that using dialogue is one way a student comes to understand. This is because a one-on-one interaction places the issue between two concerned individuals. According to findings from some teachers, the issue of dialogue makes students have a feeling that the follow-up of good behaviour is between the teacher and a violent student. Consequently, students should think about revision and avoid any acts that may cause violence.

Also, research showed that dialogue encourages students to express their views, participate actively in their education, and vocally synthesize their thoughts before acting. Discussion encourages a positive learning environment, promotes discipline, and encourages pupils to use higher-order thinking abilities. Students will converse quietly while working in groups or at learning stations. To ensure that students are engaged at a higher level of thinking while they work in their groups, they should be given two minutes to review the instructions and establish their learning objectives before they start.

More findings indicate that violence is controlled by suspending students who are the wrong characters. Teachers indicated that the purpose of suspending students results in the elimination of wrong characters and remaining focused and serious students, which is a preamble to good performance strategies.

Other research revealed that for violence prevention programs to be successful, a community-wide collaborative effort is needed, involving parents, school board members, teachers, administrators, staff, social and mental health professionals, law enforcement, emergency response personnel, security professionals, and others. To create solutions suitable for their own unique school and community situations, school administrators should gather all of the aforementioned stakeholders.

**Table 3: Transcript analysis of the Post Covid - 19 Conflict resolution approaches and students' achievement.**

Head-teacher	Response
A	<ul style="list-style-type: none"> <li>➤ Through dialogue, we encourage them to take most of their time in books and improve on performance.</li> <li>➤ Dialogue leads to self-control and avoidance of bad behaviours.</li> <li>➤ Through warnings, some students use it as a good chance to sit back and concentrate on books thus, good performance.</li> <li>➤ Through rules and regulations, students who are ready to study stand firm in a focus on academic affairs.</li> </ul>
B	<ul style="list-style-type: none"> <li>➤ Through negotiations, we remind students of the reasons they are in school.</li> </ul>

	<ul style="list-style-type: none"> <li>➤ We warn students and promise them expulsions in case they fail to make it academically. This motivates them to study hard and get good scores.</li> <li>➤ Through expulsions, the students who remain at school are encouraged to study hard and avoid anything that can distract them from academics.</li> </ul>
C	<ul style="list-style-type: none"> <li>➤ When you embark on the idea of engaging students using diplomatic means, students establish a friendly relationship with the staff and administration. This, in turn, helps students spend more time on revision and get good marks.</li> <li>➤ In addition, when students observe rules and regulations, teachers become friendly and help students on an individual basis. This could not be the case if students did not observe the rules and regulations. Teachers do not normally relate to students who do not observe rules and regulations.</li> </ul>

Source: Primary data

From Table 3 above, the head teachers were asked about the approaches they use to resolve post covid-19 conflicts and improve students' achievements, Responses from the head teachers were varying for example some argued that there was an improved performance as students were encouraged through dialogue to focus more on academic affairs as stated by head teacher A. There was an improved performance as students were occasionally reminded of the reasons they are at school, warned and at worst expelled in case they fail to make it academically as expressed by head teacher B. A friendly relationship between students and staff was established as the administration engaged students as hinted by head teacher C.

### Challenges of Teaching Students in the post-Covid- 19 era

Findings show that students do not largely adhere to the administrator's ideas. This is an indication that forces are hindering the increase in students' ability to implement ideas from school administration. In a nutshell, students' involvement in implementing the ideas from school management is moderate. In many instances, teachers deal directly with students but when it comes to the administration of discipline, the head of the discipline, who, in most schools is the deputy head teacher, cooperates with the prefect in charge of discipline and handles cases of indiscipline.

The second challenge is persistent violence, which may in turn affect teachers. According to findings from teachers, it is difficult to deal with violent students because the level of violence differs and cannot be manifested at the beginning. Teachers have established that some students are so violent that they even threaten to kill teachers. A teacher will therefore fear responding to any violent acts among such students. In this regard, the principal of one of the schools stated that responding to violence becomes difficult for some students.

The removal of corporal punishment from schools before COVID-19 exacerbated the situation even after the pandemic. Traditionally, corporal punishment was the best approach to fighting violence because teachers used it as a regular treatment for students. Every student used to fear being canned. However, these days, students do not even fear fighting teachers. There is a total loss of fear among teachers as a result of abolishing corporal punishment.

Inadequate staffing is also another dilemma. Many teachers were forced to leave the profession because they were desperate to earn since schools were not operating. Some of the teachers who did return have demanded shorter work hours so they can keep a second job for fear of another lockdown. This has made the ones on the ground carry a big workload to bridge the gap and in so doing it has affected their efficiency.

Finally, some girls come to school pregnant because the government said they should be tolerated in their condition. This has promoted immorality in schools as most girls think. It is normal to study while pregnant. It has also led to irregular attendance because of the discomfort caused by the pregnancy condition and yet their parents expect good results.

**Table 4: Transcript analysis of the challenges of teaching students in Post Covid 19 era.**

Head-teacher	Response
A	<ul style="list-style-type: none"> <li>➤ Here, there is a challenge of having students who are working class and are used to touching money. It is difficult to tame any student who earns a lot of money.</li> <li>➤ Teachers have also become reluctant because they feel students need freedom.</li> </ul>
B	<ul style="list-style-type: none"> <li>➤ The greatest challenge is that there is no issue of caning. It was abolished from schools and punishable.</li> <li>➤ One more problem is that the students who reported to school after Covid 19 are unruly. They are so rude and even attempt to warn teachers who are putting them right.</li> </ul>
C	<ul style="list-style-type: none"> <li>➤ Some girls come to school pregnant because the government said they should be tolerated in their condition. This has promoted immorality in schools as most girls think it is normal to study while pregnant. It has to be irregular attendance because of the condition discomfort and yet parents expect good results from their daughters.</li> <li>➤ There is a challenge of inadequate staffing which has impacted the efficiency of teachers because they are overloaded.</li> </ul>

Source: Primary data

From Table 4 above, The head teachers were asked about the challenges they face when teaching students in the post covid- 19 era, and responses from head teachers were varying for example Some head teachers implied that it is difficult to tame who is as well a working class as stipulated by head teacher A. Corporal punishments were abolished which has made students unruly and wild to the extent of threatening and or fighting teaches who, are putting them right as declared by head teacher B. Increased immorality in schools because of the pregnant girls retained in school as per the government directive as confirmed by head teacher C.

### **CONCLUSIONS AND POLICY RECOMMENDATION**

From the findings, it is concluded that students and teachers acknowledged the presence of school rules and regulations, which were followed by adherence to them and the presence of a disciplined body. However, students were not called upon to design the rules and regulations. Administrators work with teachers and prefects to ensure that students put into practice the school rules for the betterment of the school and the achievement of quality education as supported by Trujillo, Moller, &Larsen (2021). Dialogue is used to settle conflicts between or among disagreeing parties, and student leadership opens doors for students to interact with teaching staff and administration. In all schools, there is an environment put forth to encourage students' participation in leadership, and students are allowed to conduct campaigns just like members of parliament. This is done to initiate them into a pool of knowledge as observed by Nolan (2020) that they can use to settle cases in their day-to-day social lives.

The findings from teachers revealed that if rules and regulations are clearly explained to students, they become cooperative, allowing them to concentrate on their work, revise hard, and get good grades as observed by (Mambo& Katindi 2023) and Teng et al, (2019) Additionally, when students observe rules and regulations, teachers become friendly and help them on an individual basis.

Dialogue encourages students to express their views, participate actively in their education, and vocally synthesize their thoughts before acting. The suspension also helps to eliminate the wrong characters and retain focused and serious students. For violence prevention programs to be successful, a community-wide collaborative effort is needed, involving parents, school board members, teachers, administrators, staff, social and mental health professionals, law enforcement, emergency response personnel, security professionals, and others.

Findings show that students do not adhere to the school administration's ideas, which is an indication that forces are hindering their ability to implement ideas from the school administration. The removal of corporal punishment from schools before COVID-19 exacerbated the situation, causing teachers to lose fear and students to be hesitant to handle discipline. The government is also concerned with the weaknesses of violence prevention mechanisms in schools, as there was an outstanding punishment that necessitated beating students several times in response to misbehaviour as observed by Kleopatra, (2020). The government prevented teachers from disciplining students harshly by abolishing harsh methods of discipline as observed by (Huda, Iskandar Muhammad, & Kittisak 2020), and when they administer harsh punishments, they are reported to the police for further action.

Based on the conclusions above, it is recommended that there is a need for the effective implementation of institutional regulations and communication. This should be accomplished by making sure that students always abide by school rules and regulations, communicating school regulations to students regularly, using appropriate channels of communication, ensuring that students comprehend the rules correctly, and avoiding ineffective communication methods.

As an alternative to the school administration choosing student leaders, head teachers and teachers could institute a policy in which students are allowed to choose their student leaders. Student leaders should be included in decision-making, administration, and overall management of the school. As a result, it will be simpler to enforce and keep track of rules and regulations to lower student indiscipline because they will feel like they are a member of the administration.

Punishments should continue to be used in schools if you want to effectively manage student behaviour. Teachers should constantly explain to the students why they are being punished, and these sanctions should be applied to the offence committed. Yet, they should refrain from inflicting physical injury when disciplining.

## REFERENCES

- Agung, B. P., & Imum, G. (2019). Proceedings of the 4th International Conference on Education and Management (COEMA 2019). *Springer Nature*. <https://doi:10.2991/coema-19.2019.43>
- Amber, G., Ogurlu, U., & Nikki, L. (2020). COVID-19 and Remote Learning: Experiences of Parents with Children during the Pandemic. *Journal*, 45-65. doi: <https://doi.org/10.29333/ajqr/8471>
- Dostal, E. (2021). *Biomatrix: A Systems Approach to Organizational and Societal Change*. London: South Africa: BiomatrixWeb.
- Emokol Francis, Muweesi Charles, Namisi Moses, Musiime Joseline, and Kaweesi Muhamadi, (2022) "Assessment of Student's Engagement on the Utilization of NCDC Home-study Learning Materials during COVID-19 Lockdown; A Case Study of Senior Two Class of St. Peter's College Tororo." *American Journal of Educational Research*, 10(6): 409-412. <http://doi.org/10.12691/education-10-6-6>



- Hallil, U., Karaca, H. N., & Metin, S. (2021). Assessment of parent-child relationship in Covid-19 pandemic. *Elsevier*. doi: <https://doi.org/10.1016/j.chilyouth.2020.105748>
- Hassan, R., & Macha, W. (2020). Education in Uganda; World Education News and Previews. *WENRs*, 12.
- Huda, S., Iskandar, T., Muhammad, s., & Kittisak, J. (2020). Retracted: The management of educational system using three laws Auguste Comte: A case of Islamic schools. *Growing to grow Acts*, 617-624. <https://doi:10.52677/j.msl.2019.9.018>
- John, D. B., & Amanda, E. L. (2018). Race and Discipline at a Racially Mixed High School: Status, Capital, and the Practice of Organizational Routines. *Sage Journals*, 6. doi: <https://doi.org/10.1177/0042085918814581>
- Kaelera, D. (2010). *Tips and Strategies for Increasing Parent and Family Involvement in Virginia Schools, Improving Student Achievement and Outcomes through Parent and Family Involvement*. New York: NHT.
- Kleopatra, N. (2020). Secondary education teachers' perceptions of mobile phone and tablet use in classrooms: benefits, constraints and concerns. *Journal of Computers in Education*, 257–275. doi: <https://doi.org/10.1007/s40692-020-00156-7>
- Mambo, A. W., & Katindi, D. N. (2023). Influence of Mass Media on Deviant Behavior among Bachelor-Level Students in Kenya. *Journal of Education*. doi: <https://doi.org/10.1016/j.compedu.2019.05.008>
- Marilyn, H. (2008). *Preschool education in Australia, Policies and Implementation Procedures for the education of Gifted students*. London.
- Maurice, C., Frans, L., & Nihad, B. (2019). How the different policies and school systems affect the inclusion of Syrian refugee children in Sweden, Germany, Greece, Lebanon and Turkey. *Springer Link*. doi: <https://doi.org/10.1186/s40878-018-0110-6>
- Ming, Y. T., Chen, P. C., Kris, M. Y., Wu, C. H., & Lau, Y. Y. (2021, July). Comparative analysis of Student live online learning readiness during the coronavirus (COVID-19) pandemic in the higher education sector. *Elsevier*. doi: <https://doi.org/10.1016/j.compedu.2021.104211>
- Misirli, O., & Funda, E. (2021). Emergency remote teaching during the COVID-19 pandemic: Parents experiences and perspectives. *SpringerLink*, pages6699–6718. doi: <https://doi.org/10.1007/s10639-021-10520-4>
- National Planning Authority. (2020). Third National Development Plan (NDP III) 2020/21 - 2024/25. *Uganda Vision 2040*.
- Nolan, S. L. (2020). The compounded burden of being a black and disabled student during the age of COVID-19. *Taylor and Francis*, 148-153. doi: <https://doi.org/10.1080/09687599.2021.1916889>
- Novianti, R., & Meyke, G. (2020). Parental Engagement in Children's Online Learning During COVID-19 Pandemic. *Journal of Teaching and Learning in Elementary Education*, 3–12. doi: <https://doi.org/10.3102/0013189X033004003>
- Oghenowede, E., Viens, A. M., & Ugoji, U. C. (2021). Lockdowns and low- and middle-income countries: building a feasible, effective, and ethical COVID-19 response strategy. *BMC Part of Springer Nature*, 3-5.
- Opere, O. A., Kamere, I., & Wawire, V. (2021). School Violence as a Cause of Non-Peaceful Coexistence in Public Secondary Schools in Nairobi, Kenya. *Open Journal of Social Sciences*, 130–145. doi: <https://doi.org/10.4236/jss.2019.79010>
- Seyyid, M. (2013). *The Importance of a Parents/Teachers Association (PTA) in Cameroonian Educational Systems*. London: London Times.
- Shanahan, L. (2020). Mitigating the Threat of School Violence as the U.S. "Returns to Normal" from the COVID-19 Pandemic and Beyond. *US Homeland Department*.

Sherry, G. S., & Chen, S. (2019, January 29). No school principal is an island: From individual to school sense-making processes in reform implementation. *Sage Journals*, 33(2). doi: <https://doi.org/10.1177/0892020618805799>

Teng, Z., Nie, Q., Guo, C., Liu, Y., & Bushman, B. J. (2019). A longitudinal study of the link between exposure to violent video games and aggression in Chinese adolescents: The mediating role of moral disengagement. *Developmental Psychology*. doi: <https://doi.org/10.1037/dev0000624>

Trujillo, T., Moller, J., & Larsen, E. (2021). Images of Educational Leadership: How Principals Make Sense of Democracy and Social Justice in Two Distinct Policy Contexts. *Sage Journals*, 57(4). doi: <https://doi.org/10.1177/0013161X20981148>

UNESCO. (2023). Keeping students safe from school violence and bullying.

Weiner, J., Chantal, F., Corrie, J. S., & Joshua, C. (2021, January 7). Keep Safe, Keep Learning: Principals' Role in Creating Psychological Safety and Organizational Learning During the COVID-19 Pandemic. *Frontiers in Education*. doi: <https://doi.org/10.3389/educ.2020.618483>



# The Impact of Saudi Arabia's Education Policies Under Vision 2030 on Student Performance: Saudi's Progress Benchmarked with Malaysia's Education Blueprint 2025

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## Abstract:

This study holds great significance for students, educators, policymakers, and stakeholders in Saudi Arabia as well as globally. By exploring the impact of Saudi Arabia's Vision 2030 education policies on students' performance and benchmarking this progress on the impacts of Malaysia's Education Blueprint 2025, this study provides a holistic comprehension of the true efficacy of Saudi Arabia's policies in enhancing students' academic performance. The study avoids excessive data collection efforts by relying on existing articles and resources while still providing robust insights. Therefore, the desk study approach involves collecting and analyzing Malaysia's existing articles, reports, and resources related to education policies to substantiate the literature review over 8 years since 2017, when Education Blueprint 2025 was started. Moreover, incorporating the Programme for International Student Assessment (PISA) exam results from Saudi Arabia and Malaysia provides authenticity to measuring students' actual performance that results from implementing education policies. The majority of the compiled articles (n = 10) centered around online proctoring education policy solutions. In addition, the findings demonstrated a distinct correlation between PISA performance and school achievements, evident in both the PISA 2017 and PISA 2019 datasets. This research is expected to shed light on Saudi Arabia's educational policy outcomes, offering valuable insights to policymakers and education stakeholders. In the long run, this research aims to contribute to educational practices, enhance student performance, and support sustainable development efforts in Saudi Arabia and globally.

*Keywords: Educational Policies, Vision 2030, Malaysia's Education Blueprint 2025*

## INTRODUCTION

Saudi Arabia's Vision 2030 refers to a national development plan encompassing various sectors, including education. It seeks to modernize and enhance the quality of education, aligning it with global standards to equip Saudi students for future challenges (Alfantookh, Osman, and Ellay, 2023). Similarly, Malaysia's Education Blueprint 2025 outlines the country's strategic direction for educational transformation, focusing on improving education access, quality, and equity (Ennew, 2015). However, it is imperative to assess the actual impact of these policies on students' performance to understand their efficacy. Such an understanding is crucial in informing policy decisions, enhancing educational practices, and fostering student success.

Saudi Arabia's Vision 2030 has ushered in a comprehensive transformation of the country's education sector. This visionary initiative seeks to modernize the education system, aligning it with global standards and fostering a knowledge-driven society (Alfantookh, Osman, and Ellay, 2023). Central to this endeavor is the commitment to providing quality education at all levels, marked by an updated curriculum emphasizing critical thinking, practical skills, and digital

literacy. The plan significantly emphasizes teacher training and professional development, recognizing educators' pivotal role in delivering effective instruction. By integrating technology, promoting gender inclusivity, and encouraging international collaboration, Vision 2030 aims to empower Saudi students with the skills and knowledge needed to thrive in an increasingly interconnected world (Almudara, 2019).

As Saudi Arabia's education policies transform, a parallel exploration is being undertaken in Malaysia through its Education Blueprint 2025. While both nations aim to elevate education, each blueprint reflects distinctive strategies tailored to their specific contexts. The challenge lies in benchmarking the progress of Saudi Arabia's education policies under Vision 2030 against Malaysia's Education Blueprint 2025, thereby elucidating the efficacy of these approaches in enhancing student performance. Through a comparative analysis using international assessments like PISA, a comprehensive evaluation can be undertaken to discern the extent to which these policies have translated into tangible improvements in student learning outcomes and educational quality, contributing to both countries' broader national development agendas.

The study objectives aim to shed light on the transformative journey of education in Saudi Arabia and Malaysia and offer valuable insights into the implications of their policies on students' academic achievements. By understanding the successes and challenges of these initiatives, policymakers, educators, and stakeholders can make informed decisions to cater to the future of education in their respective nations. The general research objective is to examine the impact of Saudi Arabia's Vision 2030 education policies benchmarked on Malaysia's Education Blueprint 2025 to provide a holistic comprehension of the true efficacy of these policies in influencing students' academic performance. The study aims to gain insights into how these education initiatives have influenced students' academic achievements and competencies by conducting an in-depth investigation.

To conduct a detailed evaluation of the education transformation initiatives in Saudi Arabia and Malaysia, focusing on their similarities and differences in approach, implementation, and outcomes. To evaluate the curriculum changes in both countries, particularly the integration of STEM subjects in Saudi Arabia and the emphasis on holistic education in Malaysia, and determine their influence on students' academic performance. To analyze the impact of technical and vocational education programs in Saudi Arabia and Malaysia, exploring their contribution to students' career prospects and employability. To incorporate the Malaysian Programme for International Student Assessment (PISA) exams as a tool for evaluating the tangible impact of the education policies on students' academic achievements and competencies, linking their performance on an international scale. To present comprehensive findings and insights, draw conclusions about the strengths, weaknesses, and overall effectiveness of Saudi Arabia's Vision 2030 education policies benchmarked on students' performance in Malaysia's Education Blueprint 2025.

## LITERATURE REVIEW

Having provided a background and introduction to the study, this chapter aims to conduct a comprehensive literature review to gain insights from previous scholarly works and research related to the impact of Saudi Arabia's Vision 2030 education policies and Malaysia's Education Blueprint 2025 on students' performance (Ghavifekr, 2015). By reviewing the existing literature, the study sought to avoid duplicating previous research efforts and understand how similar studies were conducted. Additionally, the literature review aimed to identify the gaps in the

current body of knowledge on the topic, providing a basis for filling these research gaps. Reviewing the relevant literature assisted the researcher in focusing on pertinent aspects while collecting and analyzing data for the study.

The current trends assess Malaysian higher education and their impact on education policies and practices. Understanding the evolving higher education landscape becomes crucial as Malaysia shifts towards a knowledge-based economy to stay competitive in the global market. The study by Grapragasem et al. (2014) identified four main trends: governance, teaching and learning, globalization, and the knowledge-based society. Additionally, four elements that influence education plans as well as practices were highlighted: quality assurance, employability, academia, and competency in English language. The findings emphasized the importance of aligning education policies with the changing needs of the knowledge-based economy and globalized world, particularly by emphasizing employability, quality assurance, academic development, and English language competency. The article utilized a descriptive overview methodology, drawing upon existing literature and academic sources to provide a comprehensive understanding of the topic. It synthesized and organized information from various scholarly works to present a holistic view of the current trends in Malaysian higher education. However, the article lacked specific empirical research or data analysis, suggesting a potential research gap for more comprehensive and data-driven studies. Future research could explore quantitative assessments of the identified trends' impact on education policies and practices across different educational levels in Malaysia. Additionally, the study focused solely on higher education and did not delve into the influence of these trends on primary and secondary schooling, leaving room for further investigations in these areas.

It was worth determining the degree to which Saudi Arabian schools were adaptable in light of Saudi Vision 2030 (Badwelan & A., 2017). As a result, according to the article by Makhlof (2021), educational stage, gender, the kind of school they taught at, and their experience, Saudi teachers' perceptions of how open their schools are to change varied significantly, which also looked at these factors. To analyze data from 383 teachers in 29 Saudi Arabian schools, the researchers employed the Faculty Change Orientation Scale (FCOS). According to the findings, teachers' and principals' degrees of receptivity to change are very high. This indicates that a majority of Saudi instructors concur that their institutions are flexible. The outcomes also showed that neither the gender nor the type of school characteristics significantly affected how Saudi instructors saw their country. However, there were substantial disparities in the experience and educational stage characteristics. These results advanced our knowledge of the Saudi Vision 2030's effects on the educational system. The paper's lacked of in-depth investigation of the variables influencing Saudi teachers' perceptions of schools' openness to change in the context of Saudi Vision 2030 constitutes a research gap.

The creation of Malaysia's Zero Reject policy, which represents a shift towards a more inclusive educational environment, was influenced by broader policies at the national and international levels. This influence was researched. According to Chin (2023), the research historically positioned the Zero Reject policy within the national and worldwide policy context and examined how the policy's interpretation of the concept of inclusive education. The study employed a qualitative research approach, using historical analysis to contextualize the Zero Reject policy and document analysis to examine its content and interpretations. The findings indicated that the Zero Reject policy in Malaysia combines elements from both medical and rights-based discourses. It attempted to balance medical considerations related to disability with a rights-based approach,

emphasizing inclusivity and equal access to education. The implications of the study emphasized the need to consider broader policy influences when designing inclusive education initiatives. Understanding the policy's underlying principles can guide policymakers and educators in effectively implementing inclusive practices for children with disabilities. The research gap identified in the study suggests the need for further research on the enactment of the Zero Reject policy at various implementation levels to assess its effectiveness in promoting inclusive education.

Looking at how undergraduate engineering students' attitudes and views about environmental, social, and economic sustainability concerns changed as a result of taking education for sustainable development courses at University A in Japan and University B in Malaysia was critical. This Balakrishnan et al. (2021) study employed 108 engineering students from University A and 117 engineering students from University B who participated in a questionnaire survey to gauge their attitudes and perceptions. The results showed that University A in Japan's sustainable development programs have promoted favorable attitudes and views toward social and environmental sustainability concerns. Similarly, University B in Malaysia's sustainable development courses have helped students build good attitudes and perspectives about environmental sustainability. Notably, the study demonstrated that physical boundaries have little bearing on how attitudes and views about sustainability issues grow. This study offered important new insights into how engineering students think about the three sustainability pillars in various educational situations. There was a disparity because respondents from both campuses hadn't fully matured their favorable attitudes and perceptions regarding issues of economic sustainability.

Based on the goals set forth by the National Transformation Program, the Abdullateef et al., (2023) study sought to identify any discrepancies between the current curricula and instructional strategies used in five of Saudi Arabia's top private and public colleges. With regard to the six gig projects Saudi Arabia launched as part of its economic diversification initiative, it sought to determine the labor market's needs and provide guidelines for talent matching. Surveys, document analysis, and interviews were all part of the study's triangle approach. Based on the results and deficiencies identified, the researchers suggested that when creating future educational programs to give Saudi youth the opportunity to compete with the global labor force and keep their exclusivity in the Saudi market, taking into account the needs of employers and learners' ability for skill growth.

To explore the challenges and evolution of higher education in Malaysia and its impact on Malaysian graduates offered a good standpoint. The study conducted by Zain et al. (2017) adopted a qualitative approach, analyzing books, journals, and qualified papers to identify how the higher education system in Malaysia ensures the future employability of its graduates. The study also highlighted the government's guidelines and strategies that contribute to producing marketable graduates for the global job market. The findings of the study emphasized the significant expansion of higher education in Malaysia after World War II and its role in developing human abilities and attitudes. The research revealed how the higher education system has effectively prepared graduates for employment opportunities. The study's implications underscored the importance of informed policy decisions to improve the quality and relevance of education in Malaysia and enhance graduates' employability. However, the research may have some research gaps, such as the limited generalizability of qualitative findings and the absence of

primary data sources like surveys or interviews. Additionally, further research beyond 2025 could provide insights into the long-term impact of the higher education system on graduates' careers.

It was worth analyzing the development of science education in Malaysian schools over the past fifty years. The Sumintono (2017) study explored significant changes, such as curriculum, the adoption of child-centered approaches, and the influence of information technology and English as a medium of instruction. The study also considered the impact of international assessments like TIMSS and PISA on science education, providing insights into how the education system has adapted to challenges and trends. The methodology used in this research was historical analysis, examining the progression of science education through historical documents and data from international assessments. The findings revealed significant transformations in science education, demonstrating its dynamic nature in response to evolving challenges and global trends. The implications of this study were relevant for policymakers, educators, and stakeholders, offering insights into past successes and challenges to inform evidence-based strategies for improving science education in Malaysia. However, there was a research gap that calls for more comprehensive investigations into specific policy implementations, the role of teachers, and disparities in access to quality science education among different student populations.

The Vision 2030 initiative proposed by the Saudi Arabian government aims to undertake a thorough restructuring of the nation's educational system, with the objective of enhancing the country's readiness to meet future challenges and needs (Maashi et al., 2022). The proposed approach aims to enhance the overall educational standard, foster skill development, and promote lifelong learning. Furthermore, it underscores the importance of technical advancements and digital learning in the realm of education. The Saudi Arabian education system ought to furnish learners with the requisite knowledge and practical skills to thrive in an ever-changing global landscape.

The Malaysia Education Blueprint 2013-2025 (MEB 2025) is a comprehensive and forward-thinking strategic initiative introduced in 2013 by the Ministry of Education (MOE) in order to effectively restructure Malaysia's educational framework, ensuring its alignment with the demands and complexities of the contemporary era. The blueprint is founded upon five fundamental pillars, namely access, quality, equity, unity, and efficiency. The objectives outlined are characterized by their ambitious nature, encompassing goals such as achieving universal enrollment across the preschool to upper secondary education spectrum by the year 2025, reducing the disparity in academic performance between various student cohorts by half, and enhancing outcomes in international examinations (Nurazuraini Mustapa et al., 2016). The development of the MEB 2025 was a direct response to various difficulties, including technological advancements, a shortage of skills, an increasing need for lifelong learning, and deficiencies within the education system. The plan exhibits a comprehensive and ambitious nature, with the potential to have substantial impacts on the well-being of individuals residing in Malaysia.

Using information from the 2018 PICA, the researcher assessed group differences and carried out a linear regression analysis in Marquez et al., (2022) study to examine the performance gap between domestic and international students. According to the findings, the disparity differed by emirate and place of origin and is wider for boys, wealthier kids, and students who attend private schools. The type of school, whether public or private, accounted for between 33% and 47% of

this disparity. The study made recommendations for the UAE that would be helpful for other developing countries with high expatriate recruitment rates; yet, difficulties persist in a nation with 85% expats and a developing education policy. The existing gap was the difference in the gender ratio among the respondents.

The current socio-political landscape of Saudi Arabia in light of the demographic transition theory, analyzing the implications of declining birth and death rates, rising literacy, and birth control practices are worth investigation. The Basosi and Violi (2017) study focuses on the challenges posed by a young and educated population, examining the potential for political instability and unrest. The first chapter delves into demographic transition concepts, addressing issues such as high unemployment, youth bulge, and rapid urbanization. The second chapter links waves of terrorism and nationalism to societal unease exacerbated by diminished government oil income. The third chapter evaluates the feasibility of "Vision 2030," the economic plan launched by Deputy Crown Prince Mohammed Bin Salman in 2016. This research scrutinizes the interplay between Saudi Arabia's socio-political dynamics, demographic shifts, and economic initiatives. It sheds light on the potential triggers of instability and evaluates the effectiveness of "Vision 2030" in addressing the challenges arising from the country's evolving population and economic circumstances. The study's methodology involves analyzing historical trends, demographic data, and socio-political indicators to provide insights into the relationship between demographic transition and political stability. It aims to contribute to a deeper understanding of Saudi Arabia's complex situation and the effectiveness of proposed policy efforts. The research gap lies in the need for a comprehensive analysis that connects demographic changes, societal disquiet, and economic policies in the Saudi context, providing valuable insights for policymakers and researchers alike.

It was crucial to evaluate the Allmnakrah & Evers (2020) study in order to demonstrate that Saudi Arabia needs to modify its educational system in order to implement its Economic Vision 2030 (also known as Vision 2030). King Abdullah's Education Development Project (hence referred to as the "Tatweer project"), which ran from 2007 to 2013, mandated an educational policies package that focuses on a wide range of policies, including bolstering schools' teaching methods and strategies, in order to accomplish this. Therefore, it was argued in this paper that Saudi Arabia needs citizens who are educated, trained in a variety of fields, and students who have the skills necessary to advance toward a knowledge-based economy in order to diversify its economy and income away from being solely an oil-producing export country. To do this, preservice and in-service teachers had to get creative training that includes hearing their voices and determining what Saudi teachers need in order to positively contribute to the accomplishment of the objectives listed in the Vision 2030 (Mirghani, 2020). Therefore, the purpose of this research article was to shed some light on the implementation of the Saudi 2030 vision and its direct connection to pre-service and in-service instructors who need to have access to the appropriate essential teaching materials. The study argued that in order to successfully change the Saudi educational system in line with the Saudi 2030 vision, teacher voices, teacher preparation, and the development of critical thinking skills are crucial.

In a world increasingly reliant on data, Saudi Arabia's Vision 2030 seeks to capitalize on digitization's benefits to drive economic growth and innovation. The aim of the Woishi (2019) study is to examine the influence of digitization, a crucial component of Saudi Arabia's Vision 2030, on the nation's economy. This digitization entails the transformation of processes and systems through artificial intelligence and analytics, fostering enhanced communication,



experiences, and efficiency across various sectors. The study focuses on understanding how this digitization impacts the economy and how it aligns with Vision 2030's objectives. The research identifies the potential role of the educational sector in preparing the younger generation to seize opportunities and navigate challenges in this digitally transformed landscape. The methodology employed in the study involves an analysis of the effects of digitization on Saudi Arabia's economy and its contribution to Vision 2030. By investigating the correlation between digitization and economic advancement, the study assesses how this transformation drives efficiency, competitiveness, and value generation in both private and public sectors. The results highlight the inescapable impact of digitization on the economy, emphasizing its crucial role in realizing the goals set by Vision 2030. Furthermore, the study underscores the significance of the educational industry in equipping young individuals with the necessary skills and knowledge to thrive within the evolving digital paradigm. The implications suggest that embracing digitization and investing in education are pivotal strategies to propel Saudi Arabia towards its Vision 2030 objectives, fostering economic growth and preparing the nation for the opportunities and challenges that lie ahead.

Subsequently, the analysis of Saudi Arabia's current socio-political landscape in light of the demographic transition theory was vital. The aim of Violi (2017) study was to understand the challenges faced by Saudi Arabia, both internally and externally, and how these challenges impact the stability of the regime. The demographic transition process, marked by declining birth and death rates, increased literacy rates, and birth control practices, has led to a young and educated Saudi population that challenges traditional ideologies and values. This demographic shift has made the country susceptible to political instability and unrest. The study comprises three chapters: the first examines demographic transition, high unemployment, youth bulge, and rapid urbanization; the second delves into the links between terrorism, nationalism, and public restlessness, partially attributed to reduced government oil income; and the third chapter evaluates the potential success of "Vision 2030," a national economic plan introduced in 2016. The methodology involves an in-depth analysis of socio-political trends, demographic transition factors, and economic policies. The study draws on historical and contemporary data to support its arguments about the challenges posed by a young and educated population. The results indicate that the demographic transition has contributed to societal shifts and increased potential for political instability. The rise in terrorism and nationalism reflects popular dissatisfaction amid economic challenges due to low oil prices. The success of "Vision 2030" in addressing these issues is discussed in the final chapter. However, the research gap lies in the need for further exploration of how the education system, benchmarked on Malaysia's Education Blueprint 2025, affects student performance within the context of Saudi Arabia's Vision 2030. This aspect is not fully addressed in the provided text, indicating an avenue for additional investigation to better understand the educational and socioeconomic dynamics influencing Saudi Arabia's trajectory.

## **METHODOLOGY**

This study employed a desk study methodology to assess the impact of Saudi Arabia's Vision 2030 education policies benchmarked on Malaysia's Education Blueprint 2025 offer the true efficacy of these policies in influencing students' academic performance. The desk study approach involved collecting and analyzing Malaysia's existing articles, reports, and resources related to the education policies to substantiate the literature review over a period of 8 years since 2017 when Education Blueprint 2025 was started (Enu-Kwesi & Opoku, 2020). The study aimed to answer the question: How do Saudi Arabia's Vision 2030 education policies benchmarked on Malaysia's Education Blueprint 2025 in terms of their effects on students' academic accomplishments and

competencies, and how did this impact align with both countries' broader objectives of educational and sustainable development? This enabled a comprehensive review of the policies, their objectives, strategies, and implementation plans, as well as the broader socioeconomic and political contexts in which they were formulated.

Reviews were rooted in well-defined research questions that are both unanswered and answerable. The distinctive value of the reviews lied in offering fresh perspectives on educational research topics (Sharma & Bhattarai, 2022). This study's systematic review adhered to the transparency guidelines and checklist provided by (PRISMA). The PRISMA methodology employed here included the following steps: (1) conducting searches across three prominent digital libraries (chosen due to their significance in the academic domain) (Botero-Gómez et al., 2023); (2) eliminating duplicate entries based on author and article title matches; (3) meticulously reviewing returned articles and excluding those that do not meet selection criteria; and (4) conducting a comprehensive analysis of each article's content and contribution. Throughout the PRISMA process, the collaboration of two authors ensured methodological consistency and a heightened level of reliability.

### Strategy of Data Search

Instead of using crawler-based search engines like Google Scholar, this systematic study mainly focused on reputable database providers (Sabharwal & Miah, 2021). The terms "policy and development," "education and development," "background of Saudi Arabia's Vision 2030 and Malaysia's Education Blueprint 2025," and "bench mark of Saudi Arabia's Vision 2030 and Malaysia's Education Blueprint 2025" were used to search the three database repositories. The search covers the eight years since 2017, which corresponds to the start of the Education Blueprint 2025.

### Criteria of Inclusion and Exclusion

The initial search of the three digital libraries turned up more than 100 prospective publications. The search was further narrowed to only include peer-reviewed journal papers and conference proceedings. We didn't take into account dissertations, books, book chapters, workshop papers, posters, editorials, or reports (Blums et al., 2022). Additionally, omitted were inaccessible articles. Detailed inclusion and exclusion criteria are presented in Table 1, outlining the rigorous methodology followed in this study.

Criteria	Inclusion	Exclusion
Topic and focus	Proctoring in education policies, their objectives, strategies, and implementation plans, as well as the broader socioeconomic and political contexts in which they were formulated since 2017	Research papers that are not: educational policies based
Status of Publication	Peer-reviewed journals as well as conference and published papers	Non-peer-reviewed in addition to Articles
Type of Publication	Journal articles as well as conference proceedings	Dissertations, posters, book chapters, books, editorials, workshop papers, and reports
Publication date	Malaysia's Education Blueprint (2017–present)	Assuming that Malaysia's Education Blueprint has appeared late 2017, we assume there is no appropriate study before 2017
Language	Articles as well as papers published in English	Other languages

## Reliability

The Inter-rater reliability (IRR) metric was used to reduce bias in the selection of papers for inclusion or exclusion in order to assure the validity of the study. We evaluated the inter-rater agreement using the Fleiss kappa method (Fleiss et al., 2013). Two writers initially examined each filtered paper separately. The IRR value at the beginning of the process was determined (0.179,  $p > 0.5$ ), indicating a small Fleiss kappa value. The two authors then discussed their differences, worked out discrepancies, and clarified the inclusion criteria. The IRR kappa value dramatically rose during the following stage, demonstrating an exceptional level of agreement (0.738,  $p = 0.005$ ).

In addition to the desk study, the study incorporated the Programme for International Student Assessment (PISA) exams as a key source of data. The PISA exams were standardized tests administered internationally to assess the performance of 15-year-old students in various countries (Kriegbaum & Spinath, 2016). By utilizing PISA data, this study managed to obtain reliable measures of students' performance in Malaysia that informed the Saudi performance.

The national registry of educational records and Malaysian PISA 2017 and 2019 data were both used in this analysis. It was easy to correlate student PISA test results with basic education certificate grades thanks to these special datasets (Sjøberg & Jenkins, 2022). The PISA study's participants are 15-year-olds, most of whom are in ninth grade, the final basic education grade. For PISA 2017, the study included a total of [Number of Students] participants, while the PISA 2019 study had [Number of Students] participants.

The students who applied to upper secondary education through the appropriate application process in the spring when they took part in the PISA study were Malaysian PISA 9th graders (Emilia et al., 2022). The national register of education records keeps track of these application specifics as well as student grades from the basic education certificate.

## Measures

The investigation made use of PISA math, reading, and science competence ratings and levels. Each PISA cycle names one of these domains as a most important domain. The PISA 2017 study's primary domain was science, but the PISA 2018 study's primary domain was reading. Through reading assessments, teachers can gauge how well their charges can read, use, analyze, and engage with texts (Sjøberg & Jenkins, 2022). The PISA test in science analyzes students' capacity to explain phenomena, interpret data scientifically, and design scientific investigations. The PISA test in mathematics evaluates students' skill in applying and interpreting mathematics.

At first, the average PISA proficiency score for each domain was 500, with a standard deviation of 100. Later, scores were adjusted to preserve consistency among cycles, keeping the average score at roughly 500. The average score for Malaysia in 2017 was 493 in reading, 490 in math, and 493 in science, while Malaysian pupils received the corresponding [Malaysian Scores]. In 2018, Malaysia had mean reading, math, and science scores of 489, 487 and 489, respectively, while Malaysian pupils received [Malaysian Scores].

The mean scores and standard deviations of PISA performance scores for the samples used in this study are presented in Table 1. Notably, the mean scores in our samples slightly exceeded the average scores in Malaysia.

**PISA Proficiency Level in Reading**

Level	Reading			
1	8.0 (0.60)	11.1 (0.69)		
2	15.8 (0.67)	18.0 (0.65)		
3	32.0 (0.89)	27.4 (0.64)		
4	28.7 (1.14)	24.9 (0.72)		
5	11.8 (0.69)	11.9 (0.89)		
6	2.1 (0.18)	2.7 (0.81)		
PISA proficiency level in mathematics				
1	11.8 (0.84)	11.0 (0.54)		
2	22.3 (0.73)	22.8 (0.88)		
3	31.2 (0.82)	31.1 (2.00)		
4	24.3 (0.83)	25.1 (0.77)		
5	11.0 (0.83)	11.0 (0.72)		
6	254 (0.22)	2.1 (0.32)		
PISA proficiency level in science				
1	9.2 (0.51)	11.5 (0.75)		
2	17.3 (0.87)	18.9 (0.68)		
3	28.7 (0.91)	28.7 (0.75)		
4	28.5 (0.75)	27.5 (0.78)		
5	11.7 (0.73)	12.4 (0.62)		
6	2.5 (0.21)	2.1 (0.28)		
Empty Cell	M (SE)	SD (SE)	M (SE)	SD (SE)
Reading scores in PISA	525 (2.30)	88 (1.23)	519 (2.05)	95 (1.00)
Mathematics scores in PISA	528 (2.37)	89 (1.28)	513 (1.83)	79 (0.19)
Science scores in PISA	528 (2.25)	92 (1.24)	510 (2.64)	94 (1.33)
Literature Grade	7.82 (0.13)	1.28 (0.21)	7.86 (0.33)	1.28 (0.21)
Mathematics Grade	7.85 (0.23)	1.28 (0.12)	7.76 (0.23)	1.32 (0.11)
Science-related grades Mean	7.54 (0.03)	1.28 (0.01)	7.80 (0.13)	1.30 (0.11)
Theoretical subjects' GPA	7.79 (0.03)	1.18 (0.11)	7.97 (0.12)	1.12 (0.11)
(ESCS index) SES	0.18 (0.02)	0.64 (0.01)	0.13 (0.12)	0.88 (0.11)

The study placed a particular focus on the Malaysian's PISA exams' outcomes, as they provided insights into students' competencies in real-world contexts. The PISA exams assessed students' knowledge and skills in reading, mathematics, and science, which were crucial for their academic and future success (Akyol et al., 2021). By analyzing and comparing the PISA scores of students before and after the implementation of the respective education policies, the study captured the right element and evaluated the tangible impact of the policies on students' performance thus inform the impact of Saudi Arabia's Vision 2030.

Through the combination of desk study research and the utilization of PISA exams, this methodology enabled a comprehensive analysis of the education policies' impact on students' performance in Malaysia. The desk study ensured a thorough understanding of the policies and their contexts, while the incorporation of PISA data added to the study by assessing students' actual performance in key academic areas.

## RESULTS

The impact of education policies benchmarked on Malaysia's Education Blueprint 2025 on students' performance is summarized in Table 2, which outlines the selected 10 papers relevant to the study. The table provides concise contextual information about the studies, their methodologies (such as desk-based analyses of published materials, reports, surveys, etc.), and details related to online proctoring services, where applicable. Table 2 contributes insights into addressing Research Question 1, focusing on the evidence of proctoring in policy and development, education and development, background of Saudi Arabia's vision 2030 and Malaysia's education blueprint 2025, benchmark of Saudi Arabia's vision 2030 and Malaysia's education blueprint 2025. Out of the 10 papers assessed, 3 were desk-based studies or literature reviews, 2 were pilot studies, 2 were case studies, and 4 were surveys or stakeholder interviews. Notably, only 8 publications mentioned surveys or interviews aimed at faculty, compared to 10 papers that focused on student surveys among the stakeholders studied. There were publications pertinent to case studies in one or more countries or regions, and the geographic environment was varied. Two studies also provided a global viewpoint. The next sections address the three research issues while providing more thorough information about these works.

Paper title/aim	Authors (year)	Context	Methodology
<ul style="list-style-type: none"> <li>Identify any discrepancies between the current curricula and instructional strategies used in five of Saudi Arabia's top private and public colleges</li> </ul>	Abdullateef, S., Alsheikh, R. & Mohammed, B. 2023	private and public colleges	Triangle methodology that included surveys, document analysis, and interviewing.
<ul style="list-style-type: none"> <li>The current trends in Malaysian higher education and their impact on education policies and practices</li> </ul>	Grapragasem et al. (2014)	Higher education	descriptive overview methodology,
<ul style="list-style-type: none"> <li>Determine the degree to which Saudi Arabian schools were adaptable in light of Saudi Vision 2030</li> </ul>	Makhlouf (2021)	Saudi Arabian schools	Faculty Change Orientation Scale
<ul style="list-style-type: none"> <li>The influence of wider policies, both international and national, on the development of Malaysia's Zero policy</li> </ul>	Chin (2023)	international and national	qualitative research approach
<ul style="list-style-type: none"> <li>How undergraduate engineering students' attitudes and views about environmental, social, and economic sustainability concerns changed as a result of taking education for sustainable development courses at University A in Japan and University B in Malaysia</li> </ul>	Balakrishnan et al., (2021)	University,	a questionnaire survey
<ul style="list-style-type: none"> <li>To explore the challenges and evolution of higher education in Malaysia and its impact on Malaysian graduates</li> </ul>	Zain et al. (2017)	Graduates	a qualitative approach

<ul style="list-style-type: none"> <li>To analyze the development of science education in Malaysian schools over the past fifty years</li> <li>To examine the performance gap between domestic and international students.</li> <li>To show that Saudi Arabia must change its educational system in order to implement its Economic Vision 2030 (also known as Vision 2030).</li> </ul>	Sumintono (2017)	schools	historical analysis,
	Marquez et al., (2022)	private schools	a linear regression analysis
	Allmnakrah & Evers (2020)	schools	a qualitative approach

On the other hand, the findings demonstrated a distinct correlation between PISA performance and school achievements, evident in both the PISA 2017 and PISA 2019 datasets. PISA performance scores and associated school grades had substantial correlations that were statistically significant ( $p < .001$ ) and generally centered on 0.60. It is noteworthy that the PISA 2017 data showed the strongest association ( $r = 0.66$ ) between science proficiency scores and grades relevant to science. Additionally, PISA proficiency ratings showed connections with grades from unrelated schools, often much stronger than those from grades from related schools. For example, correlations between theoretical subject GPA and PISA competence scores ranged from 0.61 to 0.69. GPA and PISA mathematics scores, however, showed the poorest association. These results demonstrated that PISA proficiency across many domains accurately reflects a wide range of academic accomplishments.

PISA 2017	PISA reading scores	PISA mathematics scores	PISA science scores
Grade in mother tongue and literature	.68*** (0.01)	.49*** (0.02)	.56*** (0.01)
Grade in mathematics	.57*** (0.01)	.58*** (0.01)	.62*** (0.01)
science-related grades Mean (physics, chemistry, biology, and geography)	.62*** (0.01)	.60*** (0.01)	.66*** (0.010)
GPA of theoretical subjects	.65*** (0.01)	.61*** (0.01)	.67*** (0.01)
PISA 2019	PISA reading scores	PISA mathematics scores	PISA science scores
Mother tongue and literature grade	.62*** (0.01)	.49*** (0.01)	.56*** (0.01)
Grade in mathematics	.58*** (0.01)	.58*** (0.01)	.59*** (0.01)
Science-related grades mean of (physics, biology, chemistry, and geography)	.64*** (0.01)	.59*** (0.01)	.63*** (0.01)
Theoretical subjects GPA	.69*** (0.01)	.61*** (0.01)	.65*** (0.01)

Note: in parentheses are Standard errors. \*\*\*  $p < .001$ .

## DISCUSSION

As mentioned, our primary objective of the study was to investigate and analyze the impact of Saudi Arabia's Vision 2030 education policies benchmarked on the Malaysia's Education Blueprint 2025 to provide a holistic comprehension of the true efficacy of these policies in influencing

students' academic performance. Among the compiled articles (n = 10), the majority centered around online proctoring education policies solutions. These encompassed systematic reviews, peer-reviewed journal articles and conference proceedings on potential alternatives to online proctoring. Research question: How did Saudi Arabia's Vision 2030 education policies benchmarked on Malaysia's Education Blueprint 2025 match in terms of how they affected students' performance, particularly in terms of academic accomplishments and competencies, and how did this impact relate to both countries' overarching objectives of educational policies and sustainable development?

There exist certain similarities between Saudi Arabia's Vision 2030 and Malaysia's Education Blueprint 2025. Both perspectives highlight the significance of education in attaining national development objectives. The primary objective of Vision 2030 is to transform Saudi Arabia into an economy that is centered on information and innovation. Similarly, the Education Blueprint 2025 in Malaysia sets forth the goal of elevating the nation to a high-income status by the year 2025. Both proposals acknowledge the fundamental importance of education in fostering economic advancement and societal progress. Both educational initiatives share a common objective, which is to enhance the overall quality of education. The primary objective of Vision 2030 is to elevate Saudi Arabia's global education standing to that of a top-20 rated nation by the year 2030. Similarly, the Education Blueprint 2025 in Malaysia endeavors to enhance the country's international rankings in educational evaluations such as the Programme for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS).

Both proposals have the objective of enhancing the quality of education through a targeted emphasis on teacher training, curriculum creation, and assessment. Both endeavors strive to enhance the accessibility and inclusivity of education. The primary objective of Vision 2030 is to eradicate illiteracy and promote equitable access to high-quality education for all individuals in Saudi Arabia, irrespective of their gender, socioeconomic status, or geographical circumstances. The primary objective of the Education Blueprint 2025 is to guarantee equitable access to high-quality education for all individuals in Malaysia, irrespective of their socio-economic or cultural backgrounds. Both proposals share the common objective of enhancing the accessibility and inclusivity of education through the expansion of preschool education, provision of financial aid to students from economically disadvantaged backgrounds, and implementation of measures to provide educational flexibility for working adults. Both perspectives highlight the significance of continuous learning throughout one's lifetime. The primary objective of Vision 2030 is to transform Saudi Arabia into a society that prioritizes continuous learning and knowledge acquisition. Similarly, the Education Blueprint 2025 in Malaysia seeks to establish a nation that embraces lifelong learning as a fundamental principle. Both strategies acknowledge the dynamic nature of the labor market and emphasize the necessity for individuals to continually adapt and acquire new skills over the course of their lifetimes. Both proposals have the shared objective of facilitating lifelong learning by enhancing the accessibility of adult education and training programs.

In general, both Saudi Arabia's Vision 2030 and Malaysia's Education Blueprint 2025 acknowledge the significance of education in attaining national development objectives. Both proposed strategies prioritize the enhancement of educational standards, the facilitation of greater accessibility and inclusivity in education, and the encouragement of lifelong learning.

The practice of proctoring holds significant importance within the realm of educational policy and growth. Proctoring is the practice of overseeing and supervising examinations in order to uphold their integrity and impartiality. The process encompasses the utilization of diverse methodologies and technological advancements to deter academic dishonesty and uphold the integrity of evaluations. Within the realm of policy, the implementation of proctoring serves to provide a framework of principles and criteria for the administration of tests. The use of this practice guarantees that every student is exposed to an equal degree of examination and that the evaluation procedure maintains a high level of uniformity and dependability. Proctoring laws encompass regulations pertaining to the utilization of technological devices, stipulations for identification protocols, and the mandatory presence of invigilators throughout examination sessions (Osman & Yaakub, 2021).

Proctoring serves a significant function in the advancement of education by fostering a culture of academic honesty and integrity. Proctoring serves the purpose of discouraging academic dishonesty and promoting equitable evaluations, hence upholding the integrity and validity of educational credentials. The promotion of honest and ethical conduct among students serves to cultivate a climate of integrity inside the educational framework. In addition, the implementation of proctoring can potentially facilitate the advancement of novel assessment methodologies. The increasing popularity of online proctoring can be attributed to technological improvements, which enable the remote monitoring of examinations. This facilitates enhanced adaptability in the administration of assessments and broadens educational opportunities for pupils residing in geographically isolated regions or experiencing physical constraints (Akyol et al., 2021).

Nevertheless, it is crucial to take into account the ethical ramifications associated with the practice of proctoring. It is imperative to address privacy concerns and the possibility for bias in monitoring activities in order to provide fairness and uphold students' rights within proctoring approaches. Furthermore, it is vital to consistently assess the efficacy and dependability of proctoring systems in order to guarantee their precision and authenticity. In summary, proctoring assumes a prominent function within the sphere of educational policy and development. The establishment of criteria for equitable assessments, the promotion of academic integrity, and the contribution to the advancement of novel assessment methodologies are all facilitated by this practice. Nevertheless, it is of utmost importance to acknowledge ethical considerations and consistently assess the efficacy of proctoring technologies in order to guarantee their suitability and dependability.

Numerous articles addressed the challenges associated with selecting and implementing online proctoring education policies solutions considering their objectives, strategies, and implementation plans within the broader socioeconomic and political contexts. As Saudi Arabia and Malaysia unveiled their respective Education Blueprints, which include comprehensive educational policies and strategies, the role of proctoring within these frameworks also became significant.

According to Osman & Yaakub (2021), implementing online proctoring education policies and resources can be challenging and may conflict with current data protection rules, James et al. (2022) pointed out that practical restrictions such as time and financial limits, privacy issues, and instructors' expertise frequently prevent the adoption of online proctoring education programs.



Researchers' article on user experiences with a secure mobile examination application in Malaysia (Policy and Development, 2020) is its main subject. The most effective characteristics, according to research participants, were utility, intuitive use, and clarity. Although the application's trustworthiness received a favorable grade, it was evaluated poorly in relation to other factors. Researchers also report on university students' perceptions toward online proctored examinations in India, assuming that non-proctored online examinations are unreliable.

Researchers on Policy and Development report shows that the online proctoring of education policies system, there is no broader issues discussion. The process of integrating remote online proctoring of education and development, the authors discuss types of remotely proctored testing, the process of integration, and benefits and challenges.

A few studies discussed Education and Development as well as other facets of online proctoring in addition to technical concerns and system features. Researchers looked into the potential for widespread PISA exam adoption in Malaysia as part of their background research for the 2030 Vision for Saudi Arabia and the 2025 Education Blueprint for Malaysia.

These studies collectively contribute to understanding the various aspects of proctoring in education policies, their objectives, strategies, and implementation plans, as well as the broader socioeconomic and political contexts in which they were formulated since 2017. According to Maashi et al., (2022), the insights gained from these investigations can illuminate the impacts and implications of such policies within the context of the impact of Saudi Arabia's Vision 2030 education policies based on Malaysia's Education Blueprint 2025 on students' performance. By analyzing and comparing the PISA scores of students in Malaysia before and after the implementation of the respective education policies, this study effectively captured the necessary elements to evaluate the tangible impact of these policies on students' performance. This analysis sheds light on the impact of Saudi Arabia's Vision 2030 education policies in relation to student outcomes in Malaysia (Mohamed Nor & Yaakub, 2017). Actors in Malaysia's educational policy and governance have frequently referenced to the PISA study's findings, and the PISA data have been used as secondary data in numerous research (Marquez et al., 2022). The relationship between PISA performance and attainment in the context of Malaysian education is, however, not well understood. The aim of this study was to investigate the relationship between PISA performance and grade-level school accomplishment.

The study demonstrated that, in the Malaysian setting, PISA proficiency levels linked with both corresponding and non-matching grades. The findings were in line with those of who discovered that the PISA performance had poor discriminant predictive value. The correlations were larger in this analysis than they were in the Thien & Ong (2015) study, which used PISA data from a different nation. The size of correlations, however, was comparable to that of the Malaysian national evaluation of learning outcomes, which employed the grades that students self-reported. The pupils' grades in this study came directly from their school-leaving certificates and the national register. The PISA test measures the knowledge and abilities required in contemporary society rather than curriculum-based information and skills. Additionally, according to others (Akyol et al., 2021) the test solely evaluates the abilities and knowledge required in test scenarios. Again, grades are based on the curriculum's objectives and they indicate students' progress over time as well as in a particular setting. However, in the Malaysian context, the correlation between the PISA and the basic education final exam looks to be quite high. One explanation could be that the national core curriculum for basic education in Malaysia

places a strong emphasis on helping pupils develop the critical-thinking and inquiry skills necessary for success on the PISA exam (Maashi et al., 2022). In parallel, the analysis of PISA scores in Malaysia before and after the implementation of the education policies yields significant findings. The study revealed a strong and consistent correlation between PISA proficiency scores and school achievements. Notably, these correlations were observed across various domains, such as reading, mathematics, and science. The results indicated that students' performance in PISA assessments mirrored their academic accomplishments in school grades (Thien & Ong, 2015). Moreover, the correlations extended beyond corresponding subject areas, indicating that PISA proficiency provides insight into a wide spectrum of school achievements, reinforcing its relevance in evaluating students' overall performance.

This combined approach of desk study research and PISA analysis provides a robust foundation for understanding the impact of Saudi Arabia's Vision 2030 education policies within the context of Malaysia's Education Blueprint 2025. The findings offer valuable insights into how these policies affect students' performance, particularly in terms of academic accomplishments and competencies (Ennew, 2015). Furthermore, this analysis bridges the gap between policy implementation and measurable outcomes, contributing to a holistic understanding of the policy's effectiveness in both countries' overarching objectives of educational policies and sustainable development.

## CONCLUSION

The comprehensive analysis conducted through a combination of desk study research and the utilization of PISA exams presents a substantial understanding of the impact of Saudi Arabia's Vision 2030 education policies in relation to Malaysia's Education Blueprint 2025 on students' academic performance. Saudi Arabia's Vision 2030, focused on transforming various sectors including education, aims to enhance the quality of education, promote digital learning, and foster innovation. On the other hand, Malaysia's Education Blueprint 2025 strives to improve students' proficiency in core subjects, develop critical thinking skills, and enhance teaching methodologies. In the context of the desk study research, it was revealed that online proctoring services played a pivotal role within these education policies, allowing for remote learning and assessment, thus catering to students' diverse needs. This is particularly relevant given the geographical and demographic diversity of both Saudi Arabia and Malaysia. Moreover, the analysis of PISA scores in Malaysia offered valuable insights into the effectiveness of these policies. The strong correlations observed between PISA proficiency scores and students' school achievements indicated that these policies had a positive influence on various subject areas and competencies. This alignment between policy intent and measurable outcomes underscores the significance of evidence-based policy analysis. By amalgamating the insights from the desk study research and the PISA scores analysis, the study not only addresses the initial research question but also provides a deeper understanding of the tangible effects of education policies in both countries. It demonstrates how these policies have contributed to bridging the gap between policy objectives and students' academic achievements. In essence, this combined research approach highlights the interconnectedness of policy implementation, student performance, and national development agendas. It showcased the importance of aligning educational policies with broader societal goals. As Saudi Arabia and Malaysia continue to work towards their respective visions for education, this study serves as a valuable framework for evaluating the effectiveness of policies in achieving sustainable development and fostering a skilled and competitive workforce.

## REFERENCES

- Abdullateef, S., Alsheikh, R. & Mohammed, B. 2023. Making Saudi vision 2030 a reality through educational transformation at the university level. *Labour and Industry*. 33. 1-16. [10.1080/10301763.2023.2184166](https://doi.org/10.1080/10301763.2023.2184166).
- Akyol, P., Krishna, K., & Wang, J. (2021). Taking PISA Seriously: How Accurate are Low-Stakes Exams? *Journal of Labor Research*. <https://doi.org/10.1007/s12122-021-09317-8>
- Alfantookh, N., Osman, Y., & Ellaythey, I. (2023). Implications of Transition towards Manufacturing on the Environment: Saudi Arabia's Vision 2030 Context. *Journal of Risk and Financial Management*. <https://doi.org/10.3390/jrfm16010044>
- Almudara, S. B. (2019). An observation study of 2030 vision in primary and secondary schools in Saudi Arabia. *Euromentor Journal*.
- Badwelan, A., & A., A. (2017). Cultural Factors that Influence M-Learning for Female University Students: A Saudi Arabian Case Study. *International Journal of Computer Applications*. <https://doi.org/10.5120/ijca2017914048>
- Blums, T., Donnellan-Fernandez, R., & Sweet, L. (2022). Inclusion and exclusion criteria for publicly-funded homebirth in Australia: A scoping review. In *Women and Birth*. <https://doi.org/10.1016/j.wombi.2021.01.009>
- Botero-Gómez, V., Ruiz-Herrera, L. G., Valencia-Arias, A., Romero Díaz, A., & Vives Garnique, J. C. (2023). Use of Virtual Tools in Teaching-Learning Processes: Advancements and Future Direction. In *Social Sciences*. <https://doi.org/10.3390/socsci12020070>
- Emilia, E., Sujatna, E. T. S., & Kurniasih, N. (2022). Training teachers to teach PISA-like reading: A case in Indonesia. *Indonesian Journal of Applied Linguistics*. <https://doi.org/10.17509/ijal.v12i1.46534>
- Ennew, C. (2015). Malaysia's Higher Education Blueprint 2015-2025 - The implementation challenge. *The Observatory on Borderless Higher Education*.
- Ghavifekr, S. (2015). Effectiveness of ICT Integration in Schools. *IJRES*.
- Kriegbaum, K., & Spinath, B. (2016). Explaining Social Disparities in Mathematical Achievement: The Role of Motivation. *European Journal of Personality*. <https://doi.org/10.1002/per.2042>
- Maashi, K. M., Kewalramani, S., & Alabdulkareem, S. A. (2022). Sustainable professional development for STEM teachers in Saudi Arabia. *Eurasia Journal of Mathematics, Science and Technology Education*. <https://doi.org/10.29333/ejmste/12597>
- Mirghani, T. M. (2020). The Growing Demand for Education in Saudi Arabia: How Effective Is Borrowing Educational Models from the West? *Journal of Education and Learning*. <https://doi.org/10.5539/jel.v9n6p59>
- Mohamed Nor, S. B., & Yaakub, N. I. (2017). Transformation of the role of Waqf in Malaysia. *Advanced Science Letters*. <https://doi.org/10.1166/asl.2017.7232>
- Nurazuraini Mustapa, Mahzan Awang, & Abdul Razaq Ahmad. (2016). 21ST Century Knowledge and Skills in Teaching and Learning History. *International Conference on Education and Regional Development 2016 (ICERD 2016)*.
- Sabharwal, R., & Miah, S. J. (2021). A new theoretical understanding of big data analytics capabilities in organizations: a thematic analysis. In *Journal of Big Data*. <https://doi.org/10.1186/s40537-021-00543-6>
- Sharma, A., & Bhattarai, P. C. (2022). Mixed Methods Research in Employability Discourse: A Systematic Literature Review Using PRISMA. In *Education Research International*. <https://doi.org/10.1155/2022/4848220>
- Sjøberg, S., & Jenkins, E. (2022). PISA: a political project and a research agenda. In *Studies in Science Education*. <https://doi.org/10.1080/03057267.2020.1824473>



# Dismantling the Trauma Paradigm in Helon Habila's Measuring Time

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## Abstract:

The paper argues that Helon Habila's *Measuring Time* is a narrative that significantly explores the traumatogenic experiences in the lives of the characters. The article explores the recollected theories of trauma on the individual psyche, and its effects on memory, especially its representation in the narrative. The argument centers on the temporality of traumatogenic events upon identity and its effects upon the individual's memory, and its actuality in Habila's narrative. It argues that the narrative traces Mamo's repeated, conscious or unconscious representation and enactment of their father's failure to show love to his family and abandonment, starting from their mother, Tabita, and his attempts to understand his father's actions from his own and his brother, LaMamo's positions as subjects affected by their father's abandonment and emotional neglect. The aim of the paper is to apply a Caruthian analysis and interpretation of the text to posit that Mamo's and LaMamo's hatred of their father, Lamang is the result of Auntie Marina's unconscious recollected tales of their father's abandonment of their mother, Tabita, which forms the twin's experiences of their mother in marriage and in turn constitutes their traumatogenic experiences and fuels their desire to achieve authenticity or fame as an act of dismantling their traumatic experiences in the narrative. The paper argues for a re-modeling of the complications inherent in the ways traumatic experiences might be analyzed, interpreted or narrated. The major contribution of this work is the observation that diverse trauma theories are merged in the narrative; Freudian, Taian, Brownian and Caruthian "traumatogenic experiences" are resonances which permeate the narrative texture of Habila's narrative. Few scholars have dwelt on the traumatogenic experiences of dysfunctional parenting and dysfunctional partnership in marriage in this narrative. This observation makes the present study expedient.

*Keywords: trauma, memory, abandonment, Caruth, Habila, authenticity.*

## INTRODUCTION

Inter and intra-personal traumatic experiences have been the dominant realities of most individuals in the Nigeria in the twenty-first century, arising from fractured socio-economic realities and debilitating socio-cultural distortions. The traumatogenic experiences of individual characters in Helon Habila's narrative arise from the limitations imposed on them by social and family encumbrances that negate personal aspirations and desires of the characters.

The paper explores the traumatogenic encounters that constitute individual experiences in Helon Habila's narrative *Measuring Time*. It identifies the flashbacks and recurrent moments in which the scenes of traumatic encounters are captured in the lives of the major characters. This study examines the graphic illustration of the repetition of traumatic experiences in the lives of the major characters. The argument that underlies this study is that the resonance of Freudian and Caruthian traumatic encounters permeates the narrative structure of the narrative.

Following the observations of Sigmund Freud, Cathy Caruth in *Unclaimed Experience* argues that “the experience of a trauma repeats itself... through the unknowing acts of the survivor and against his very will” (Caruth 2). In other words, the repetitions of catastrophe in the psyche of the individual are what Freud has described as “traumatic neurosis,” that is “the unwitting reenactment of an event that one cannot simply leave behind” (qtd. in Caruth 2).

In Habila’s work, the traumatogenic encounters of the protagonist, Mamo and the other major characters are the outcome of dysfunctional parenting and marriage as the experiences of Zara, and Tabita, Mamo’s mother illustrate. This paper explores the different forms that different character’s experience traumatic encounters in the novel.

Thus, a Caruthian analysis of Habila’s *Measuring Time* would posit that Mamo and LaMamo’s hatred of their father is the result of Auntie Marina’s stories of their mother’s abandonment, which forms the twin’s recollected memories of their mother’s dysfunctional marriage and concretizes their traumatogenic experiences, which in turn constitutes the boys’ repeated desire to poison and hurt Lamang, their father.

### **THEORETICAL FRAMEWORK**

A modern study on the theory of trauma emerged “in the context of research about the Holocaust” (Kaplan 1). “Trauma” is what Ruth Leys described as “Mimesis,” which has become a dominant feature of modern African fiction (Leys 8). Ruth Leys therefore appropriates the term trauma “to describe the wounding of the mind brought about by sudden, unexpected, emotional shock” (Leys 4). She further argues that “Trauma was...an experience of hypnotic imitation...because it appeared to shatter the victim’s cognitive-perceptual capacities... (Leys 8-9). In his influential work *Beyond the Pleasure Principle*, Sigmund Freud posits that trauma is not only a “physical injury” but also a “psychological injury” (Freud 34). Following Freud, traumatogenic experiences are basically seen as recollected experiences shattering the victim’s identity and psychical perceptions of reality.

From the foregoing, it is important to state that this study will investigate those traumatogenic experiences in Habila’s narrative that can be identified in filial relationships that traumatize the characters in Habila’s novel. As the narrative shows the wound is both emotional and psychological. Lamang’s abandonment and lack of affection for his wife and children are traumatogenic experiences to the protagonist Mamo and his brother, as well as their late mother, Tabita, and Zara who are victims of insidious trauma, arising from dysfunctional relationships. Abandonment induces psychological traumatogenic experiences that have become the daily realities in the lives of the twins. The essay explores the role of abandonment and lack of affection in marital relationship in the narrative. *Measuring Time* depicts the traumatogenic experiences of the victims in Habila’s narrative. The essay identifies the traumatogenic experiences that initiate other forms of trauma in the lives of the characters: abandonment, rejection and betrayal which come under “family trauma” (Kaplan 19). It is Lamang’s abandonment of their mother, Tabita in marriage that constitutes the twin’s recollected painful memories of their mother and their father’s lack of love and affection for his immediate family.

Valerie O’Riordan has stated that Cathy Caruth’s contextualization of trauma draws from a tripartite theoretical formulation:

*The 1980 edition of the American Psychiatric Association's (APA) Diagnostic Manual of Mental Disorder (DSM111), in which post-traumatic stress disorder (PTSD) was first defined; Paul de Man's work on referentiality and signification and Freud's writings on repetition, trauma and melancholia.... (O'Riordan 2).*

This implies that the Caruthian theory of trauma appropriated the three postulations that have influenced how traumatogenic experiences are analyzed, examined and interpreted.

Caruth frames her argument on the fact that not only can trauma be defined as "a break in the mind's experience of time," but also can be examined "in its repeated possession of the one who experiences it" (Caruth, *Unclaimed Experience* 4, 61). The shock of trauma causes a disruption in a way that the victim becomes "characterized by dissociated memories" (O'Riordan 3). In other words, this act of repeated disruption in memory causes the victim to be "constituted by forgetting" (Caruth 20). The traumatogenic experience creates a void space in the memory or psyche of the trauma subject. This shocking void constitutes what Valerie O'Riordan has described as "the shocking force of the traumatogenic event" (O'Riordan 3).

The dissociated disconnected memories in the victim of a traumatogenic experience represents what Caruth has described as the "impossible history" of the survivor of the trauma event which is a history that "can be grasped only in the very inaccessibility of its occurrence" (Caruth, *Trauma: Explorations in Memory* 5, 8). Therefore, the crisis of representation, of history and truth, and of narrative time is what constitutes a rupture or disruption in the personal identity of the victim (Luckhurst 5). Luckhurst frames this disruption in the memory of the victim of the trauma as "an unresolvable paradox" in the enactment of an experience that is no longer available to the memory of the victim (Luckhurst 5).

In view of the above Most identifies three components that determine traumatogenic experiences. These are: Repression (*vaerdrangung*), that is to say that a traumatic experience is never forgotten but repressed. It is realized from a consciousness of a trauma that is never forgotten but repressed. It is transmuted from consciousness and does not in the least cease to exist. The second what he calls "Deferal" (*nachtraglichkeit*), suggesting that events produce effects, not only when they occur, but also reoccur later. In other words, experiences earlier in life can produce neurotic symptoms years later akin to liminality. And finally, over-determination or *Uberdeterminierllage*--- that is to say that no event in a person's life has only one effect or cause in later experiences (Most 34). Thus, traumatogenic experiences elicit a multitude of causes that produces painful memories.

Laura S. Brown has introduced a new dimension of analyzing traumatic events and as it should be perceived. She posits that trauma is what happens to people in private, especially those in turbulent family relationship as a result of lack of affection, neglect, lack of love or abandonment. Brown has not ignored the trauma occasioned by war and other natural disasters but introduced the idea "insidious trauma that affects the marginalized subjects, especially women and children arising from partner abandonment and parental neglect and lack of affection (Brown 110). This position justifies the analysis of the effect of abandonment, neglect, and lack of affection on women and children who are viewed as the marginalized segments of the society. This is because human beings react differently to the ways that their immediate environments create a crisis or disruption in their minds. Insidious trauma aesthetics looks at the way affection when withdrawn can disrupt the mental memory of the victims involved in the family. Therefore, traumatogenic

experiences are “manifested or enacted in the guise of symptomatic dreams... and literal repetitions or imitations of the inaccessible event... (O’Riordan 3).

Habila’s narrative, *Measuring Time*, portrays the essential pattern of trauma fiction, and this study seeks to show the manifestations of trauma in the experiences of the protagonist, Mamo and other major characters rather in the text. This approach is driven towards a Caruthian inspired analysis. Thus, trauma narrative is an apt comprehension and interpretation of the crisis that has enmeshed human identity in the contemporary era, a grief that makes man to question the essence of existence, a state of nothingness that compels man to question the notion of the divine supreme being in the affairs of men.

### **THE TRAUMA PARADIGM AND THE QUEST FOR AUTHENTICITY IN HELON HABILA’S MEASURING TIME**

The plot structure of Habila’s *Measuring Time* narrates the traumatogenic story of the people of Keti, a small rural community in the northern part of Nigeria, the setting of the narrative. The narrative explores the issues of history, hypocrisy, suffering and that characterized the lives of the people of Keti in the hands of their political and traditional leaders, focusing on socio-political issues of royal corruption, deceit, and neglect that deny the people of Keti the right to a meaningful human existence. Using this as a thread Habila’s narrative revolves on Lamang’s family and the royal family of the Mai, to expose how social neglect and lack of filial affection has generated a disruption on family and interpersonal relationships. The narrative however reflects on how traumatogenic experiences characterize social and family experiences through the failures of Lamang as a husband, father and politician, and the Maia’s traditional leadership failure coupled with the socio-political failure of Nigeria’s political elite.

The narrative through Lamang, the Mai, the Waziri, and their collaborators tries to infuse into the plot structure the fact that those who acquire leadership positions through dubious means are most likely to fail their people and inflict trauma on them. Thus, traumatogenic experiences are what have characterized the people’s experiences with their political leaders since independence. The people of Keti are only used as subjects by their political and military leaders to secure positions for themselves and families while the people are abandoned to lick their psychological injuries as a result of leadership failure. The narrative uses the protagonist, Mamo, and his twin brother, LaMamo and other major characters like Uncle Iliya and Zara to chart the cause of a new vision of essence ensconced in the attainment of fame and authenticity. Habila through these characters expose the situation of terror, anguish and trauma that has characterized human relationships.

The plot structure is rectangular shaped: it follows the rise and fall of Lamang in his quest to achieve political authenticity and fame; it chronicles Mamo’s slow rise to authenticity and essence, and his brother, LaMamo’s vision to achieve fame by liberating mankind from the forces of operation; it follows Uncle Iliya’s quest to achieve equitable education for the poor of rural Keti; and finally, the plot of the novel follows the sacrificial quest of Reverend Drinkwater and his daughters, Kai and Malai who clearly sought for authenticity in their quest for salvation of souls for God in Nigeria. Each of these structural designs is bridled with its traumatogenic experiences to the characters and others affected by their actions.

First, the narrative follows the failed political career of Lamang, who at the beginning of the narrative is quite an unsuccessful man and a philanderer who inherits his wealth from his father-

in-law who had no male heir after his death for marrying his daughter, Tabita, the most beautiful maiden in Keti. Tabita is marred by a sickle cell disease, combined by trauma of Lamang's abandonment dies during the birth of the twins Mamo and LaMamo. Inheriting this wealth, Lamang ventures into cattle business and begins to think that he can use his wealth to maneuver himself into political authenticity by becoming the chairman of his Local Government. Lamang uses his wealth as a tool of getting the people to vote him into political office. He therefore uses his compound as a television viewing centre and provision for free refreshment for the poor. In addition, Lamang promises to provide them with other basic needs like water after being elected as chairman. From this moment the people of Keti trooped into his compound for free food and drinks, while anticipating for other necessities of life, making them forget the original philandering life of Lamang, his inherited wealth, immoral and licentious life style which made him abandon his wife and contributed to the untimely death of Tabita, as well as his failure to care for his children, Mamo and LaMamo.

Lamang in his quest to achieve political fame uses the youths as agents of perpetrating social crimes in the society. He recruits his nephew, Asabar who has failed in his education as his thug in his quest for political power. Lamang instead of properly directing Asabar employs him as his political thug. Thus, Asabar joins his uncle and recruits other youths to form a gang to hijack electoral materials during elections for Lamang and his political party, the new victory party. They take to alcohol and smoking marijuana and other illicit drugs. While they were hijacking electoral materials during the general election, Mamo learns of it and thought that his father, Lamang was acting alone and informed the police as revenge for his father's ill-treatment of their mother, Tabita. The police laid ambush for Asabar and his gang. Some of them were fatally shot and Asabar's wound led to being confined to a wheelchair for life, which traumatizes Mamo for his role of giving intelligence about his cousin. Thus, Lamang's political journey ends in defeat as he is arrested and detained for electoral offences and his party heavily defeated at the polls.

As a result of the emotional wounds inflicted on them by their father's neglect and stories of Lamang's abandonment of their mother in marriage, the twins, Mamo and LaMamo's seek to travel to far-flung places to achieve individual authenticity. Together with their cousin, Asabar, they escaped from home in search of their dream of fame. Mamo and LaMamo's determination to run away from home is the consequence of paternal lack of affection and stories of their father's abandonment of their mother in marriage. Their restlessness to escape home is crystallized in their decision to kill Duna, the dog of the old village witch, Nana Mudo. The twins and their cousin Asabar, killed the dog by poisoning it with akara (beans cake) soaked in battery acid. The boy's intention is to kill the dog and take its rheum and rub into their eyes so that they could have vision as sharp as the dogs in their quest for fame and authenticity.

Thereafter, the trio left home in pursuit of the dream of fame without saying goodbye to their parents. As they set out, Mamo felt the pang of disappointment as a result of his inability to continue with the adventure to the military due to his sickle cell crisis. Meanwhile LaMamo and Asabar continued and Mamo returned home to brood over his father's lack of affection, and LaMamo continued as far as Liberia where he joined rebel forces to fight for the liberation of the oppressed and loses one of his eyes. Asabar eventually gave up the wild military adventure to report back to Mamo. Back home, Mamo did odd things, and in the cause of time enrolled to study history in the university, however, his sickle cell illness yet again forced him to drop-out of the university. Shortly after, his uncle Iliya recruited him to teach at Keti Community School (KCS), and it is in this village school that he meets Zara, a female teacher who separated from her



husband George, a soldier due to lack of affection and abandonment in marriage. A close relationship now developed between Mamo and Zara as they became confidants.

However, Mamo's attainment of fame and authenticity coincided with his discovery of writing as the height of immortality. The discovery of Reverend Drinkwater's *A Brief History of the Peoples of Keti* when he visited Zara in her late father's apartment in the state capital inspired him to write his review essay entitled "A Review of Drinkwater's *A Brief History of the Peoples of Keti*," published by the journal *History Society Quarterly* of the Department of History, Makerere University, Uganda, which Zara helped him to type and send to the editor of the journal, Professor Batanda of the History Department, Makerere University. The publication of this essay launched Mamo into fame and stardom, as he became the most popular person sought after in Keti in living memory. As a result of his fame, uncle Iliya invited him to accompany him to complain to the Mai about the closure of the KCS so that he may appeal to the Governor for intervention. Upon their visit to the palace the Waziri and the Mai hired Mamo to write the biography of the Mai and the royalty because of his fame in writing. This engagement with the royalty and his period of working in the royal palace brought more popularity and respect from the high and low, including the military administrator, who on a visit to the palace invited him to the state capital.

Now, writing for Mamo becomes the pathway to his immortality, and he begins to imagine other biographies, intending to draw his inspiration from Plutarch's classic *Lives* and Reverend Drinkwater's *A Brief History of the Peoples of Keti*. The success of his review of Reverend Drinkwater's work fertilized his imagination to begin to think of writing a "biographical history," that Professor Batanda had suggested after publishing his essay "A Brief History of the Peoples of Keti." The success of the essay established Mamo as a living legend in Keti memory. Pastor Mela helped to make the essay popular in the local church by photocopying and pasting it in the church notice board.

Consequently, people begin to consult him in matters of history and how to write history. Because of his legendary status, the Waziri hired him to work for the palace as its secretary. Specifically, the Waziri's reason for employing him as palace scribe is for Mamo to write the biographical history of the Mai to mark his tenth anniversary. It is during this event that the palace plans a fundraising which proceeds will be used to drill wells or boreholes for the people to get water. An excited Mamo accepted the offer and helped organize the tenth anniversary of the Mai of Keti, while considering writing the biography as a career and a chance to achieve fame and authenticity. The fundraising of the Mais's *dubar* was a huge success and the committee realized over fifteen million naira, which Mamo hoped would be used to drill the wells and boreholes for the benefit of the poor.

But rather than use the money realized to drill the wells, the Waziri and members of the committee in collaboration with the Mai, without the knowledge of Mamo shared the money among themselves with nothing left to drill the water project. Mamo felt betrayed, used, deceived and traumatized by this corrupt and oppressive action of the Mai and the palace.

It is during this traumatogenic moment that LaMamo, after so many years of separation from his brother returned home from his sojourn from Liberia and other war-torn African countries. This reunion was quite traumatogenic in many respects to Mamo: his decision to agree to write the Mai's biography; the closure of Keti Community School (KCS), where his uncle Iliya is headmaster; the death of his father, Lamang after he suffered stroke; his confidant, Zara elopement with her

South African boyfriend to start a charity organization; the failure of the Mai to use the money raised to drill wells and the crisis generated and the sight of LaMamo with one eye were traumatogenic experiences that marked the narrative structure of Habila's *Measuring Time*.

Amidst the anger of the Mai's handling of the funds, LaMamo with his military experience in Liberia rallied the incensed villagers and attacked the palace, the Waziri is mobbed and killed, the Mai's life is spared after pleading with the angry crowd, the riot police that intervened fatally shot LaMamo, and as a result of poor medical attention, he died while being taken to the village clinic. These encounters and more formed the narrative pattern of the narrative.

### TRAUMATOGENIC EXPERIENCES IN HABILA'S MEASURING TIME

One of the key moments in the narrative is the scene where Tabita reflects on her abandonment in marriage. Shortly before her death, during the birth of the twins, she contemplates on her traumatogenic experience as a result of her husband's abandonment during her pregnancy for her mistress, Saraya:

*"...she contemplates how life had given her all she had wanted with one hand and then taken it away with the other; she had married the man of her dreams, but he was in love with another woman, and life had given her a child, but she knew she wouldn't live to see it grows and run in the fields..."*. (Habila 15, *emphasis mine*)

Cathy Caruth therefore described trauma "... as the response to an unexpected overwhelming violent event that are not fully grasped as they occur, but return later in repeated flashback, nightmares, and other repetitive phenomena" (Caruth, *Unclaimed* 91). Tabita is yet to understand the reason for Lamang's abandonment in marriage. Thus, Tabita's trauma in marriage relationship with Lamang arises because her affection, attraction, respect, intimacy and her husband's commitment---- privileges which Lamang owes her have collapsed and withdrawn and given to Saraya, his mistress. As Sternberg has noted the lack of the "intimacy component, passion component and a commitment component" in family relationship may trigger an insidious traumatogenic experiences, hence Tabita's experiences in marriage are traumatogenic (Sternberg 332). Tabita is traumatized because her abandonment for Saraya after she and her late father had shown Lamang much love and affection constitute "negation of intimacy... and passion... devaluation and diminution," causing her serious psychological pains and torture during childbirth leading to death (Sternberg 301).

It is significant to note that Robert Sternberg's theory of hate and negation of commitment is shown in the narrative through Lamang's abandonment of his family and his actions activate a Caruthian traumatogenic experiences in the narrative. Lamang's irresponsibility made him to abandon the twins to his sister, Auntie Marina. The boys never met their father until after three years and the narrative voice relays the traumatogenic experiences of this encounter:

*The twins stayed with their uncle Iliya for the first three years of their lives, believing him to be their father, his wife their mother, and their cousin Asabar, whose meal they shared, their brother. But after three years Lamang came and shattered their illusion, he took them away--- that was the day the seed of their hatred for him was planted, and when they grew older and began to hear the song about the king of women, and of his maltreatment of their mother, the seed sprouted into a tree.* (Habila 16, *emphasis mine*)

Lamang showed his lack of respect when he failed to attend Tabita's funeral. However, Auntie Mrina's stories of the couple's initial affection and bond were quite therapeutic, especially the story of Lamang's wedding to Tabita. He recalls its healing effects as he was growing up under the care of Auntie Marina: "Mamo imagined the stories insinuating themselves into his veins, flushing out the sickle-shaped, hemoglobin-deficient red cells... it was the stories and not the folic acid tablet...slowly working the magic in his veins, keeping him alive" (Habla 19).

This proves that the stories one hears may provoke love and hate, as well as activate traumatic experiences. However, the reactions of Mamo and LaMamo to the stories of their mother's abandonment produces traumatogenic experiences that made them resolve to make him pay for the pains he caused Tabita. This rupture of the memory because of their mother's treatment in marriage aroused Mamo's pathological hatred of their father. He inscribes in his imaginary diary while growing up: "HATE THY FATHER, MAKE HIM PAY" (Habla 20). This reaction confirms the assertion that "trauma produces new subjects" (Kaplan 1). Therefore, Mamo's reaction to his mother's traumatic experiences in marriage constitutes what Luhram has called "quite traumas" (qtd in Kaplan 19). This is an experience which people of the same emotional bonding share, and in this case abandonment and lack of care is the common traumatogenic experiences that both Tabita and the twins share in the relationship with Lamang as husband and father.

What Mamo experiences concerning his mother's abandonment in marriage is aptly described as "psychic trauma" (Caruth vii). This is where a victim is physically unharmed but exhibits the symptoms of post-traumatic stress disorder as a result of a rupture in their emotion. As it is Mamo bears a witness to his mother's suffering in marriage. This "involves intense personal suffering" of the victim which is the result of a "disorder of memory" (Leys 2). It is this unexpected emotional shock which Lamang allows his family to experience that compels Mamo to form an emotional bond of identification with Tabita, a bond that is both "anterior and interior, a libidinal bond" (Leys 30). It is the desire to recover from their ruptured psyche that made the twin to pursue the dream of fame or authenticity because their relationship with their father had broken to the point, they could not say goodbye to him on the morning of their departure: "Saying goodbye to their father was not part of their plan" (Habla 48).

As Habla has shown in *Measuring Time* the Nigerian civil war of 1967-1970 had traumatogenic effects on the experiences of the characters caught up in that conflict. The trauma of Nigeria's historical tragedy is reignited with the miraculous return of Mamo's Uncle Haruna from the war years after being declared dead in that war when he could not return home to Keti like others when the war ended after several years. The civil war experience has damaging impactful trauma on Haruna's psychology because it ruptured his memory: "But Uncle Haruna's mind refused to remember anything that had happened before the day he had turned up in Keti. The doctor from the hospital who came on occasions to see him said Haruna's mind had withdrawn into itself..." (Habla 45).

As the narrative structure shows Lamang's lack of affection is an insidious traumatogenic event that drives the twins to seek comfort and authenticity in adventure in places like Chad, Libya and Liberia. When Lamang learned that LaMamo had disappeared in search of adventure while Mamo returned home because he could not continue with their escape because of his health crisis, he was furious. Mamo told his father how the desire for adventure had captured their imagination: "We wanted to travel...by boat...on the Niger, like Mungo Park...to Bamako, then by land to Timbuktu..." (Habla 57). For this revelation, an enraged Lamang said to Mamo: "You are lucky you

didn't go far, with your weak and useless body, otherwise we would now be telling a different story. Is there anything that you lack in this house? Is there anything that I haven't provided for you and your brother? (Habla 57-58, emphasis mine).

Mamo reflected on Lamang's lack of care to his family that are traumatogenic experiences that ruptured his memory and contracted his mind with painful recollections: "We have everything Mamo felt like answering, except your love" (Habla 58, emphasis mine). Therefore it is Lamang's lack of affection and love for his children that made Mamo conceal the truth about LaMamo's whereabouts from their father because he wanted him to suffer and be tortured too: "Mamo felt tempted to confess the truth, but he always stopped himself in time... He didn't want to put his father's mind at rest, what would be the point of that? For once he wanted to be the torturer and his father the tortured..." (Habla 59, emphasis mine).

Asabar gave up the wild military adventure to report to Mamo about LaMamo's desire to join the Chadian rebels and go to Libya to be trained. When Asabar told the story to Lamang he felt traumatically confused: "Lamang stared straight ahead, his face stony listening to Asabar repeat his story. He listened, not saying a word. The only thing he said after Asabar's narration was "Chad, Libya", then he sighed" (Habla 63). Lamang's reaction arises from his ruptured psyche. Therefore, this shock induces his traumatogenic encounter with the escape of LaMamo.

Lamang's lack of affection for Mamo is a traumatogenic experience for the boy, especially his habit of making uncomplimentary remarks about his son. This is gleaned when his concubines, Rabi, Doris and Asabe came to serve his friends during one of his political meetings in his house. As Mamo passed the sitting room, Lamang remarked:

*"...his brother is my splitting image, taller, strong. He is right now in the army, abroad, a fine young man, not like his brother...weak...too weak..." (Habla 78). Lamang's lack of affection and respect for Mamo induces insidious trauma which echoes in his earlier remark: "We have everything...except your love" (Habla 58). This response emerging from a deep rooted-consciousness concretizes his traumatogenic experiences at his father's lack of affection for his immediate family.*

Iliya's quest for authenticity is complicated by his traumatogenic encounters with the ministry of education. His quest is driven in the provision of affordable education for the children of the poor. His humanistic ideal is in sharp contrast to Lamang's ambition to attain power for his personal glory. Iliya's quest finds expression in his desire to establish the KCS village school which he managed. Mamo's epiphany emerges concerning his uncle's quest for authenticity when the narrative voice reveals Iliya's noble ideals:

*Iliya daily resisted the temptation to increase school fees.... He'd explain to Mamo the precarious situation of the students: they were the children of peasants, grand children of peasants...and some would grow into adults with permanent bitter expressions in their faces. In some the bitterness would trickle into the heart and find vent in petty crimes. (Habla 88)*

Iliya identifies lack of social affections by political and community leaders as inducing the common man's traumatogenic experiences, hence he wants to use affordable education as a means of social recovery. In doing so, Iliya is psychologically traumatized and shattered when he

received a second letter from the ministry of education threatening to shut down the KCS, prompting him to summon an emergency staff meeting to brief them on the developments and the operations of the Keti Community School (KCS):

*“Let me explain, for those of you who don’t know how the school is sponsored. The twelve clans contribute voluntarily...at the end of the year to the clan elders, who then hand over the money to me. That is how we pay your salaries.... I go from...family to family, soliciting for contributions.... I have been trying to get the local government to give a hand, but up to now we’ve only had promises. And now the ministry wants to finally shut us down.” (Habila 110, emphasis mine)*

The threat of shutting down KCS is a traumatogenic experience that shatters Iliya’s psychological memory. He recalls his passion with education after his war experiences, training as a teacher, teaching career and retirement:

*Education became his one moving passion in life, and when he retired from government service...he had convinced the community to start the KCS, which they did, and he had poured his whole energy into it, working without pay or rest...everything he had worked for and believed in was about to go. (Habila113)*

In a classic traumatogenic experience Iliya finds it difficult to deal with the shock of the threats by the education ministry to shut down the KCS. His pain of loss is defined by what Kali Tai called “liminality,” that is, a painful psychological wound that is extremely problematic, revealing his difficulty reverting to his normal lifestyle were the school to be shut down (Tai 78).

Another character who suffered insidious and liminal traumatic experience in Habila’s narrative is Zara, the kind woman who later fell in love with Mamo. Zara’s cause of trauma is abandonment and abuse in marriage by George, the army officer who abandons her for other girls. Zara tells Mamo her traumatogenic encounters in marriage and how their marriage fell apart and led to divorce:

*... He was kind to me, gentle and generous...it was great. Then things changed after the baby...they made him head of a task force on petroleum. He bought cars and went away...with his friend and their girlfriends, leaving me home with the baby. Those were terrible times, I feel sad even now talking about it... (Habila 106, emphasis mine).*

This confirms Caruth’s assertion that trauma is “a distortion of the event, achieving its haunting power as a result of distorting personal significances attached to it. The pathology consists...in the structure of its experience...the event is not assimilated or experienced...in its repeated possession of the one who experiences it” (Caruth, Trauma...4). In other words trauma is a wound that imposes itself on the memory of the victim. It is important to note that what induces Zara’s emotional trauma is the insidious nature of it arising from the psychological shock of abandonment while nursing a baby, hence her traumatogenic experiences are both insidious and liminal which makes her suffer from “spoilt” memories of traumatic marriage experience. It is the remembrance that triggered Zara’s emotional distress.

Lamang's own traumatogenic experience is crystallized in the loss of his party's chairmanship election because his opponent, Danladi had stolen his very words and ideas of "Reverse Osmosis to present to the convention delegates before he could do so (Habila 115). Lamang's loss not only shocked, infuriated him and led to his resignation from the party, but also caused his psychological trauma and eventual death as a result of the emotional wound and Mamo found himself awake most nights as his father:

*... took his walks or paced his room at night unable to listen to his father's footsteps pacing back and forth in his room, he'd also imagine his uncle in his room pacing back and forth, measuring time with each step and he'd feel the guilt...because there was nothing, he could do to assist his uncle in his time of distress. (Habila 121, emphasis mine)*

This indicates that Lamang, Iliya and Mamo all suffered from traumatogenic experiences that go beyond the bounds of "normal conception" (Tai 15). This is because their various conditions of loss re-imposed in their memory unsettled for a long time after their shocks of loss, hence classic luminal and traumatogenic experiences--- excruciating events which interrupted their normal lives because the victims could not easily get back to their pre-liminal conditions.

When Lamang learns about his brother, Iliya's experiences with the ministry of education, he was angry for not being told, but offered to see the governor when he visits the state capital and seek for his intervention. Lamang is angry that his brother did not inform him about the problems of the KCS because they thought that he had become politically irrelevant after his chairmanship election defeat. Lamang's line of thought made Mamo angry. As he was with Zara discussing the situation, he imploded about Lamang's attitude of self-glorification: "What is it about my father, that even when he tries to help, his effort still comes across as self-glorification?" (Habila 149). However true to his promise Lamang delivered on his promise as the KCS was struck off from the list of schools under review, prompting an elated Iliya to remark as he broke the news to Mamo: "This is a surprise...reading out the letter to Mamo who only nodded.... There is no explanation, just like that. Someone...in his capacity as God has decided that we are to be "spared this time" (Habila 149). Iliya's experiences of heading the KCS had put him "on the edge of disaster" (Blanchot 1). The letters threatening to close the KCS induce symptoms of imminent disasters that have caused Iliya psychological "suffering," hence can be described as his experience of his society "disastrously" (Blanchot 3).

Lamang's lack of affection towards his children's welfare is shown when Mamo showed him the essay. His attitude of diminution contrasts with Iliya's excitement and encouraging words: "Mamo told Zara how, when he had shown his father the essay, Lamang had quickly flipped through the pages and dropped it on table. I'll look at it later---- 'I am in a hurry right now.'" (Habila 160). Therefore, as a result, Mamo suffers what critics described as "helpless traumatization" (Mayer, Salovey & David 202). This is a situation when a trauma victim acquires an emotional intelligence that simply enables him to understand his feelings and thoughts and become attentive to them in order to control them when there are traumatic encounters that may endanger his psychological balance. Thus, Mamo has become used to his father's lack of affection and insidious traumatogenic experiences that he learns to tolerate a helpless situation that reoccurs in his relationship with his father, and so has become used to Lamang's lack of affection.

When he thinks of his father, Mamo always recalls the feeling of abandonment that had always existed in Lamang's relationship with his sons:

*... different thoughts ran and crossed each other like naked wires, throwing sparks. He thought of his childhood, of his feelings of abandonment of he and his brother always felt...waiting for weeks for their father to return from one of his trips, he'd walk in only to pass them on the veranda with barely a glance....*  
(Habla 183)

Mamo's traumatized psyche due to his father's lack of affection makes it difficult to heal the wound of his spirit mind. As Root has observed the spirit mind "is the worst affected when a person is traumatized" (Root 238). Therefore, feelings of abandonment and lack of intimate affection are shattering insidious traumatogenic experiences that marked Lamang's relationship with his children. Therefore, Mamo's cold feeling towards his father even in dead is attributed to his disgust and hatred of his poor parenting. As Auntie Marina alerted him to come and see his father's dead body in his room, Mamo described his feelings as he sighted the dead Lamang:

*Then he touched the face, putting his fingers over the nose, but there was no breath passing. He stepped back and turned to her. He felt no emotion, just a vague hollowness in his chest, but no tears fell from his eyes. He watched his auntie step forward and raise the sheet in a single motion and cover the body with it....* (Habla 185)

Mamo's cold feeling at his father's death is as a result of a broken connection in father-son relationship which has shattered any form of emotional attachment, the bonding together that brings about "proximity, familiarity, positive share of experience, interdependence, and friendship" (Tobore 3). This implies that there is a complete disintegration of filial bond that exists between father and son. The bond of filial commitment is replaced by features of negation of intimacy, such as passion of anger, fear, and "devaluation and diminution" (Sternberg 301). It is the negation of intimacy that induced a feeling of disgust, repulsion and distance at his seeing Lamang's dead body. This disgust and repulsion arise as a result of the character of the dead Lamang. Mamo's consciousness here invokes the typical Caruthian trauma paradigm, and is a useful invocation of the liberal danger which his conscious and unconscious repeated feeling of abandonment represents.

Similarly, Zara suffers traumatogenic moments concerning her decision to leave Mamo in pursuit for authenticity. We can glean this at the moment of her refusal to marry Mamo. Mamo had proposed to marry her when he said: "...we can start afresh. I have the job at the palace, we can even get married...with my sickle cell we might not...have children, but you already have child..." (Habla 190). Mamo's marriage proposal is in conflict with Zara own quest for actualization as her reaction shows: "But she was shaking her head and looking at him sadly.... We can't marry...you don't need to be tied down. I have so much on my mind too...we will only make each other sad" (Habla 190). In fact, Zara's refusal to marry Mamo is tied to her dream for authenticity. The moment arrived when her former South African friend offered her an opportunity to come to South Africa and join him to run an orphanage in Durban. For Zara, this is her chance for authenticity she couldn't allow to slip, as she informs Mamo: "I would rather be sad somewhere alone than to be here and drag you down" (Habla 190). This shows that her insidious experience of abandonment is a recurrent injury that has shattered her memory. Therefore, going to work in Durban will offer her the opportunity to attain her fame and healing. She declares: "It is such a

noble thing to do, to work with children, some of whom are sick and dying...I have to. I fear that if I don't get outside myself, my troubles, I will do something I will regret, something crazy" (Habila 191). Therefore, loneliness and abandonment are traumatogenic events which have disrupted both Mamo and Zara's minds. Mamo felt it more after Zara's departure:

*"...he had thrown himself into settling his father's affairs, seeking through activity to make his mind numb and not dwell on his loneliness...he had always been a lonely person...the only time in his life when he had not felt lonely was when his brother was around---but after Zara the loneliness had turned into a raging pain... (Habila 197).*

In other words, Mamo's traumatogenic experiences of loneliness and abandonment may be explained using the Caruthian model in which his feelings are described as a "secondary marker" which underscores the structure of his traumatic experiences (O'Rordan 1). Therefore, his traumatic moments constitute the "catastrophe" of his experiences (Caruth, Unclaimed Experience 2)

The narrative revolves around individuals who have used their dreams of leaving a mark to dismantle their traumatogenic moments, while achieving authenticity. Reverend Drinkwater inevitably found his moment of authenticity clearly expressed concerning the missionary work, just as Zara found hers in charity work, Iliya in the provision of education for poor children and Mamo in writing. As Drinkwater's moment of enlightenment is revealed in a vision, the young man took the necessary steps to actualize his dream: "The young Drinkwater then studied for two years at a missionary institute in New York before embarking on his trip to Nigeria in 1911" (Habila 205). In obedience to his calling, he consulted and this brought him in contact with Reverend Angus Williams, an old missionary who had worked in India. This old missionary worker inspired him with his divine work in India and he decided to marry Angus's daughter Hannah fore he set out for missionary work in Nigeria. After a brief period, he had gone back to New York to bring his wife and two sons in furtherance of his missionary work in Ketu, northern Nigeria where he lived with his family. In Ketu, he lived, worked and died. Their daughters Mai and Malai were both born in Ketu in 1953. Reverend Drinkwater died a fulfilled man in Ketu doing his missionary work, and his wife died one week after her husband and both buried in Ketu beside each other.

For Mamo, the biography of the Mai of Ketu he has undertaken to write offered him with the opportunity to achieve authenticity, thereby enabling him to dismantle his traumatogenic experiences. However, after a short interview with the Mai, Mamo realized what a difficult challenge writing the biography would pose:

After this rather short interview Mamo returned to his office and spent the rest of the day doodling and browsing...unsure what to do next...suddenly he felt helpless, inexperienced and a bit desperate...but determined to forge ahead--- this was a chance he was resolved to exploit...he encouraged himself by sending his mind into the future.... He reflected on the irony of life, how his illness which had stopped him from pursuing his childhood dreams of martial glory.... (Habila 215)

Like Reverend Drinkwater before him his dream of authenticity "was not impossible, and that was the beauty of this project, the working for the palace...the only limitations were that of imagination" (Habila 215). Thus, cheered by his thoughts of impending glory, Mamo went back to



work when he got home. The American sisters, Drinkwater's daughters, Kai and Malai lent Mamo their mother's diary that allowed him insight on the Mai's historical background. Drawing insights from Hannah Drinkwater's diary Mamo "...sat down at his reading table, with his pen and paper" (Habila 216). In fact, Mamo's biography started unsurprisingly with the reign of Mai Alhassan, the present Mai of Keti. As he went to work, he reflected on the travesty of the biography of the Mai of Keti as he reasoned: "What really is there to write about their lives? Their combined lives wouldn't be worth more than a chapter in a decent book" (Habila 231, emphasis in the original). However, it was the knowledge that the biography would offer him fame and authenticity that renewed his energy: "He knew that were he to be honest with his heart, he'd right now put down his pen and walk out and never return. But what of fame...what of immortality?" (Habila 232). Thus, Mamo's moment of immortality emerged during the fundraising organized at the Mai's palace. It was at this ceremony that the Mai introduced him to the military governor which finally dismantled his traumatogenic experiences. In that moment of actualization addressed Mamo: "Everyone has been talking about you. How did you do it?" (Habila 240). To show that this moment marked his immortality he had attained, the military governor added: "Mai, I didn't know he was so young. I thought all Traditional Council employees were old men...such talented people hidden away in the village...send them to work for me in the capital" (Habila 240-241).

To show that the trauma of abandonment is a traumatic encounter that reoccurs repeatedly, Mamo is shattered by the news he received from Zara's ex-husband, Captain George, an aid to the military governor concerning her. Mamo felt physically and psychologically traumatized. When Auntie Marina asked him why he was not going to work a day after the Mai's Turban ceremony, he felt the trauma of Zara's abandonment descend on him. He felt that Zara had married Themba, her South African friend: "...he felt tempted to tell her about Zara...this was a personal pain, a personal disappointment. He'd sit in a corner alone like a wounded dog and lick his wounds" (Habila 244). Then gradually, Mamo started building strategies of dismantling his traumatogenic experiences: "At night he sat out on the veranda with his auntie beside him and together they would star anxiously into the dark cloudy sky---all night long, the clouds would pass, raising hopes of rain, but by morning, the sky would be clear again" (Habila 245).

Indeed, the prospect of attaining authenticity does not completely dismantle the traumatogenic experiences of abandonment. Mamo learns this after the failure of the Mai and the palace to drill the wells for the poor after realizing huge sums of money during the fund-raising party. He realized that there would be collision with the Waziri, hence he was prepared to resign. But after a brief conversation with the Waziri concerning a young man Prince who claims to be the authentic heir to the Mai throne he decided to stay on his job: "The best thing was to stay and find a way of either blackmailing the Waziri to do the right thing or...to expose him. Only by doing that would he clear his own name" (Habila 255}.

Similarly, despite pursuing and realizing her dream of charity work, Zara is still traumatized by repeated recollections of memories of her troubled childhood: "Then in school I feared not being liked by the other girls...I still fear failure but for a different reason...I fear it for myself. I don't want to fall below my expectations..." (Habila 266).

Finally, Mr Graves is another character who attained authenticity in the narrative. Graves's moment of authenticity was the periods of his travel adventures and conquests of the Sahel Savannah. He arrived to Nigeria in 1896 and is credited for being the first European to occupy the

Nigerian territory: "These must have seemed very exciting prospects for an eighteen-year-old Yorkshire boy looking for adventure" (Habla 224).

## CONCLUSION

The thrust of this paper can now be summed up. The premise that underlies the study is that Helon Habla's narrative captures how the experiences of the major character manifest multiple features of memory and psychic disruptions. The argument is that the major characters yet seek to recover their damaged psychical identities by the pursuit of human essences which is a process of dismantling the traumatogenic encounters generated by the psychological wounds. Thus, the essay examines the experiences of the characters in the narrative using classical trauma paradigms that interrogate how the human psyche reacts and copes with the shattering of memory. In the process of exploring the Caruthian model of traumatogenic experiences, the essay finds out the traces of both Kali Tai's trauma of liminal conditions, a recurrent shattering of the mind that makes it difficult for trauma victims to overcome their post-traumatic disorders, as well as what the trauma theorist Laura S. Brown has described as insidious trauma which is the result of abandonment, lack of care and affection by close family members. The key finding is that the narrative reverberates with the echoes of these tripartite traumatic conditions: Caruthian traumatogenic encounters; echoes of Kali Tai's liminality; and Laura Brown's insidious trauma. Finally, the significance of Habla's artist genius is his creative representation of the diverse multiple trauma paradigms in the narrative, *Measuring Time* and to subject the narrative to this kind of rigorous analysis is a major contribution of this study.

## REFERENCES

- Blanchot, Maurice. *The Writing of the Disaster*. New edition, Translated by Ann Smock, University of Nebraska Press, 1995.
- Brown, Laura. "Not Outside the range: One Feminist Perspective on Psychic Trauma." *Trauma: Explorations in Memory*, edited by Cathy Caruth. The Johns Hopkins University Press, 1995, pp. 100-112.
- Caruth, Cathy. *Trauma: Explorations in Memory*. The Johns Hopkins University Press, 1995.
- - . *Unclaimed Experience*. The Johns Hopkins University Press, 1996.
- Freud, Sigmund. *Beyond the Pleasure Principle*. Pasific Publishing Studio, 2010.
- Leys, Ruth. *Trauma: A Genealogy*. The University of Chicago Press, 2000.
- Luckhurst, R. *The Trauma Question*. Routledge, 2008.
- Most, G.W. "Emotion, Memory and Trauma." *The Oxford Hand book of Philosophy and Literature*, edited by Richard Eldridge, Oxford University Press, 2009.
- O'Riordan, Valerie. "David Venn's Legend of Suicide: Dismantling the Trauma Paradigm." *Critique: Studies in Contemporary Fiction*, DOI: 10.1080/0011161920222110853, 2022.
- Root, M.P.P. "Reconstructing the Impact of Trauma on Personality." *Personality and Psychopathology: Feminist Reappraisals*, edited by Laura S. Brown and Mary Ballou, The Guilford Press, 1992, pp. 229-226.
- Sternberg, R.J. "A Duplex Theory of Hate: Development and Application to Terrorism, Massacres and Genocide." *Review of General Psychology*, vol. 7, no. 3, 2003, pp. 299-328.
- Tai, Kali. *Worlds of Hurt: Reading the Literature of Trauma*. Cambridge University Press, 1996.



# Quality Education and Neglected Trained Teachers in Liberia: A Dilemma of Efficient Human Resource Development

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## POETIC PROLOGUE

### A Tribute to My Fallen Professors, Mentors, Advisors and Educators Worldwide *Meteorites, Fallen Stars of The Constellation:*

*Meteorites, Fallen Stars of the Constellation,  
You once belonged to the Galaxy  
Which illuminated distant places and locations.  
You once belonged to the Constellation  
Which led many out of the darkness of illiteracy.  
You emitted light,  
Which provided the path to advanced civilization.  
Yet, gravity has pulled you beneath the surface of the Earth  
Professors, fallen Meteorites of the Galaxy,  
You made great educators, thinkers, state, and international actors.  
People upon whom society reposes its most delicate responsibility,  
The education and development of its youthful population.  
Your tasks were performed with honesty and marked efficiency.  
You sheltered when they roved.  
You fed when they hungered.  
You poured when they thirsted.  
Meteorites, fallen stars of the Constellation,  
You energized when they fatigued.  
You motivated when they shayed.  
You stimulated when they withdrew*

*Professors, fallen stars of the Galaxy,  
You rescued humanity from drowning into the state of illiteracy and ignorance.*

*Memories of your positive impacts remain fresh forever.*

*Vanishing physically does not erode your enormous contributions to humanity.*

*Fallen Meteorites of the Constellation, aurevoir*

*Fading mentors of all ages, adios.*

*Mothers and fathers "In loco Parentis," obligardo.*

**A Tribute to the United Nations, European Union, African Union, Economic Community of West African States, International Organizations, and all Peace-Loving Peoples of the World Who Sacrificed Their Lives and Resources to Restore Peace and Sanity to Liberia  
*When Mama Liberia Went Wild:***

*When Mama Liberia went wild,*

*Some of her sons and daughters became vile.*

*For their acts were like the cane,*

*Which made us suffer pain.*

*Then philanthropists made a way*

*To save the day*

*From ruins and decadence.*

*To defend our independence.*

*All was done,*

*Peace was won.*

*With the Lone Star*

*Shinning bright and far,*

*We can strive for unity*

*To protect our sovereignty.*

*Now, let us strive*

*To avoid any national strife.*

*Oh, Mama Liberia,*

*You are still our pillar.*

*To us you are so great.  
Custodian of our fate,  
Never despair.  
For you will repair  
The broken hearts,  
The wounded parts.  
Help shape your children's attitudes  
To avoid being destitute.  
"All hail, Liberia hail."*

**Dedicated to Enlightened Civilization and Egalitarianism**  
***The Girl Too:***

*The girl too has a purpose  
Like her male counterpart.  
Not meant for early marriage.  
Or any form of abuse  
She possesses all the attributes  
To contribute to societal life  
Suppression amounts to societal stagnation.  
She is educable and withstands the test of time.  
She detests early marriage.  
Assertive, she refuses help for sex  
She rejects sex for help.  
The girl too, is not alien to skilled jobs  
Lest to mention effective leadership roles  
The girl too, can kindle society.  
Her roles go beyond mere motherhood.  
She assuages the afflicted.  
She feeds the hungry.*

*The girl too, possesses the art of statecraft.*

*The stage belongs to all  
Prevention, exclusion, exploitation  
Are just but denial.  
Wake up, people of civility  
From your slumber  
Support both girls and boys  
For they both are societal assets.*

**Dedicated to all Liberians and Posterity**

***The Liberia Dream:***

*The Liberia Dream, a perpetual optimism  
Which sets in motion true patriotism.  
For once she led the struggle for African Independence  
To restore continental self-confidence.  
Once suppressed by European Colonial Domination  
To exercise self-determination.  
With sovereignty and national unity  
Liberia provides for creativity.  
She always plays host  
To place the disadvantaged on the right post.  
With her, whoever seeks freedom  
Shall never fall into the dungeon.  
Mama Liberia will never fall prey to a pit  
Meant to destroy her weight.  
She possesses the will power  
To fulfil her development goals forever.  
The Liberia Dream detests disunity.  
It calls for national unity*

*Which ignites brotherhood.  
The Liberia Dream flushes out divisive tendencies  
And brings about shared responsibilities.  
The Liberia Dream, enlightenment for posterity  
Who will forever cherish national unity.*

## INRODUCTION

Teacher Education is an expensive and intensive resource exhausting and time-consuming exercise that all civilized nations undertake. The goal is simple –no nation develops without an adequately educated population. The attainment of this universal goal is dependent upon the quality of Teacher Education Programs the world over. Because teachers are concerned with citizens of the future, life-chances, social inclusion, and quality of children’s’ experiences in the present, they can never avoid value questions; because they deal with constant flow of dilemmas, they can never avoid the need to exercise professional judgment (Pollard et. al, 2006).

The importance of teachers is demonstrated in all spheres of human civilizations, as the demand for diversified specializations is society’s guard post. Moore (2007) has divided the role of the teacher into three broad categories as ‘Instructional Expert, Manager and Counselor.’ Similarly, the Professional Ethics and Behavior Domain of the Professional Standards for Teachers in Liberia (2008) states that the “teacher uses guidance and counseling skills to solve problems in the school and community and serves as a model of good citizenship, following the rules of the Ministry of Education and the laws of the country.”

With these inherent, outstanding attributes and qualities of especially trained teachers, interested stakeholders in the Liberian Education System have all reasons to deplore the precarious and degrading conditions of neglected trained teachers in the country.

For example, many In-Service Teachers are forced to abandon their instructional engagements to seek greener pastures elsewhere due to the Ministry of Education (MOE) inability to adjust or increase their salaries following the upgrading of their professional levels. As Pollard et al. (2006) generalized, teachers’ values have considerable social significance because of the responsibilities of their professional position.

At the same time, these In-Service Teachers are also plagued with unwarranted retirement shortly after undergoing their professional training or education. Still, many Pre-Service Teachers are unemployed and left to make their way through society supervening rigorous training. This has given the ground to non-trained individuals to gravitate into schools as teachers and school administrators with no pedagogue-content orientations. Hence, there is a common saying in Liberia that “When the Qualified are not available, the Available are qualified.”

Considered in this debate are also factors that hinder the smooth conduct of quality education in Liberia such as academic malpractices, weaknesses in the Education System; the importance of teacher training or education, teacher employment, deployment, and retention, instructional supervision, and planning, all in observance of educational regulatory processes and

implementation which have psychological implications. This can be explained by Organizational Psychology which focuses on work motivation, job satisfaction, leadership, organizational climate, and related topics (Weiten, 1995).

### **POLICY VERSES IMPLEMENTATION**

According to the mandate of the William V.S. Tubman School of Teacher Training engendered in 1947, now William V.S. Tubman College of Education, University of Liberia, “the college was established to contribute to the scientific development of education in the nation by preparing Pre-Service Teachers for the Elementary and Secondary Schools. In addition, it is to assist in the professional improvement of In-Service Teachers and collaborate with the Ministry of Education in Educational Planning and Programs for the nation” (University of Liberia 102<sup>nd</sup> Combined Commencement Convocation Souvenir Program, 2022).

Invariably, the incapacity of the Ministry of Education and other essential institutions and organizations to absorb and adequately pay trained teachers has led to teachers’ apathy, attrition, fatigue, moonlighting, burnout, and double-dipping. The repercussions translate in schools—both rural or urban being understaffed, under-supervised, poorly administered, and neglected. After all, the bottom line of recruiting, selecting, training, paying, and appraising workers is largely one of optimizing employee performance (Dessler, 1990c).

Compromisingly, private, and faith-based institutions for the most part hire, subordinate, and underpay these dashing trained teachers because the teachers have no options. These institutions on the other hand, sometimes refuse to employ qualified teachers because remuneration must be commensurate with their qualifications—something considered “budgetary constraints or limitations.”

In some cases, communities construct public or community schools and request Government or Ministry of Education to assign teachers thereto during elaborate dedicatory ceremonies, when livestock lose their lives. The government officials concerned would advise the community to hire volunteer teachers who will be placed on payroll in the “shortest possible time.”

No sooner had the officials left than their promise go into oblivion, leaving the school and volunteers vulnerable. The community then bears the burden of upkeeping the teachers, who may subsequently exploit the situation by collecting illegal fees, sexually harassing students-exchanging grades for sex or sex for grades among others.

To dilute the situation for instance, other institutions or employers, majority of whom have no formal Teacher Training or Education style themselves, their spouses, children, relatives, high school and college dropouts as supervisors, principals, vice principals for instruction, registrars, who for that matter lack pedagogue-content and educational supervisory orientations among others. What then is their purpose for supervising teachers—teachers’ presence, absence, or substance? Teachers’ substance translates into their “ability to prepare and execute professional teaching plans in accordance with the content of the curriculum” (Karngebea & Kennedy, 2022). Are the untrained teachers knowledgeable about this? Of course, no! Their presence or absence is what counts.

At times, school boards, proprietors and proprietresses warn, suspend, threaten to dismiss, or dismiss qualified teachers who vow to be strict on executing administrative and instructional



conventions or policies such as students' attendance, grading of course works among others. The reason is simple: Based on the commercial nature of these schools, there is a high tendency of not wanting to lose students. All the same, they set standards which require teachers not to award grades below 70, lest enrollment declines and cash profits become marginal.

In effect, teachers and school administrators, trained or untrained, become inept, and therefore get involved in what President William Richard Tolbert (1975) referred to as "NONFEASANCE, MISFEASANCE, and MALFEASANCE." Defining these words, Merriam-Webster Dictionary (Since 1828), reflected in Karngbea (2023), proceeds in the following manner: NONFEASANCE---failure to do what ought to be done; MISFEASANCE---the performance of a lawful action in an illegal or improper manner; and MALFEASANCE---wrongdoing or misconduct especially by a public official. Ultimately, these unwholesome practices are rampant in all spheres of public life because proper education, skills, attitudes, values, and information are not inculcated into the learners due to the unpreparedness of the personnel who man the education system.

In this regard, the Liberia Parent-Teacher Association Training Manual (2008), describes the purpose of education under the theme "Service Learning" (paraphrased) infra: Service Learning gives students the opportunity to share and practice what they have learnt to real life experiences to support and improve their community. In addition, it gives youth the opportunity to acquire knowledge, skills, and attitudes to enable them take up lead roles in the community for advocacy, civic responsibilities, social, personal growth and development. Moreover, Service Learning obtains that young people help to determine and meet real, defined school or community needs.

In so doing, it becomes imperative on the part of the education system to inculcate into the students the importance and skills of Civic Education to broaden their horizon on the preservation or conservation of their heritage. The idea of Civic Education comes in because the youthful population needs to be informed and empowered with the knowledge, skills, and attitudes to enable them make informed choices and decisions on issues that affect their daily life, which may be cultural, economic, political, or social. Hence, the reintroduction or teaching of Civics in our schools is the most effective and safer way of promoting Civic Education and a civilized society.

In contrast, the society is plagued with corruption---i.e., nepotism, favoritism, and connectivism, not only in Liberia, but also in many developing countries across Sub-Saharan Africa. The consequential impact conduces to the ineffectiveness of the Civil Service and societal underdevelopment because quality education is either denied, commercialized, compromised, or neglected, and not considered a force for human capacity building and transformation. In general, the civil Service in Africa is weak, inefficient, highly politicized, and often either ethnic dominated or fractured by the concentration of different ethnic groups in different parts of the administration (UNDESA, 2000).

As she put it, Indira Gandhi, reflected in STRIDE-IGNOU/P.O. IT (1999), caveated: "Education is a liberating force, and in our age, it is a democratizing force, cutting across the barriers of caste and class, smoothing out inequalities imposed by birth or other circumstances." In like manner, John F. Kennedy (1963) cautioned humanity: "If a free society cannot help the many who are poor, it cannot protect the few who are rich." A free society no doubt depicts a democratic society in which education is a priority, thus providing for the diversified needs of a nation in terms of human resource development.

According to Article 26, Sections One and Two, reflected in (MoE, 1999), "Everyone has the right to education, which shall be directed to the full development of the human personality and to the strengthening of respect for human right and fundamental freedom. Education shall promote understanding, tolerance, and friendship among all nations, racial or religious."

One thing is certain, beautiful education policies are often frustrated by reneged implementation in developing countries of which Liberia is no exception. For instance, here is what the Liberian Education Reform Act (2011), offers in part in its preamble: "Whereas, the Constitution of the Republic of Liberia, recognizing the vital role assigned individual citizens for social, economic, and political well-being of Liberia enunciates as one of the General Principles of National Policy of the Government of Liberia that there should be equal access to educational opportunities and facilitates for all citizens and residents to the extent of "available resources" and that emphasis shall be placed on mass education of Liberians and the elimination of illiteracy."

As regards "available resources," Liberia is rich in natural resources among which are diamond, gold, iron ore, rubber, timber, forest, land and swamps for agriculture among others. The issue rests with our national leaders who manage or mismanage these resources. In his inaugural address in January 2018, President George Manneh Weah said, "I will make sure that government resources (money) do not end up in the pockets of public officials." Interestingly, Former Minister of State for Presidential Affairs, Mr. Nathaniel Mcgail, President George Weah's closest confidant and US Treasury Department's money laundering indictee, remarked at a political rally in Gbarnga City in 2022 that "the money government officials steal is used to build Liberia and not carried outside of the country."

What an irony and contradiction to a presidential policy statement at inauguration! A holistic approach to good governance requires that public officials be held responsible and accountable not only for administrative procedures (following rules and regulations and keeping away from illegal activities), but also for the ethical and moral consequences of their deeds (Olowu & Sako, 2002).

Meanwhile, in the author's view, the phrase "elimination of illiteracy" is an overstatement. He therefore reduces the phrase to the "minimization of illiteracy" because relevant, appropriate resources are not committed to education. For example, the question of employment, deployment, remuneration, and retention of trained pre-service teachers commensurable with their qualifications remains unaddressed; as most of them have become commercial motorcyclists, street sellers, chain sawyers, plank sellers, and private security guards. These petit commercial activities existing within the Private Sector need government protection and promotion. As the major engine of economic growth, and hence the creation of wealth and employment, the Private Sector creates the necessary conditions for sustainable development (UNDESA, 2000).

Aside from other universities and colleges of Teacher Education including the Rural Teachers Training Institutes in Liberia, the College of Education at the University of Liberia graduates hundreds of pre-service teachers every year who are not absorbed by the Ministry of Education's employment apparatus. Furthermore, In-service teachers graduate and are denied salary increment or adjustment, and to add insult to injury, they are unwarrantedly retired with little, delayed disbursement of a percentage of an already low salary—the author is a clear victim! His take-home salary was 36,000 Liberian Dollars at the rate of 150 LD to one United States Dollar.

Now he receives 11,000 LD at retirement following 41 years of service. "The Quest for Quality Education in the Face of Neglected Trained Teachers in Liberia: A Dilemma of Efficient Human Resource Development"

### **INSTRUCTIONAL PLANNING AND SUPERVISION**

It is important to recognize that the question of Instructional Planning and Supervision is sine qua non to the effective conduct of education anywhere and everywhere around the globe. Supervision, according to Merriam-Webster Dictionary (Since 1828), is defined as the act of critically watching and directing the activities and actions of members of a team or work group in an organization or institution. It entails superintendence, guidance, regulations, governance, controlling and directing a workforce for the achievement of desired goals (Dessler, 1990c). Instructional Supervision therefore places premium on Instructional Planning and implementation of the lesson. Planning on the other hand, calls to play the development of a sequence of steps and events that lead to the achievement of desired goals.

This accordingly brings to spotlight the significance of Instructional Planning from the points of view of the teacher and school administrator. Thus, Instructional Planning is important as posited by the Liberia Ministry of Education Teacher's Handbook (1984), paraphrased in Karngbeae and Kennedy (2022) in the following manner:

#### **The Administrator's Point of View**

- i. To obtain evidence and evaluate the teacher's ability to prepare and execute a professional teaching plan.
- ii. To evaluate the teacher's ability to arrange curricular contents in coherent manner.
- iii. To avail the lesson plan to a substitute teacher for instruction.

#### **The Teacher's Point of View**

- i. To prepare oneself in terms of content, objectives, materials, strategies, and time of presentation, thus avoiding unstructured instruction.
- ii. To use the plan as evidence that it was prepared and executed.
- iii. To ensure content coherence, and to win respect from colleagues or peers, administrators, students, and other interested parties.
- iv. To use the plan as a future reference to reinforce its strengths and improve on weaknesses revealed in the previous plan and presentation.

These mutual administrative and instructional positions held by the teacher and school administrator depict the single most beneficial relationship that both instructional actors use as their guard post to enhance students' learning. Notably, this symbiotic interaction reflects three levels of instructional supervisory engagements or dialogues namely Pre-observation Conference, Classroom Observation and Post-observation Conference. These conferences, when conducted professionally, result in trust and confidence building, and ultimately the accentuation of instruction and students' achievement.

In essence, many teachers are seeking to change their practices to support teaching for critical thinking to challenge the students not just to memorize, but to question, examine, create, solve, interpret, and debate the materials in their courses (Open Society Foundation -London and Open Society Initiative -West Africa, 2008). According to Dr. Corrine Anderson (2008), captured in

Karngbeae and Kennedy (2022), "a good teaching habit does not have national boundaries or international peripheries."

Note however, that the observation conferences are especially important since the teachers in question are challenged because they are either unqualified or untrained. For the teachers in this category, these conferences are in themselves staff development driven. The fact remains: The Instructional Supervisor or Vice Principal for Instruction who happens to be the technical arm of the school, is there to help the teacher grow professionally and not to police him or her. As it is, instruction, a derivative of the curriculum, is the central nerve of any educational system.

Pin-pointedly, the purpose of Classroom Observation is to see the various interpersonal interactions between the instructor, instructional aides, if any, classroom volunteers, and those interactions occurring among students in the classroom (USAID/MOE, 2008).

Meanwhile, the trained teacher and instructional supervisor, versed in pedagogue-content knowledge, skills, and attitudes are presumed to possess what Borich (2011) calls the "Three Powers of the Teacher-i.e., Legitimate Power, Expert Power, and Referent Power." Describing these powers, he asserts (paraphrased), that the "Legitimate Power" gives the teacher the legal authority to take over as leader and manager of the class during instruction and any other interactions involving academic activities associated thereto. The "Expert Power" translates into the possession of relevant information, knowledge, skills, and attitudes, and the capacity to select appropriate instructional strategies and materials or aids and classroom management skills which entail effective communication, physical dexterity, proximity control among others.

The "Referent Power" calls for the teacher's flexibility, but frankness; strict to the point, that is. This power requires the teacher to always be available, accessible, approachable, and accountable—he/she is "In loco parentis," not a Boogieman to be feared by anyone, someone, or everyone (Karngbeae & Kennedy, 2022). By "In loco parentis," a Latin phrase, is meant that the "teacher is in the place of parents," and should always address the concerns, interests, and grievances of students whenever the need arises.

Anything to the contrary creates a disequilibrium in students' motivation and learning, thereby incapacitating their enthusiasm and desire for excellence and advancement. Adversely, the untrained or unqualified teacher may not possess the teacher's powers described supra.

The question remains: Are unqualified or untrained schoolteachers and administrators capable of running an effective school system? Of course, no. They may or may not even have the passion for teaching, but because they are unemployed at the time, they find teaching to be what Dr. Seth Bansa (1984), called a "Revolving Door Profession." This means that they spend uncommitted time in the classroom and exit later when they find windows of opportunities outside of the field of education. This is one of the factors that has impotentiated not only the Liberian School System but other systems in developing countries. To hit the nail on the head, sub-standard schools have mushroomed to quench the commercial appetites of proprietors, proprietresses, and boards of private and faith-based schools and institutions.

Consequently, the spillover effect is that students become victims of content omissions and gaps due to teachers' lack of pedagogue-content knowledge and skills, coupled with moonlighting, double-dipping, or burnout with no sincere commitment to duty. Hence, massive failure in the

West African Examinations, standardized and placement examinations administered by entities and institutions of higher learning become the talk of the time.

As President Ellen Johnson Sirleaf (2015c), put it, "The Liberian Education System is a Mess." And to remedy the "Mess," in the author's view, both male and female learners must be considered as equals in all spheres of their educational sojourns. Thus, concerning female education in Liberia, the learned Professor Edward Wilmot Blyden of Liberia College, now University of Liberia, during whose days (1860s), women were not offered the opportunity to acquire college education, took a stance.

Strongly believing that women deserved the opportunity to acquire college education, he wrote: "I trust that arrangement will be made for girls in our country to be admitted to this college. I can't see why our sisters should not receive the same general culture as we (men) do. I think the progress of the country will be more rapid and permanent when girls receive the same training as the boys; and our women, besides appreciating the intellectual labors of their husbands and brothers, will also share the pleasure of intellectual pursuit" (Reeves, 1995). No doubt, the author intends his Prologic Poem "The Girl Too" to reinforce Blyden's dream for Liberian women.

### **ACADEMIC MALPRACTICES**

One of the worst practices that is eating up the subsistence or fabric of the current Liberian School System and promoting the "Mess" is the introduction and practice of a syndicate called "Flexibility Fee" which is collected from students before or during the administration of the West African Senior Secondary School Certificate Examinations. This practice is in some cases accompanied or preceded by "taking examinees on camp" to await the examinations, where test copies are smuggled and surreptitiously responded to. Any teacher refusing to "go on camp" is considered renegade. He or she may face suspension, dismissal, or experience salary deduction and so on.

Furthermore, during the administration of the examinations, subject specialists are hired and confined to facilities nearby and provided copies of the examinations, wherein they extract the correct responses, send them to the proctors who distribute same to the examinees. These practices are common among public, private, and faith-based institutions in Liberia who are competing for academic excellence or rather academic dishonesty.

Disappointingly, the "Flexibility" beneficiaries, the students, that is, enter institutions of higher learning with very weak backgrounds especially in English and Mathematics, not to mention the Natural Sciences. Performing poorly in their academic pursuit, and frustrated, they drop out or sell themselves to "vote-seeking or vote-ragging politicians" thereby taking wrong political decisions in their quest for "immediate gratifications." Lamenting such a situation, the Nobel Prize Winner, Professor Akinwande Oluwole Babatunde Soyinka decries: "Only in Africa will thieves be regrouping to loot again and the youths whose future is being stolen will be celebrating it..."

Considering the resources-human, financial, material, time, and distance committed to the training of teachers, this study questions the rationale for the Ministry of Education not adequately employing Pre-Service Teachers on the one hand, and retiring In-Service Teachers shortly following graduation, and not adjusting or increasing their salaries following completion of their studies on the other. "The Quest for Quality Education in the Face of Neglected Trained Teachers in Liberia: A Dilemma of Effective Human Resource Development"

Put another way, it has become perennial since the inception of the Ellen Johnson Sirleaf Administration dating 2005 to present that teacher—both Pre-service and In-service, following their pursuit of required courses of study find themselves either unemployed, underemployed, denied salary adjustment (increment), or unwarrantedly retired. These teachers are mostly products of government-run institutions, private, faith-based, or corporate universities and colleges of teacher training and education. All the same, these teachers are beneficiaries of government tuition-free programs, subsidies, or permission to remain on payroll while pursuing their studies. They all benefit one way or the other from government or societal resources.

Theoretically supporting the importance of Teacher Education, the National Professional Standards for Teachers in Namibia (2006) postulates that “Other than economic benefits, an effective education and training system has well-documented broader benefits that are crucial to development –poverty reduction and equity, improved absorptive capacity for social services, participatory democracy, and good governance.”

In like manner, a Liberian Education Policy Document asserts that “Whereas the Liberian Government realizes that education facilitates poverty reduction and is essential for the development of individual citizens and national growth, and that it equips people with the relevant skills to participate in essential economic and social activities of the nation, a new Education Law is hereby enacted (Ministry of Foreign Affairs, 2011).

### **SOME WEAKNESSES IN THE LIBERIAN EDUCATION SYSTEM**

The first and foremost limitation in the Liberian Education System is the hiring or employment of unqualified or untrained schoolteachers and administrators who respectively lack the skills in deconstructing and delivering the National School Curricula on the one hand, and their inability to professionally supervise instruction on the other. Inversely, the trained teacher can plan daily lessons with clear objectives as well as plan for the medium and long terms, thus breaking down the curriculum into meaningful topics according to the instructional time available (Professional Standards for Teachers in Liberia, 2008).

Thus, the inability of any teacher to demonstrate an understanding of what Moore (2007), refers to as Pre-instructional Skills, Instructional Skills, and Post Instructional Skills renders him or her unfit for teaching in any school. The teacher ought to be an embodiment of the “Competencies” under the Five Domains of the Professional Standards for Teachers in Liberia (2008), namely Knowledge, Teaching Skills, Classroom Management, Assessment and Evaluation and Professional Ethics and Behavior. To claim international attention, interest, and critique about the Liberian Education System, the author has, by courtesy of the Ministry of Education certified-copied the Professional Standards for Teachers in Liberia infra:

#### **Domain 1: Knowledge Description**

Knowledge refers to the content knowledge, the technical knowledge, and practical understanding a teacher needs in order to carry out his or her duties.

The teacher...

- a. has knowledge of the content and a thorough understanding of the subject matter he or she teaches.
- b. has thorough knowledge of the National Ministry of Education Curriculum and applies this effectively in teaching, making connections across subject matters where applicable.
- c. has basic knowledge of the Philosophy of Education in Liberia.

- d. knows and applies the rules and policies of the Ministry of Education.
- e. has thorough knowledge of the Constitution of Liberia.
- f. has knowledge of theories of child development and child psychology including psychosocial issues and applies these in teaching.
- g. has knowledge of approaches to teaching and learning and related methodologies and applies these in the classroom as appropriate.
- h. has knowledge of the heritage, values, customs, and traditions of Liberian Society and how these affect individual students.
- i. is aware of the importance of integrating psychological and vocational life skills into teaching to promote self-responsibility in students and help each student achieve his or her personal best in life.
- j. has sound knowledge of the English Language in spoken and written forms and is able to transfer that knowledge to students.

### **Domain 2: Teaching Skills Description**

Teaching Skills refers to the processes, strategies, and techniques of planning and implementation of teaching and learning.

The teacher...

- a. is able to plan daily lessons with clear objectives as well as plan for the medium and long range.
- b. is able to break down the curriculum into meaningful topics according to the instructional time available.
- c. knows how to teach the basic skills of the core curriculum and helps students who have challenges in these areas.
- d. is clear and comprehensible in the presentation of information, gives clear instructions and checks the learning of students.
- e. makes learning enjoyable and challenging for students and sets high expectations in a spirit of friendly competition.
- f. uses relevant and appropriate teaching aids and makes use of available modern technology to enhance learning.
- g. uses student-centered methods, extra-curricular activities, sports, play and drama to enhance better learning and child development.
- h. is able to make learning relevant and meaningful to students and relate it to their everyday lives by using real life stories, local examples, materials, aids and resources.

### **Domain 3: Classroom Management Description**

Classroom Management refers to the strategies and implementation means used by the teacher to maintain a conducive teaching and learning environment. It includes classroom setting as well as all other arrangements to ensure proper behavior and interactions that enhance learning.

The teacher...

- a. makes sure that maximum time is used on learning by getting and keeping students' attention, and by establishing routines to manage the class.
- b. possesses good communication skills, presents new materials clearly, gives clear instructions and checks for understanding and output.
- c. uses suitable counseling and disciplinary procedures and techniques of conflict resolution to deal with problems both in and out of the classroom.
- d. Ensure active participation by all students in the class through effective questioning techniques and the use of individual, pair, and group work.

- e. creates a positive atmosphere in the classroom conducive to learning and motivates students through appropriate supportive actions.
- f. ensures that the physical environment of the classroom is as conducive to learning as possible.
- g. teaches each individual student in the class taking into account individual differences in learning styles, abilities, ages, needs, skills, activities, prior knowledge, psychological needs and behavior, and manages large, mixed-ability and multi-level classes effectively.

#### **Domain: Student Assessment and Evaluation Description**

Student Assessment and Evaluation refers to the process of collecting, analyzing, interpreting, and communicating information about students' performance using a range of tools to indicate students' levels of achievement and to determine and improve the effectiveness of instruction.

The teacher...

- a. follows students' progress and monitors improvement over time as a result of instruction.
- b. is able to design appropriate, valid and reliable assessment instruments.
- c. involves students in evaluating their own work, and interprets and communicates grades to parents, guardians, and school authorities through report cards or grade sheets.
- d. gives students frequent constructive feedbacks on their performance in a timely manner.
- e. assesses and evaluates students in a fair and consistent manner, regardless of individual differences, between and amongst them and marks work and returns it in a timely fashion.
- f. adheres to the Ministry of Education policy on promotion of students and composition of classes.
- g. monitors students' progress through the setting of quizzes, assignments, class participation and tests (written or oral) and sets remedial work where necessary.
- h. plans, conducts, and administers valid and reliable tests.
- i. keeps accurate records of grades to make decisions on students' progress.
- j. makes informal assessment of students in the classroom on a regular basis.

#### **Domain 5: Profession Ethics and Behavior Description**

Professional Ethics and Behavior refers to teachers' code of behavior as they carry out their duties. It includes good citizenship, dress code and the teacher's ability to interact with others and society at large. This code of conduct should be reflected in all the activities carried out by the teacher.

The teacher...

- a. contributes to the life of the community and society at large and maintains good working relationship with students, parents, and other staff and the school community.
- b. is consistently aware of the importance of psychosocial issues such as ills in society and the home like rape, child abuse, forced labor at home, and denial of access to learning facilities, and takes account of these in teaching.
- c. reflects on his or her own practices in order to continue to improve and continuously seeks opportunities for professional development.
- d. establishes and maintains a level of effective collaboration between and among fellow teachers.
- e. recognizes and respects the cultural, religious, and personal differences between and among students, parents, and members of the community, valuing their diversities
- f. takes steps to address and resolve conflicts and problems that develop in the classroom and the community.



- g. is a model of good citizenship following the rules of the Ministry of Education and the laws of the country and acts a moral role model for his or her students and community by being appropriately dressed, well-disciplined and patient minded.
- h. addresses issues of child protection, matters concerned with health and safety and HIV/AIDS, STIs, Substance Abuse (drugs, smoking, and alcohol) and violence.
- i. uses guidance and counseling principles in the school and community and helps students overcome challenges confronting them.
- j. plans and executes his or her duties with diligence, commitment, dedication, and fairness.

The Professional Standards for Teachers in Liberia, Code of Conduct for Teachers and School Administrators in Liberia and the Philosophy of Liberian Education are used to inform Teacher Education Curricula, especially at the Rural Teacher Training Institutes and the College of Education, University of Liberia. This is a clear manifestation that both Pre-service and In-service Teachers are well groomed to carry out instructional and administrative functions in the Liberian School System as opposed to high schoolers or graduates, college dropouts, and those from different fields of study other than education.

Hence, the author has used the term “Pedagogue-content” in this discourse to describe the trained teachers’ instructional and administrative competencies in both content or subject matter, backed by the skills in selecting and using appropriate teaching objectives, strategies, aids, and classroom management techniques. Instructional objectives, strategies, aids, classroom management and evaluation are derivatives of instructional planning, which is itself an offshoot of the ‘curriculum,’ the central nerve of all educational systems (Karngbea & Kennedy, 2022).

In short, trained, qualified teachers and school administrators ought to be employed and deployed in the entire school system either as public-school teachers while some are government subsidies to private and faith-based institutions. They can demonstrate understanding of child development and psychology, perceptual styles, learning styles and other guidelines and principles governing teaching and learning. Effective headmasters are firm and purposeful, appoint effective teachers, create consensus and unity of purpose; they share and delegate responsibilities and involve all teachers in decision-making; they are ‘leading professionals’ with an understanding of classrooms and how teaching and learning can be improved (Pollard et al, 2006).

In her FORWARD message contained in the “Training Modules for Teachers and School Administrators in Liberia” (2014), the then Minister of Education, Dr. Etmonia David Tarpeh had this to say: “The Ministry of Education has initiated several reform measures... Effective Governance, Improved Educational Leadership at all levels, Establishment of Functional County Offices, Recruitment of Qualified Teachers and Staff to improve the quality of services. The development of the Code of Conduct for Teachers and School Administrators in Liberia is one such measures undertaken to build a disciplined teaching force that is professional.”

Is this a mere, unfulfilled policy statement, as hundreds of trained teachers from the colleges and universities of teacher education and rural teacher training institutes across the county languish because of unemployment? Policy Verses Implementation. Hence, “The Quest for Quality Education in the Face of Neglected Teachers in Liberia: A Dilemma of Effective Human Resource Development.”

### **The philosophy of Liberian Education: Partly Ironical to Existing Realities?**

Still, another beautiful Liberian Education Policy Document, "The Philosophy of Liberian Education Sector (2011 and beyond)," is also certified-copied in acknowledgement of the courtesy of the Ministry of Education infra:

1. We believe that the 21<sup>st</sup> Century Liberian Education System will provide equal access to quality education for all residents, regardless of race, ethnicity, color, creed, gender, and special needs, religious or political affiliation.
2. We believe that the foundation of this educational system is based on the following Core Values: integrity, accountability, commitment to excellence, transparency, diligence, and moral rectitude.
3. We believe that the 21<sup>st</sup> Century Liberia Education System will subscribe to the Liberian Constitution and the Universal Declaration of Human Rights which posits (consider, regard) education as a fundamental human right.
4. We believe that the 21<sup>st</sup> Century Education System will promote the health and well-being of its people and contribute to sustained social and economic development.
5. We believe that the 21<sup>st</sup> Century Liberian Education System will provide opportunities for its people to be technologically literate and lifelong learners.
6. We believe that the 21<sup>st</sup> Century Liberian Education System will provide a caring, nurturing, and secure learning environment.
7. We believe that the 21<sup>st</sup> Century Liberian Education System will prepare its people to become productive contributors to nation building through workforce development.
8. We believe that the 21<sup>st</sup> Century Education System will function on a decentralized administrative structure to ensure effective and efficient delivery of quality education for all people.

While as a Liberian I am not pessimistic about this educational philosophy, I am concerned about the irony it presents in part: For instance, "...will provide a caring, nurturing, and secure learning environment." Many schools in rural and urban Liberia---ie. Public, private and faith-based are conducted in mischief structures with no ideal furniture or seating, instructional materials, toilet facilities, safe drinking water, recreational spaces among others, lest to mention trained teachers and school administrators. Another irony: "...will provide equal access to quality education for all residents, regardless of race, ethnicity, color, creed, gender, and special needs, religious or political affiliation."

Many schools are either understaffed, run by incompetent administrators, instructed by unqualified individuals while the "real" teachers, trained for the job are neglected, unemployed, unduly retired, denied salary increment or adjustment. As it is, pay is the most important single motivator used in our organized society (Dessler, 1990c). "The Quest for Quality Education in the Face of Neglected Trained Teachers in Liberia: A Dilemma of Efficient Human Resource Development."

### **Gala Anniversary Celebrations in Schools: An Interruption of Instructional Calendar**

One setback in the implementation of the National School curriculum is the celebration of gala anniversaries in many schools across the country. Preparations and execution of these activities take between two to three weeks, when practice and rehearsals are carried out in and outside of the school environment whenever necessary. Accompanied by these ceremonies are requirements for multiple uniforms apart from the formal, regular school uniforms, representing various professions among which include Police, Military, Medical, Law, Engineering, Education

to name a few. Cost intensive, these regalia create undue financial burden on parents and guardians in an underperforming economy in which the rate of unemployment is very high. For the schools, these activities provide edutainment for the students. Whether there are government regulations to checkmate these practices? Laissez Faire, I am afraid.

As a result, gaps and omissions occur in curriculum delivery, due to the time spent on these extracurricular activities. One of the embarrassments this causes is traffic obstruction on streets and roads especially cities and big towns. The attendant risk is that students, usually marching on bands, are vulnerable to motor accidents caused by vehicles and commercial motorcyclists who always in a hurry.

It must be categorically clear that products of colleges of Teacher Education and Teacher Training Institutions are keen on the total implementation of the curriculum, as opposed to their untrained or unqualified counterparts who have limited knowledge about how the curriculum works. For the trained teacher, the "curriculum is a statement of knowledge, skills, instruction, evaluation, and context," whereas the unqualified teachers see it only as a mere requirement.

Leaving gaps in students' learning experiences is a serious breach of the right to education, quality education, that is. Hence, education is a fundamental human right under Article 26 Sections a & b (paraphrased) of the Universal Declaration of Human Rights which states: "Everyone has the right to education, directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms, to promote understanding, tolerance, and friendship among all nations, racial or religious" (USAID/MoE, 2005).

Thus, with a holistic look at Human Rights, United Nations Former Secretary General U-Thant asserted: "The establishment of human rights provides the foundation upon which rests the political structures of human freedom; the achievement of human freedom generates the will as well as the capacity for economic and social progress; the attainment of economic and social progress provides the basis for true peace" (ABC of Teaching Human Rights, 1999).

### **Unregulated Tuition and Fees in the Liberian Education System**

Although the Ministry of Education issues permits to private and faith-based schools to operate, it does not regulate tuition and fees payments, and does not give freedom to parents to buy uniforms from sources of their choice. The schools exercise monopoly over the acquisition or sales of their respective uniforms including expensive sweat-in suits which are used for Physical Education.

In addition, they sell information sheets to students or parents at exorbitant prices especially to new students. A parent or guardian for example, intending to enroll more than one new student is compelled to buy information sheets for each of them. In addition, they buy admission or biodata forms separately as well. As part of admission requirements in some cases, these schools each student of a ream of papers, toiletries including other assortments which do not form part of the tuition and fees. Certainly, some officials of the Ministry of Education and other influential people both in government and the private sector run their own schools. Conflict of Interest is applicable under the circumstances.

### SUMMARY

As we have seen, the Dilemmas in the Quest for Quality Education in Liberia there are several factors that count, major among which some are systemic while others are emerging. For instance, there are beautiful education policies with limited implementation, which date as remote as the colonial and commonwealth periods, when in fact the American Colonization which founded Liberia did not include education on its agenda for colonization; when "resolutions were passed without concrete actions" (Reeves, 1995). Some weaknesses and academic malpractices are highlighted, though resourceful education policy documents are mentioned with their attendant attributes.

This expose therefore touches contemporary or rather perennial educational issues and is in no way intended to malign the reputations of individuals, institutions or organizations who hold stakes in the development and utilization of the potentialities of the youthful citizens and residents of Liberia. Any resemblance is a mere coincidence.

### CONCLUSION

Finally, this discourse represents the author's disposition in negotiating with the appropriate authorities and stakeholders to take strides to perfect the quality of education in Liberia by educating or training, employing, deploying, adequately remunerating, retaining, supervising, and appraising teachers. These actions should be guided by the Philosophy of Liberian Education, Professional Standards for Teachers in Liberia, Code of Conduct for Teachers and School Administrators in Liberia, Training Module for Teachers and School Administrators in Liberia, and the Education Reform Act of 2011 and Beyond. To this effect, John F. Kennedy (1963c), emphasized: "We will not fear to negotiate, nor will we negotiate out of fear."

If as a nation we should succeed in our quest for efficient human resource development through quality education, national policies and policy statements by our leaders must be actualized. For example, Former President Ellen Johnson Sirleaf is quoted as saying: "I was elected through a free and peaceful election, I must preserve freedom and keep the peace; I campaigned against corruption, I must curb it; while we seek national unity and reconciliation, we must not sacrifice justice... we will demonstrate that democracy can work, even under the most challenging conditions."

As clearly stated in the National Civic Education Master Plan for Liberia (2006-2016), "The culture of democracy has to be taught, the structure of government has to be known and understood; the operations of all branches and institutions of government have to be communicated, and a communication channel must be opened to enable government and civil society dialogue regularly and to complement each other in the art of building a democratic society."

### REFERENCES

- Borich, G. (2011). *Effective Teaching Methods: Research-based Practice* (7<sup>th</sup> Edition). Japan: Pearson.
- Karngbeae, L.D. (2023). *Historical Memoir of Liberia: An Autobiography of Leeway Dave Karngbeae*. ISBN 978-620-6-15281-1. Moldova: LAMBERT Academic Publishing.
- Karngbeae, L.D. (2023). *The Origin of King Tappeh: The Ape Descendant Who Founded Tappita Nimba County*. ISBN 978-620-6-16592-7. Moldova: Lambert Academic Publishing.

Karngbeae, L.D. and Kennedy, G.M. (2022). Effectuating Local Governance Structures in the Promotion of Peaceful Coexistence among Liberians in the 21<sup>st</sup> Century and Beyond. ISSN 2208-2697. Green Publication, International Journal for Research in Social Science and Humanities.

Karngbeae, L.D. and Kennedy, G.M. (2022). Instructional Planning: its Importance and Basic Components. ISSN (Print) 2770-2782, ISSN (Online) 2770-2790. International Journal of Social Science and Education Research Studies.

MOE (2006). National Professional Standards for Teachers in Namibia

MOE (2014). Training Modules for Teachers and school Administrators in Liberia.

MOE/USAID (2007c). Human Rights Education Manual for Teachers

MOE/USAID (2008). Professional Standards for Teachers in Liberia

MOE/USAID, (2008). Code of Conduct for Teachers and School Administrators in Liberia

Ministry of Foreign Affairs (2011). New Education Reform Act of Liberia

Moore, D.K. (2007). Classroom Teaching Skills. Toronto, Canada: McGraw Hill

Olowu, D. and Sako, S. (2002). Better Governance and Public Policy: Capacity Building and Democratic Renewal in Africa. Kumarian Press.

Poliard, A. et al. (2006). Reflective Teaching (2<sup>nd</sup> Edition): Evidence-Informed Professional Practice.

Reeves, R. L. (1995). A Short History of Liberian Education (1820-1900)

STRIDE/IGNOU/P.O. IT (1999). The Philosophy of Distance Education: Philosophical Foundation. India

UN (1999). ABC of Teaching Human Rights: Practical Activities for Primary and Secondary Schools. New York, USA.

MOE (2008) Parent-Teacher Association Training Manual. Liberia.

UNDESA (2000). The Government, Civil Society, and the Private Sector: Promoting Good Governance in Liberia Towards the Formulation of a national Framework.

Weiten, W. (1995). Psychology: Themes and Variations. USA: Brooks/Cole Publishing Company National Civic Education Master Plan for Liberia (2006-2016). Monrovia Liberia.

University of Liberia 102<sup>nd</sup> Commencement Convocation Souvenir (2022).

Liberia Teacher Training Project (2008). Teaching and Learning Strategies for the Thinking Classroom. Open Society Foundation-London and Open Society Initiative-West Africa

## Unified Theory of Life

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### Abstract:

This paper is concerned with the unified theory of life based on the critical review for the existing literatures, which had unlocked the secret of life designed by the God. This theory concludes that life for an initial single couple of female and male is created by the God, but the subsequent numeral replications of DNA are able to result in a variety of species in each the kingdom, where each the kingdom is believed to be created spontaneously. It is realized that this work plays a decisive role in criticizing Darwin's theory of evolution, in which he has tentatively proposed that every creature had been evolved from a mono-cell through natural selection and mutation over 3.8 billion years. Currently, his theory remains only a speculation with neither any evidence nor fossil supporting his theory. On the contrary, there are already ample evidences supporting replication mechanisms of DNA that must be created by the God's intelligent design.

*Keywords: Genetics, Origin of Life, DNA, Evolution Theory, Intelligent Design*

### INTRODUCTION

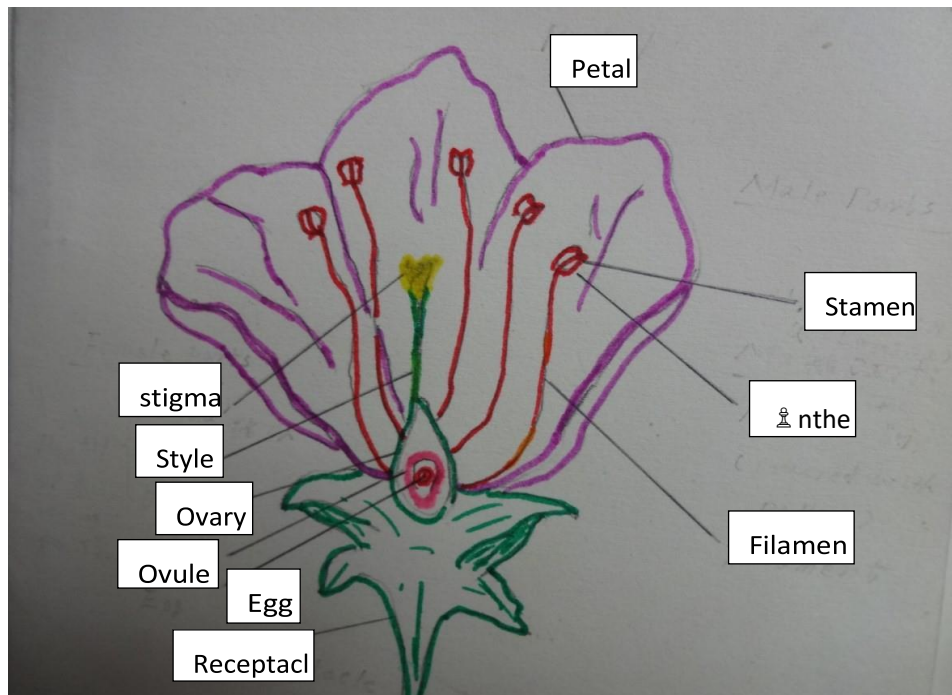
In biblical times, under the god Jacob gave birth to spotted and/or speckled offspring. In plants, pollen covering the stamen fall on the stigma to give seeds and then flowers, whose detailed structures may be seen in Figs. 1 and 2. In seventeenth century, the micro-scope was invented by Zacharias Jansen, and was leading to the discovery of sex cells. In flower, sex cells belong to ovary, ovule and egg together with stamen and stigma as shown in Fig. 2. But, in sex cells for the human, homunculi (tiny human) had never been observed in them. Non the less, Nehemiah Grew had speculated that plants and animals were contrivances of the same wisdom given by the God. Once, it was also considered that heredity is transmitted by blood rather than genes. In the mid-eighteenth century, Erasmus Darwin convinced that any species would adopt to its surroundings. Whereas, Jean Lamarck proposed the coherent theory of evolution as acquired characteristics are inherited to some extent.



Fig.1: Flower of fringed pink, Dianthus, which means holy flower being symbol of elegant Japanese lady.

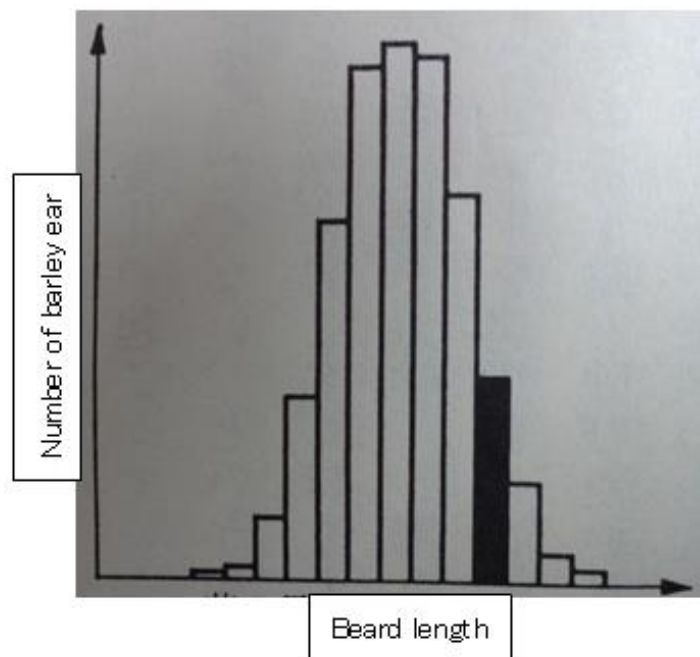
**Family: Nadeshiko, Genus: Dianthus.**

Note that the central stigma being surrounded by eight stamens. Bases of the petals in pink color are bundled at the center, while each of the petals is formed as blurred triangle, and the outer edge is fringed.



**Fig. 2: A brief Sketch of the structure of flower.**

Gregor Mendel had reached at the conclusion that each character of parent plant of edible peas is determined by two genes. In 1859, on the basis of observation during his voyage from 1831 to 1836 Charles Darwin hypothesized that hereditary characteristics would be evolved only by natural selection and/or mutation.



**Fig. 3: Number of barley ear against beard length.**

The black column is one part, number of which seeds will be planted for experiment subsequently. After Schrödinger (1944).

Fig. 3 shows the number of barley ear against the beard length. Darwin had proposed that natural selection enhanced by a series of the tiny but continual mutation enhances to increase the beard length of barley. It is therefore expected that all of the columns in this figure would move to the right, for the average length of the beard attaching to the barley ears must increase. Thus, planting the seeds of the barley belonging to the black column in the garden, and after growing them up, the number of barley ear for each beard length are counted as before, but the result is the same as the previous experiments. It is, therefore, considered that this is one of the counter evidences on Darwin's theory of evolution.

In 1869, Fredrich Mischer obtained pure nuclei from the composition of white blood cells by adding it hydrochloric acid solution, and then DNA (deoxyribonucleic acid) finally by adding the nuclei alkali. Ten years later, Walter Fleming found that aniline dyes imparted DNA color. As early as 1870s, Oskar Hertwig discovered that during fertilization the sperm penetrated the egg, in such a way that the nuclei of the sperm fuse with those of the egg. Edouard van Beneden noticed that the sperm and the egg both contribute the same number of chromosomes per cell, which varies according to the species. The nuclei of the sperm and that of the egg both contained equal number of chromosomes, and so its number should be doubled during fertilization. But unexpectedly, Beneden noticed that the chromosome number remains constant, maintaining the characteristic number for each of the species: It is called "meiosis" in Greek. Meiosis was explained by Fleming, who explained clearly that instead of merging, the encountered two chromosomes split length-wise into two identical halves. After being scattered in the cell, one half of chromosome for the sperm merged with that for the egg, while the other half of chromosome for the sperm merged with that for the egg.

In 1911, Thomas H. Morgan realized that genes could be mapped. Just over a decade later, he had extended this map to include the relative positions of over 2000 genes on *Drosophila's* four chromosomes, where *Drosophila* is called "Shojyobae" in Japanese. Herman Müller discovered that when the flies are irradiated with X-rays, they produce mutations at ca. 150 times their normal rate.

In 1920, when Fred Griffiths injected mice with either noninfectious rough cells or noninfectious heat-killed smooth cells, the mice naturally remained unaffected. But if he injected the mice with living rough cells and heat-killed smooth cells, the mice were infected. When he examined these mice, he found that they contained infectious smooth cells:

Something in the dead cells might have caused this curious transformation in the living ones. Oswald A very set about trying to isolate this transforming principle, and by 1944 he had shown that it was caused by DNA, which contained four bases, viz. adenine, thymine, guanine and cytosine as shown by P.A.T. Levene. These were arranged in varying order along a linking structure, carrying equal amounts of the four bases. Proteins in the chromosomes were carriers of genetic information.

DNA had a backbone consisting of sugar molecules(deoxyribose), linked by a bond of phosphodiester. Attached to each sugar molecule was one of the four bases. Using the latest purification technique, Edwin Chargaff managed to isolate the four bases. By the early 1950s, he



had found that they were not exactly equal. Representing the four bases as A, T, G, and C symbolically, he had proposed the following rules, being essential in analysis of DNA:  $A+G=T+C$ ,  $A=T$  and  $G=C$

In 1953, at last James Watson and Francis Crick had unlocked God's secret of life, and how it had passed from generation to generation since 3.8 billion.

The main purpose of the present study is to propose a unified theory of life, by reviewing critically existing literatures which had contributed to reveal the secret of life.

### **DAWN OF GENETICS**

References to genetics go back as far as biblical time: According to genesis, Jacob had a method for making sure that his sheep and goats gave birth to spotted and speckled offspring. More realistically, the Babylonians understand how palm become fruitful, and pollen covering anther at the stamen have to be introduced to the stigma at first, and then it is transported to style, and become the egg through ovary and ovule, where the pistil is consisting of the three parts, viz. stigma, style and ovary, as depicted in Fig.2.

The ancient Greek philosophers were the first to look at the world in a recognizably scientific fashion. Aristotle's observations led him to conclude that the male and female do not make equal contributions to their offspring: The female and the male give "matter", and "motion", respectively.

Genetics in biology crossed the threshold into science in the seventeenth century. This was almost entirely due to the micro-scope, which was invented by the Dutch lens-grinder and counterfeiter, Zacharias Jansen in the early 1600s. Microscopes led to the discovery of the cell. The discovery of sex cells (or germ cells) caused great excitement. Soon after several microscopists enthusiastically convinced that they had observed "homunculi" (tiny human forms) inside the cells, once it looked as if the problem of reproduction was solved entirely. More importantly, the English botanist, Nehemiah Grew speculated that plants and animals were "contrivances of the same wisdom", being created by the God. He suggested that plants too have sexual organs and exhibit sexual behavior.

For centuries, it had been widely accepted that heredity was transmitted by "blood". This is the reason why such a commonplace expression is known as "blood line" (血脈 in Japanese). But this was not only rough, but inadequate: How could the same parents having their common "blood" mixed produced different offspring? Also, what accounted for the appearance of characteristics not present in either parent, although sometimes seen in long-dead ancestors and distant relatives? For instance, in thoroughbred racehorse breeding, piebald has been known to recur after a gap of dozens of generations.

By the mid-eighteenth century the scientists had at last started speculating along lines that were obvious to any racehorse breeder. One of the early developers of this idea was the eighteenth-century philosopher-poet-scientist Erasmus Darwin, who is father of the famous Charles.

Erasmus was convinced that species were capable of change in such a way that any specie with "lust, hunger and/or a desire for security" would organically adopt to its surroundings. On one hand, the French naturalist Jean Lamarck came up with the first coherent theory of evolution.

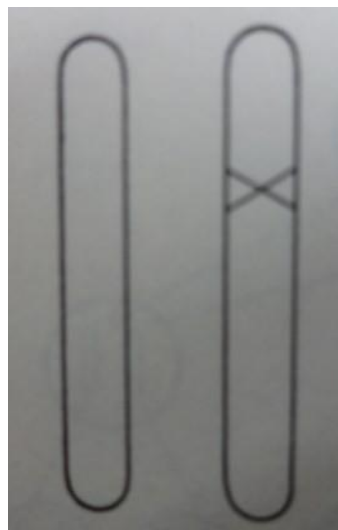
Lamarck had been born in 1744, the son of a broke aristo. By the age of thirty-seven he had become Botanist to the King. When the Revolution took place, Louis XVI was executed, along with any blood line who could be found. But Lamarck quickly evolved a suitable social cover, and emerged as Professor of Zoology at Paris.

According to Lamarck, "acquired characteristics are inherited." In other words, a man who has learned how to become a skillful fencer will pass on this skill to his son. This sounds fairly plausible- especially when one considers the Bach family. However, the fault in the "acquired characteristics" theory is demonstrated by a more extreme example: Even after generations of being blinded at birth to work in coal mines, pit ponies were still not born blind. Nevertheless, not long after Lamarck died, the idea of evolution gradually became more widespread.

### MODERN GENETICS

Gregor Mendel was born in 1822 in Silesia, which was then part of Austro-Hungarian Empire. His parents were peasants and so he was forced to abandon his university studies because he had no money. In order to continue his education, he entered the priesthood, where he taught him-self science yet failed his simple teaching exams. Allegedly this was because of "examination amnesia," though the fact that he scored lowest marks in biology, speaks of some more profound resistance to systemized knowledge.

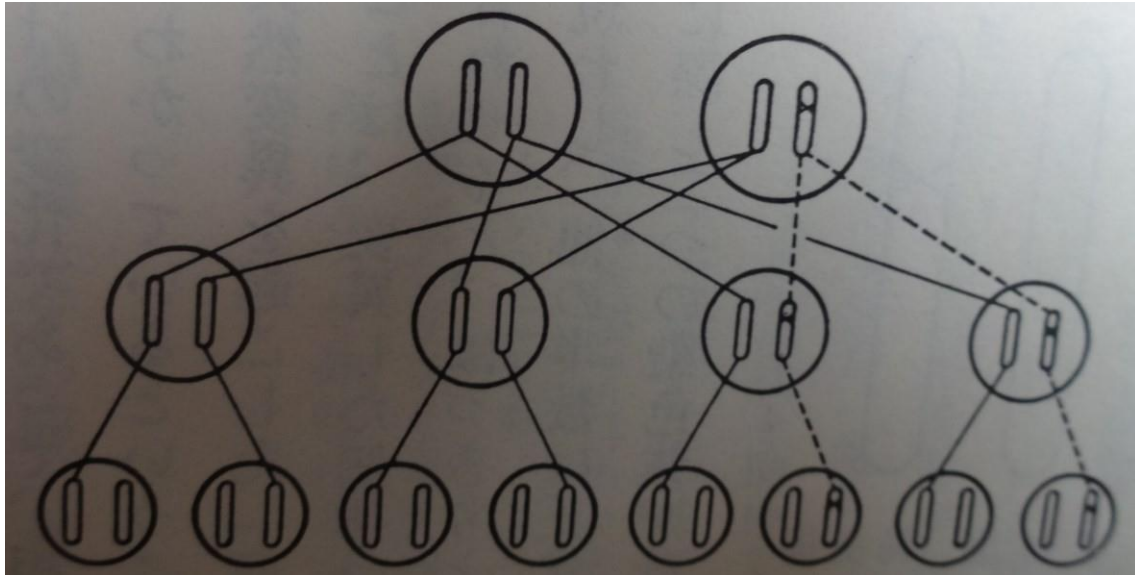
Despite this, it was in systemization that Mendel showed his genius. Mendel ended up at a monastery just outside Bruno, which is now Czech Republic. Put to work in the monastery garden, he began a long and systematic series of experiments crossbreeding edible pea plants, Mendel studied seven different characteristics of the plants, such as flower color, height, seed shapes and so on.



**Fig. 4: Heterozygote mutant.**

Symbol x denotes a pair of the gene, where the half is muted.

Fig.4 depicts a pair of the gene, where one half is muted, but the rest half is normal.



**Fig. 5: Inheritance way of mutation, representing the well-known Mendel's law**

Solid line denotes the transformation of normal chromosome, while the broken line denotes that of mutant chromosome. Note that eight pairs of chromosomes with no line are originating from the respective spouse in the second generation, where all of the chromosomes due to the spouse are normal.

Fig.5 shows the inheritance way of mutation. As the results of the hybrid in the first generation, only the four chromosomes would be produced in the second generation, where all of these chromosomes are normal though the two pairs include mutant chromosome in half. This happens because the normal chromosome is dominant against the mutant one. It is interesting to note that in the third generation  $3/4$  of the chromosomes is normal, while  $1/4$  is mutant, so that Mendel's law is demonstrated in the present discussion.

Referring to Mendel's paper in 1859 when those of the first hybrids in generation were crossed with each other, they produced 75 % tall plants and 25 % short plants.

Mendel concluded that each character was determined by two "genes", one contributed by each parent plant. For instance, the characteristic of height was determined by a "tallness" gene and a "shortness" gene, respectively. Those two genes remained in the plants. If they did not blend, they retained their separate identities-but one was dominant. In this case, the "tallness" gene was dominant. This explained why when the plants were initially crossed, their hybrid offspring were all tall in the second generation, but when the resulting hybrids were crossed again, the "tallness" and "shortness" genes were split and reformed in the third generation. Each parent contributes one gene to each offspring, producing four possible combinations: This accounted for the 75%:25% distribution of tall plants and short plants after the second crossing, as shown Fig. 5.

It looks as if genes held the key to heredity. After conducting over twenty thousand experiments. Mendel came to further conclusions. Firstly, plants inherited equal number of genes from each parent. Also, separated pairs of genes always paired up again independently of one another. He further suggested that these genes were transmitted by germ cells.

Mendel had indicated why certain observable characteristics such as pie-baldness in horses could skip generations, and why children of the same parents do not exhibit the same characteristics. This is because the independent pairing of the separated genes results in a variety of combinations through several generations.

Mendel had written a paper on his work entitled "Experiments with Plant Hybrids" ("Versuch über Pflanzenhybriden" in German). He published this historical paper in the local magazine, the Natural Science Society at Bruno (Mendel 1970). These conclusions are now known as Mendel's Laws, which are the foundation of modern genetics.

However, not until 1900 did Mendel's work come to light! Only then, 34 years after the publication of his original paper, did he receive the universal acclaim.

Mendel had conclusively disproved the "blood" theory of heredity, which implied that the characteristics of parents are blended in their offspring. Even, Charles Darwin, however, believed that heredity was transmitted by the blood. Fortunately, Darwin's work in the theory of evolution was to prove more lasting (Darwin 1858). The publication of his book, entitled "The Origin of Species" introduced the idea of "the survival of the fittest." Darwin had tentatively speculated on the basis of his observations during the circum-voyage on the Beagle during 1831-36 that species evolved only by natural selection and mutation. Despite this, the French Lamarckists continued to believe in the inheritance of acquired characteristics after being born. According to them, the giraffe had grown its long neck as a result of generations continually stretching for eating high leaves. But the Lamarck's theory was conclusively disproved in the 1890s by the German biologist, August Weismann, who must have been deeply impressed by nursery rhymes in his childhood: Evoking scenes from "Three Blind Mice", he conducted experiments in which he amputated the tails of mice for several generations. Despite this grim practice, the mice's tails neither disappeared nor became shorter.

Concerning other persistent myth, the blood theory, was finally laid to rest by Darwin's cousin Francis Galton: In another series of unfeeling but apparently vital experiments, he transfused blood from white rabbits into black rabbits. The rabbits might be expected to be turned green in color, but in fact the transfusions had no effect. After the black rabbits were well enough to resume their normal activities, it was found that none of their numerous progenies had white fur. It is certain that heredity is transmitted by neither blood, nor natural selection and/or mutation, but only genes.

In his book in 1859, Charles Darwin himself could not have explained rationally what happened to hereditary characteristics, to be inherited from generation to generation by natural selection as well as mutation: In fact, they still remained a mystery in life: August Weismann and Francis Galton had conclusively demonstrated that what happened at the cell level, but Charles Darwin merely proposed unrealistic hypotheses, which were no relevant to genes at all.

Meanwhile, advances had been made in a field which appeared to have little relevance to genetics. In 1869, the 24 years old Swiss biochemist, Fredrich Miescher was researching at Tübingen into the composition of white blood cells. By adding these cells hydrochloric acid solution, he was able to obtain pure nuclei, and then by adding the solution alkali, he got acid. In the process, he obtained a gray precipitate being quite different from any previously known

organic substance, "nuclein"-since it was part of the nucleus. This is we now know as DNA (deoxyribonucleic acid).

Ten years later, the German pioneer of cell structure research, Walther Flemming, began using the newly discovered aniline dyes to stain the nuclei of cells. He discovered that these dyes imparted color to a bandlike structure within the nucleus, named "chromatin". Then, it was realized that chromatin is the same as nuclein, chromosome and/or DNA after all. In fact, DNA is the same what makes up the genes discovered by Mendel.

As early as 1870s, the Germa biologist Oskar Hertwig had made an important discovery while studying sea urchins under the newly developed light microscope. During fertilization the sperm penetrated the egg, and the nuclei of the sperm fused with that of the egg. On one hand, the Belgian embryologist, Edouard van Beneden found that the sperm and the egg both contributed the same number of chromosomes in the fertilization process. He also discovered that there is a constant number of chromosomes per cell, which varies according to the species. For example, the human cell contains a total of 46 chromosomes.

But if the nuclei of the sperm and that of the egg both contained equal number of chromosomes, and both contributed to equal number chromosomes, it was expected initially that the number of chromosomes should be doubled during fertilization. Beneden, however, confirmed that this did not happen actually. Instead of the chromosome number being doubled, the characteristic number for each of the species is sustained the same. This process, by which the number of chromosomes halves in the germ cells (formed by the sperm and the egg), Beneden named "meiosis," in Greek, or "to decrease" in English. Meiosis was eventually explained by Fleming, who noticed that instead of merging directly, the two chromosomes split lengthwise into two identical halves. These scattered through the cell, and then one half of the first chromosome merged with the other half of the second chromosome, while the rest half of the first chromosome merged with the rest half of the second chromosome. Here, at cell level, was a process which posed an uncanny resemblance to the splitting of genes described by Mendel.

During the early years of the twentieth century, the American experimenter Thomas Hunt Morgan became aware of this resemblance. He undertook an exhaustive series of experiments breeding fruit flies. These flies have a life cycle of just fourteen days, allowing for rapid statistical work. Despite encountering discrepancies with Mendel's findings, which were nothing to do with Mendel's occasional fudging, Morgan was eventually convinced that Mendel had been on the right track.

Extending Mendel's work on genes, Morgan showed that *Drosophila* had four groups of linked genes. The fact that some genes frequently remained together from generation to generation suggested a characteristic linking mechanism. Morgan found that they could only be joined together on chromosomes. As there were four groups of genes, he concluded that *Drosophila* had four chromosomes. The assortment of *Drosophila* characters did not follow Mendel's laws. This could be accounted for by the splitting and recombining of chromosomes observed already by Flemming. The splitting allowed some genes on the same chromosome to reassort, whereas other remained linked. Their normal time is meant that genes at a greater distance from one another on the chromosome were more likely to reassort. And the higher the frequency of reassortment, the further apart the genes. Morgan realized that genes could be mapped.

In 1911, Morgan produced the first chromosome map, indicating the relative location of five sex-linked genes. Just over a decade later, he had extended this map to include the relative positions of over 2000 genes on *Drosophila*'s four chromosomes. They began to move faster when one of Morgan's students discovered a method of increasing the mutation rate of *Drosophila*. Hermann Müller discovered that when the flies were irradiated with X-rays, they produced mutations at 150 times their normal rate. They also produced mutations which didn't occur in nature. Weird hybrids with deformed wings and misshapen sexual organs began to appear. This led Müller to conclude that X-ray caused a reaction between chemicals in the genes. Discoveries in this field were those of life itself or intelligent design due to the superintendent of universe, say the God. They revealed how it passed from generation to generation, and how it changed. These discoveries had no relevance to the evolution theory proposed by Charles Darwin in principle. That is, in heredity natural selection contributes only to minor change during the growth of fauna and flora, while mutation must be controlled entirely by the replication mechanism for DNA.

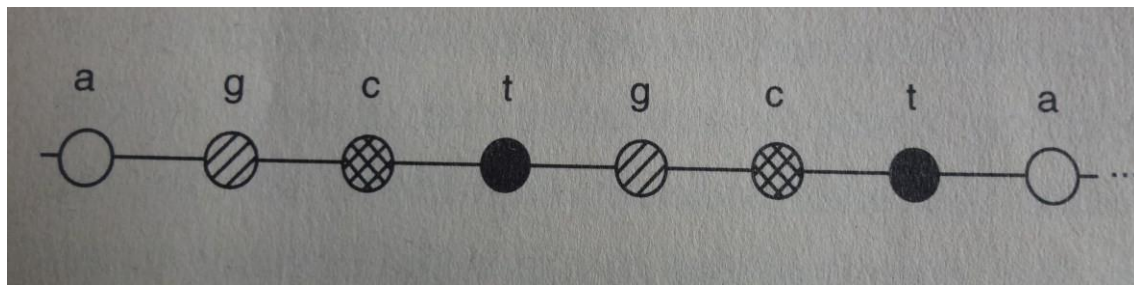
At that stage, the possibility of isolating the gene remained remote: All those scientists could observe were only the faint dim shadow of the chromosome. However, Müller's demonstration of how to increase mutation meant that the gene's properties could now be extensively analyzed. Heredity was transformed by chemical reaction, and the gene-bearing chromosome was found to contain a number of different proteins and nucleic acids. Either one, or a combination of these, was evidently the carrier of genetic information. The proteins were the obvious choice, as they had a more diverse structure, and thus appeared capable of carrying more information.

But this conjecture was disproved as a result of experiments carried out by two bacteriologists working on either side of the Atlantic. Back in the 1920s in London, Fred Griffiths had carried out experiments on pneumococci, the bacteria which causes pneumonia. Under the microscope, the surface of a colony of pneumococci cells appeared shiny and smooth when they were infectious, but when they were noninfectious the surface of the colony appeared rough. If the smooth infectious pneumococci were heated, they were killed, becoming rough and noninfectious.

When Griffiths injected mice with either noninfectious rough cells or noninfectious heat-killed smooth cells, the mice naturally remained unaffected. But if he injected the mice with living rough cells and heat-killed smooth cells, the mice were infected. When he examined these mice, he found that they contained infectious smooth cells. These had evidently reconstituted from a mixture of the two injected cells. Something in the dead cells had caused this transformation in the living ones. A nonliving constituent of the smooth cells was evidently capable of combining with element of the rough cells. It was inherited by the next generation of cells. Curiously enough, some nonliving chemical had transferred and altered the living gene.

On the other hand, in New York, USA, bacteriologist, Oswald Avery working at the Rockefeller Institute, set about trying to isolate the transformer. By 1944, he had shown that it was deoxyribonucleic acid, known as DNA.

By this stage, considerable progress had been made on the analysis of DNA. The Russian-born chemist P.A.T. Levene had shown that DNA contained four bases: adenine, thymine, guanine and cytosine. These were arranged in varying order along a linking structure, carrying equal amounts of the four bases, as shown in Fig.6, but their detailed structure was not known at all in those days.



**Fig. 6: Four bases, viz. a(adenine), t(thymine) g(guanine), and c(cytosine)in DNA arranged in varying order along a linking structure.**

Proteins in the chromosomes were the carriers of genetic information. This view has been exploded by the findings of his colleague Avery, which identified DNA as the transformer. Further analysis by Levene revealed that the nucleic acids had a much more complex structure, than had originally been thought. DNA had a "backbone" consisting of sugar molecules (deoxyribose), linked by a bond of phosphodiester. Attached to each sugar molecule was one of the four bases. Such a molecule was very large, and was evidently capable of carrying genetic information.

At nearby Columbia University in New York, the Czech chemist, Erwin Chargaff immediately embarked upon the study of DNA further. Using quantitative analysis, he discovered that different species each appeared to have their own characteristic DNA. Using the latest purification techniques, he managed to isolate the four nitrogenous bases: adenine, thymine, guanine and cytosine. By the early 1950s, he had found that contrary to previous belief, these four bases were not in fact precisely equal. Representing the bases as

A, T, G, and C, he found that:  
 $A+G=T+C$ , (1) and that:  
 $A=T$  and  $G=C$  (2)

It is known now that relations (1) and (2) are "Chargaff's rules", which are essential in the analysis of DNA.

However, the fundamental question about DNA still remained. How did this "transforming principle" actually work? In other words, how was the genetic information carried and conveyed? This was ultimate secret contained in DNA: The secret of life itself, and how it passed on from one generation to the next. To understand this question, it is necessary to unlock the detailed structure of DNA.

### **UNLOCKING TO SECRET OF LIFE**

Francis Crick was born in Northampton in 1916, the son of a local shoe factory owner. He won a scholarship to Mill Hill, a small public school in the suburbs of London, and afterward studied at University College, London. Here he was taught the great scientific advances which had been taken place at the turn of the century.

Filled with belief in his own abilities, Crick applied to do research and was quickly allotted a task appropriate to the prevailing view of his character and abilities. After the war, Crick prepared to return to his research. In 1946, he attended a lecture by the American Linus Pauling, generally recognized as the finest chemist of the century. This awakened Crick to the possibilities of

chemical research. Around the same time, he also read *What Is Life?* (Schrödinger 1944), which was written by the Austrian physicist, Erwin Schrödinger, one of the founders of quantum mechanics. This book suggested how physics, most notably quantum mechanics, was applicable directly to genetics in order to clarify mysteries of life.

Organic molecules, the chemistry of genetics, quantum mechanics-this heady cocktail of research possibilities soon replaced the old theory of evolution due to Charles Darwin et al about 100 years ago. In 1947, Crick registered for research in Cambridge. Here he set about acquainting himself with the biological side of biological physics. Two years later, he was moved on by the Cambridge Medical Research Council Unit at the world-famous Cavendish physics laboratory. Thus, at the somewhat mature age of 33 years old, Crick began his first real research work. A couple of years later, a young American called James Watson arrived at Cavendish. He had been born in 1928 in Chicago. At the age of fifteen, Watson was enrolled at the University of Chicago to study zoology. He wasn't keen on this subject, but his real interest was in ornithology.

At the age of nineteen, Watson graduated and went on to the University of Indiana at Bloomington. Here he was affected by two crucial events: He also read Schrödinger's *What Is Life?* This book had a profound effect to his research. The young genius, Watson acquainted with the gene for the first time, and he knew at once that this was his very subject. The second influential event in Watson's life at this point was studying with the microbiologist Salvador Luria, who had fled to America from Mussolini's Italy. Luria was a founder of the Phage Group, consisting of leading geneticists investigating self-replication at the viral level. Viruses were thought to be a kind of naked gene, and the simplest viruses are bacteriophages. Luria was making important advances in this field, using X-ray irradiation.

Schrödinger had shown Watson the direction of his research, while Luria showed him how to go about it. Watson launched into a doctoral thesis on phages, with Luria as his supervisor. Watson followed his mentor's advice with enthusiasm and embarked on a go-it-yourself chemistry course. In 1950, Watson received a fellowship from the Merck Foundation, to study bacterial metabolism in Copenhagen under the supervision of the biochemist Herman Kalckar. On an icy spring day in Copenhagen, the emotionally unbalanced biochemist and his non-chemist assistant set off for the sunny Mediterranean. This seaside break at the Merck Foundation's expense was to prove the most fortuitous inspiration of Watson's scientific life. Here, Watson met the thirty-three-year-old New Zealander Maurice Wilkins, who was based at King's College, London. Wilkins had been a high-flying physicist, and during war had worked in California on the Manhattan Project, which created the first atomic bomb. The result had left him disillusioned with physics, and so after the war he had become interested in molecular biology. On returning to Britain, Wilkins had joined the Medical Research Council's biophysics unit at King's College. Here, he had begun taking X-ray diffraction pictures of DNA. He had even brought one of these with him to Naples, and he showed it to Watson. Wilkin's photo depicted a somewhat blurred geometric pattern, whose significance had to be pointed out by him to Watson. In a flash like a thunder storm, Watson got to understand that this was exactly what he had been looking for, for this must be the only way to discover the detailed structure of DNA. Despite knowing even less about X-ray diffraction than he did about chemistry, Watson bravely wrote to the Merck Foundation demanding a transfer to the Cavendish Laboratory in Cambridge, where the Medical Research Council had another X-ray diffraction unit. With the megalomaniac vision of youth, Watson had now seen precisely what he wanted to do! He had strong confidence that he could unlock the secret of life designed by the God, by discovering the structure of DNA. This was



Watson's ambition in pure and simple. A few days after his twenty-third birthday the quiet, seemingly shy young Watson entered the Cavendish Laboratory in Cambridge.

It wasn't long before that he met up with the owner of the famous laugh. The rapport with the thirty-five-years-old crick was instantaneous. Crick appeared equally impressed by Watson. Cavendish in Cambridge, along with King's College in London, were cutting edge of X-ray diffraction. Cavendish had already once changed the face of science. Several decades earlier Ernest Rutherford (1871-1937), a pioneering researcher in both atomic and nuclear physics, the greatest experimentalist since Michael Faraday (1791-1867), and his colleagues had founded nuclear physics, bringing this new science to fruition with a miraculous burst of creativity at Cavendish during the 1930s. Now it was the turn of molecular biology largely due to X-ray crystallography, which was the technique that had enabled human vision to extend beyond the range of light: No matter how powerful a microscope is constructed, it can only see objects larger than the wavelength of light, while X-rays are a form of electromagnetic radiation having a wavelength of 5,000 to 10,000 times shorter than the wavelength of light, which itself has a wavelength of  $10^{-4}$  cm. This makes the wavelength of X-rays comparable in size to the distance between atoms in crystals! The principle why X-ray diffraction can reveal the structure of crystal may be described in such a way that once a fine beam of X-rays is passed through a crystal, the beam is diffracted by the atoms in the crystal, and thus shows a complex pattern depending on the structures. In turn, by examining the photograph for the diffraction pattern, we can know the structure to some extent at least. This process may appear relatively simple at the first glance, but in fact it involves a host of excruciating exact and sophisticated techniques. These involve such tasks as positioning, refining and isolating the individual crystals, as well as attempting the deduction of highly complex molecular structures from dim patterns.

The X-ray crystallography unit at Cavendish was led by the Viennese-born biologist Max Perutz, who had left Austria in 1936. For several years Perutz's formidable experimental abilities assisted by Bragg's equally formidable theoretical skills, had been devoted to determining the structure of hemoglobin, the protein of red blood cells. By 1951, they were at last beginning to achieve some success.

But Perutz and his team were not the only ones interested in the structure of hemoglobin. The fifty-years-old master Linus Pauling was also trying to work out the structure of complex biomolecules including hemoglobin. Working from his base at Cal-Tech, he had already deduced a model structure for proteins involving a helix-a spiral of molecules much like a corkscrew! He suggested that this might be the form of DNA. In 1951, working from old pre-war X-ray diffraction plates, he went to publish a suggested structure of DNA, involving three coiled helices. At Cavendish, Crick and Watson studied Pauling's suggestion, but remained unconvinced.

Meanwhile things were also progressing at Wilkin's X-ray crystallography unit in King's Collage, London. Unlike our two free spirits, Crick and Watson at Cavendish, this was where the actual work on DNA was supposed to be going on: Cavendish and King's had a gentlemen's agreement in such a way that protein was Perutz's ball, whereas DNA was Wilkin's. Non the less Crick and Watson were far interested in DNA by now to worry about sustaining the agreement as ordinary people.

In King's College, Wilkins had by this stage been joined by the twenty-nine-years-old Rosalind Franklin, who had just completed four years of X-ray diffraction work in Paris, and was very much state-of-the-art in the new field. Franklin's arrival should have been a lucky stroke for Wilkins.

When much of the water was withdrawn from DNA, its structure exhibited orderly, repetitive, quasi-crystalline qualities, which proved amenable to X-ray crystallography. This water-reduced form was known as "A-form" DNA, and was the sort initially used at King's College, London. Franklin had made significant progress by November 1951. She had worked out a new method of reintroducing water to the A-form DNA. After rehydration the structure of the DNA was transformed. The differences showed up in X-ray diffraction patterns.



**Fig. 7: DNA picture, blurred resembling a film of a spinning four-blade propeller, taken by Frankline in 1951.**

Franklin had managed to obtain some of the best pictures so far. Fig.7 is one of her best pictures, but it is too blurred to identify the detailed structure of DNA. Because these remained very blurred, resembling a film of a spinning four-blade propeller, she could not find whether DNA is straight or helical. However, after measuring the angles and patterns that could be deduced from the photographic plates, Franklin began a mathematical analysis of her results. Then Franklin decided to make public her findings at a seminar in King's. There Watson learned that Franklin's results seemed to confirm that DNA was helical. In her view, DNA consisted of anything from two or four interlaced helical chains, where each helix had a phosphate-sugar backbone, with attached bases, adenine, thymine, guanine and cytosine, much as Levene had suggested. But importantly,

it looked as if the bases were attached to the inside of helix, forming links between the helical chains.

As part of his new regime of thinking about DNA, eventually Crick became deeply involved in a conversation with John Griffiths, a young mathematics postgraduate. John happened to be a nephew of Fred Griffiths, whose 1920s experiments on rough and smooth pneumococci had inspired Avery to prove DNA the genetic carrier. This link was not entirely coincidental: John Griffiths had a hunch that certain problems of DNA could best be resolved by mathematics, and had already done a few preliminary calculations using known data about the four bases. As ever, Crick was soon discussing the fundamental problems in the structure of DNA with John. Crick believed that any structure for DNA should account for or at least allow for replication—the process by which it passed on its genetic information with no end. In fact, Crick imagined that this must somehow involve the coded sequence of four bases, which now seemed to be stacked on the inside of entwined helices. John Griffiths immediately passed on to Crick some result of calculations that he had done concerning the four bases—adenine(A), thymine(T), guanine(G), and cytosine(C). John Griffiths had worked out which of the bases were attracted to one another in a way A is attracted T while G is attracted C. In a spark of supreme inspiration, Crick saw that this could be the crucial point to DNA's replication. Crick suddenly imagined after the helical strands parted, they must become the templates for the formation of complementary strands precisely similar to the ones from which they had parted. This was indeed a giant leap of the imagination on Crick's behalf. Another bonus of John Griffiths' base attracting combination was that it at once accounted for Chargaff's rules (1) and (2). At King's, Franklin had made spectacular advances in X-ray diffraction technique, and these now convinced her that DNA was not a helical structure after all! On one hand, at Cavendish, Watson now completed his work on TMV (tobacco mosaic virus), one of the main components of which was nucleic acid. In fact, its nucleic acid content was a variant on DNA called RNA that could provide a vital clue to DNA.

Despite Franklin's bombshell, Watson went on insisting that DNA must be helical, based on the X-ray diffraction pictures taken by Franklin herself. One glance on her X-ray diffraction pictures, Crick had realized that Franklin's non-helical theory rested on her misinterpretation, for though the pictures did not certainly show the radial symmetry necessary for helices, this was merely due to overlapping patterns of crystals. At this moment, Crick's was a brilliant and daring conjecture—which had the added advantage of agreement with what he thought was the case exactly!

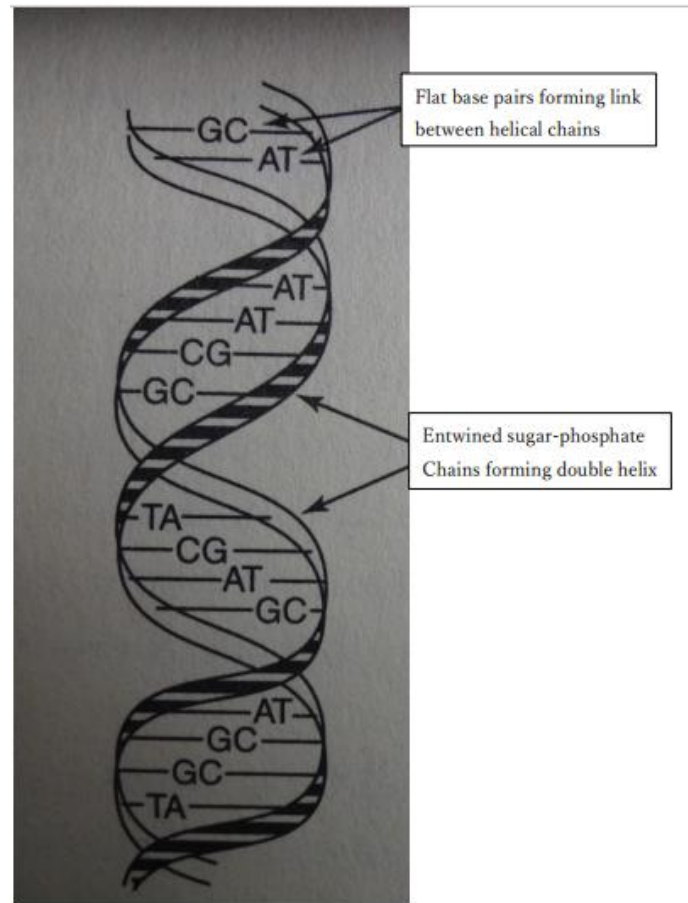
Other opinions were not so easily dispensed with, however. In July 1952 Chargaff himself arrived in Cambridge. Crick and Watson badgered John Kendrew, Perutz's brilliant assistant, into arranging a meeting with Chargaff. In the autumn of 1952, Watson became friend with Linus Pauling's son Peter, who had arrived at Cavendish to do postgraduate research. Peter Pauling was invited to share Watson and Crick's office, and was soon enthusiastically joining in their conversations.

One day, Peter Pauling informed Crick and Watson that he had received a letter from his father, who would put together a paper outlining its structure, and had promised to send Peter an advance copy. Peter Pauling duly received a copy of his father's paper. After reading it, he passed it on to Crick and Watson. They read that Peter's father had come up with a structure containing three helically entwined chains with the sugar phosphate backbone outside the coil. This was uncannily similar to the one which Crick and Watson had shown to Franklin and Wilkins on their disastrous day trip to Cambridge—except that Pauling had paid a little more attention to work out

the details, and matching these to X-ray evidences. With the obstinacy of youth, Watson settled down to check the precise details of Linus Pauling's structure-the chemical bonds, the figures, the location of key atoms. Unbelievably, Pauling had omitted to give the phosphate groups, which formed the links in each chain, and any ionization as well. This meant there was no electric charge to hold together the long thin chains. Without these they would simply unravel and fall apart. Worse still, without this ionization the model which Linus Pauling had proposed for this nucleic acid wasn't even an acid. After telling anyone in Cambridge who would listen, Watson set off on the train to London. Though Franklin remained Watson that there wasn't the slightest evidence to support a helical structure for DNA, Wilkins went to so far as to show Watson some of Franklin's latest X-ray work. This was truly amazing for Watson. Franklin managed to obtain X-ray diffraction pictures of an entirely new form of DNA. This B-form, as it became known, occurred when the DNA molecules were surrounded by large amounts of water. This resulted in X-ray diffraction patterns of astonishing clarity and simplicity. In Watson's view, it was unbelievable that Franklin was still sticking to her non-helical theory, for the A- form DNA evidence was ambiguous, but this new B-form left no doubt whatsoever. In fact, the amazing clarity pointed to even more exciting conclusions. Sitting in the freezing railway carriage on the return journey to Cambridge, Watson excitedly began making sketches and calculations on a blank at the edge of his ragged newspaper. By the time, he went to bed that night, he had reached a novel conclusion that DNA consisted of two interwoven helical strands, which has been believed as one of the most important secrets among the God's creations in ever known.

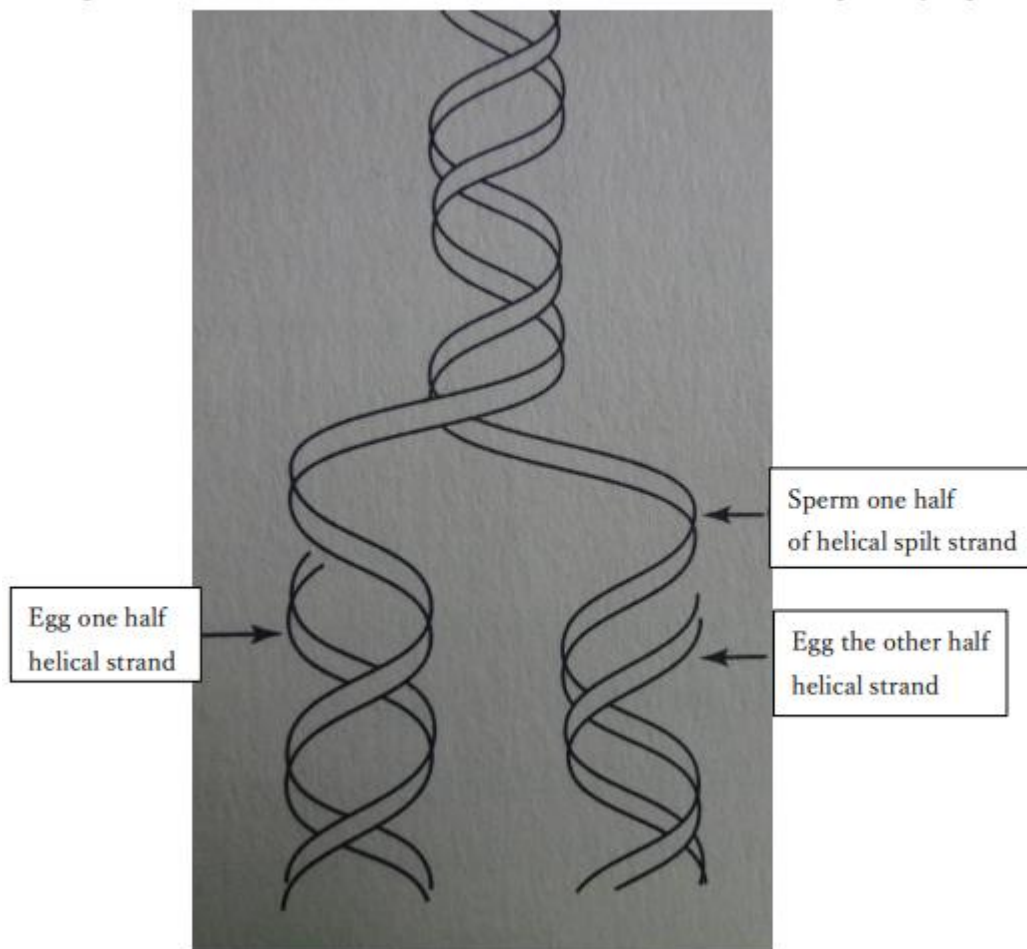
### **STRUCTURES OF DNA**

Next morning, the machine shop downstairs at Cavendish was put into immediate production of metal plate, in shape and scale-size corresponding to the four bases. In no time, Crick and Watson set about building up a scale model, fitting together the intricate structure of two interlinking helical chains of molecules unlocked by themselves just yesterday. Fig. 8 depicts a brief sketch of the DNA molecule proposed by Watson and Crick in 1953.



**Fig. 8: A sketch of the DNA molecule proposed by Watson and Crick in 1953. This resembles a spiral staircase with the base pairs AT and GC forming the steps.**

Fig.9 is a brief sketch for explaining DNA replication mechanism, which was clarified by Watson and Crick 1953. Everything had to be built up from the basic building blocks of the known chemical contents of the complex DNA molecule. The size of each of the individual molecules which combined to form this complex molecule, and the lengths and angles of helical bonds between them, all had to be taken into account as precisely as possible.



**Fig. 9a: DNA replication mechanism, which was clarified by Watson and Crick 1953.**

An idea of the sheer mind-boggling complexity of this task is given by the following analogy: Imagine a couple of combs, both two meters in length, with uneven teeth sticking out at odd angles. These combs must both be twisted into corkscrews, and then intertwined, so that each tooth on one comb meets up with the complimentary tooth of the other comb. But before even beginning, it is necessary to calculate the exact length, position and angle of each individual tooth of each comb. Fig.10 shows the three geometrical data for DNA acquired from the pictures taken by Frankline (Sayre 2000).

An idea of the scale involved is given by the fact that the combined coiled width of the two combs is ca.1.6 nanometer, where one nanometer is  $10^{-9}$  meters, in other words one billionth part of a meter.

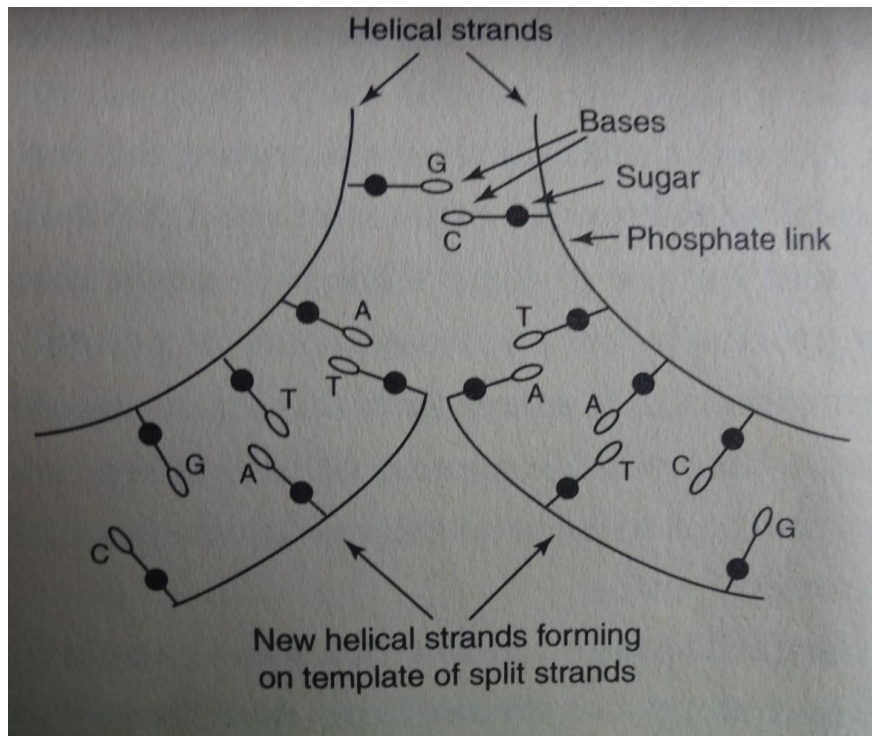


Fig. 9b: DNA replication mechanism with detailed explanation. After Strathern (1997)

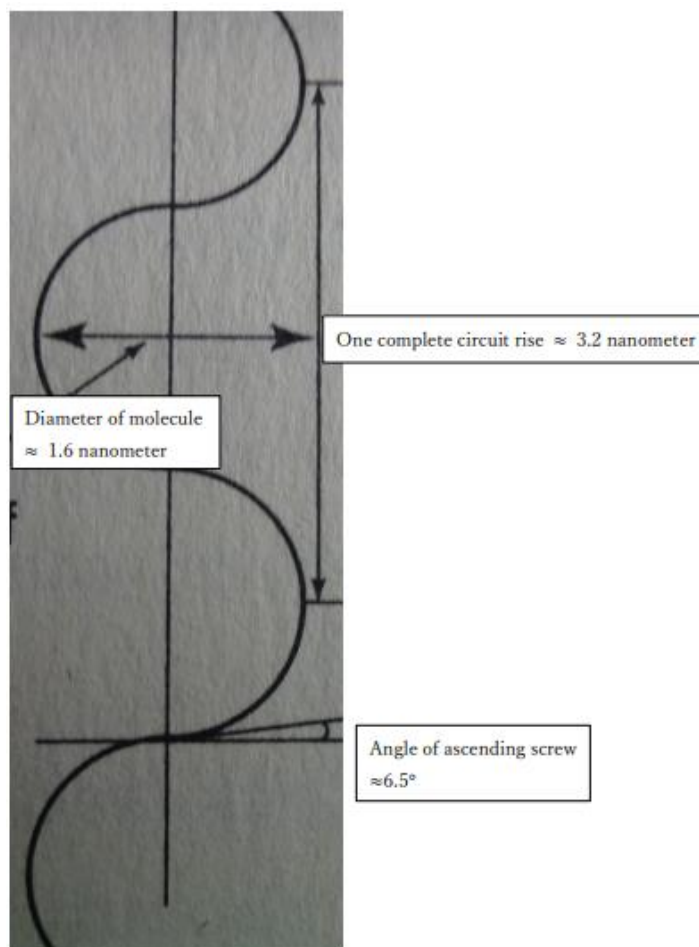


Fig. 10: Three geometrical data for structure of DNA, gained from X-ray diffraction pictures by Franklin et al. After Strathern (1999)



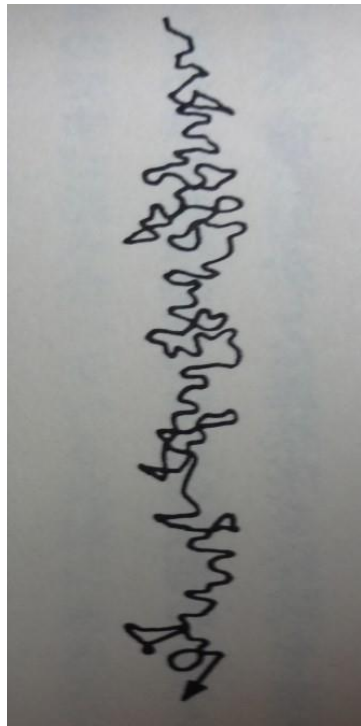
Crick and Watson had already put considerable thought into these matters. But other features had to be accommodated naturally too. An important another factor was the precise twist of each helical chain of molecules-whether it was coiled closely like a spring, or more openly like a spiral staircase. Watson had surmised from Frankline's X-ray diffraction pictures of B-form DNA that the structure was a double helix, but her data also provided a few even more essential clues. For instance, it was possible to gauge from the patterns on the X-ray plates, the exact diameter of the molecule is ca. 1.6 nanometers. The angle of the ascending "screws" of the helices and how far they rose in a complete "circuit" could also be calculated with a much greater degree of certainty.

The bases had to be on the inside, though each base had a molecular formula which allowed for two different molecular structures-the enol form and the keto form. After trial and error in many times, Watson finally discovered that only when the keto-form base pairs joined A-T and G-C, just as Griffiths had suggested, they did fit inside the chain. And this meant that either pair could occur anywhere in the chain, thus allowing for a vast permutation of pairs. At last, they'd discovered the key to the structure of DNA. On March 7, 1953, just five weeks after they had started building, Crick and Watson proudly unveiled their model to their colleagues at Cavendish. On April 25, 1953, Watson and Crick published a paper in *Nature*, entitled "Molecular Structure of Nucleic Acids." In just nine hundred words with a simple diagram. Some scientists were to be less charitable about Crick and Watson's unscrupulous use of material from King's X-ray diffraction unit. According to their view, Crick and Watson had no right to claim for themselves the credit for this momentous discovery. In fact, such views were taken into account by the Nobel Committee. In 1962, the Nobel Prize for Medicine was awarded jointly to Crick, Watson and Wilkins, but Rosalind Franklin had died of cancer four years previously at the age of thirty-seven sadly. To emphasize the joint nature of DNA's discovery, and the assistance given to Crick and Watson by colleagues at Cavendish, the Nobel Prize for Chemistry in the same year was awarded to the head of the Cavendish X-ray diffraction unit, Max Perutz and his colleague John Kendrew.

### DISCUSSION

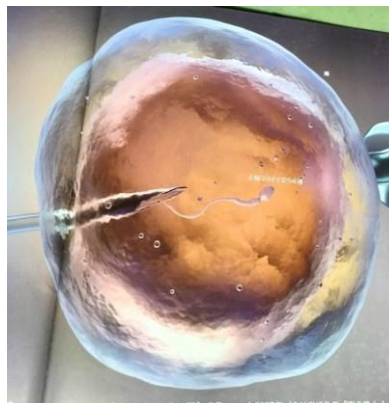
It is not sufficient for us to bring our offspring even if we have accepted how genes are transmitted from generation to generation: At start, either male or female at least must arise his/her sexual desire. Then, they must do the sexual intercourse successfully in such a way the sperms and eggs may be ejaculated timely, and so are mixed each other properly to form a matching pair. This makes an egg being released one per month possible to fertilize a sperm among many candidates, say several hundred million per ejaculation. But it is said that 99 % of those sperms would die before arriving at ovary through fallopian tube. At this stage, neither the female nor the male is possible to choose its respective opponent, but is obliged to leave the final decision to the God! It seems to be strange that though the God provides us the sexual desire, but does not give us the right of final decision to choose the opponent when we fertilize with each other. That is, the God must not provide us full of freedom to get offspring, but only its portion, say 5%.





**Fig. 11: Random walk of mist particles in the air, where the direction of the gravity is vertically downwards.**

The falling velocity of each the particle may depend on viscosity of the air, scale and specific weight of the particle, temperature distribution, and/or air turbulence.



**Fig.12: Microscope-fertilization.**

One sperm is injected into the egg while observing with a microscope, where it is injected through the needle tube from left into the egg, so the sperm is swimming in the center of egg held firmly by the pipet on the right. After Itakura (2023).

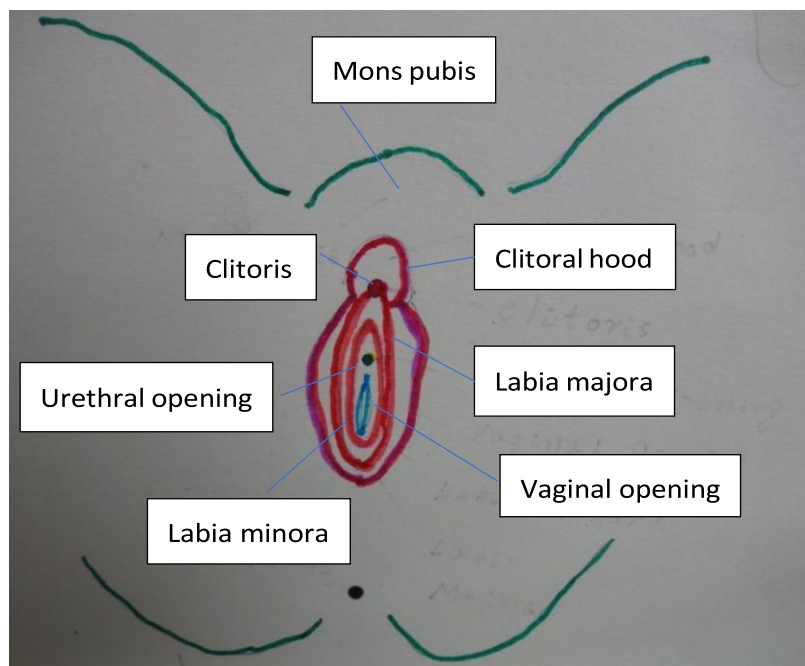
In this connection, it may be worth noting to remember such a belief that the God had created human beings by expecting us becoming like the God with clear intention, but left us a certain freedom for activity how we should live on the earth.

This might even make us difficult to some extent, for the God had created us almost perfect but with original sin, which has been known over 2000 years as the famous story in the old Bible concerning the illicit love between the chief angel, Lucifer and the first God's daughter Eva, and

the subsequent illicit love between Eva and the first God's son Adam at the garden of Eden. Christians may believe that we are equipped with the original sin, for we are considered to be descendants of Adam and Eva. However, it may be no question we are saved from original sin or evil heart.

However, it is realized that ca. 5% freedom given by the God is an essential factor of our life, for it would make our life worth living if it is used properly: It is because that our daily study, training, education, and/or research effort would make possible to overcome the evil heart due to the original sin, for example. Hence, it may be the ultimate goal of our life that we could overcome the original sin in terms of ca. 5% freedom given by the God. It may be evident that if the God have created us perfect, we must have nothing to do in our life, so we all might be boring and so we are even not worth living.

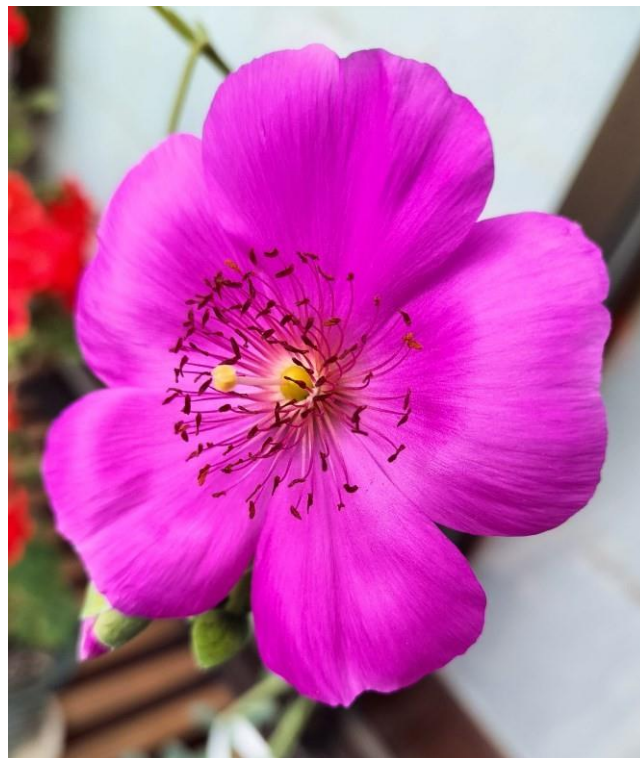
Before finishing the present discussion, we may be worth seeking for the reason why the God had provided us sense of the sexual desire to every opposite sex rather than a single beloved opponent. This is an essential issue that must be solved, for so-called the adultery is mainly caused by such a sexual desire: We cannot often control the evil mind longing for an adultery properly. In the peace time, family would be sometime broken up owing to the adultery, whereas in the war time, many women would be raped by the enemies. It is worth noting here that apart from human beings, there remains a question whether each couple of animals and/or plants fertilize after considering or scrutinizing the opponent or not. For example, has any stamen the right to choose or reject the opponent stigma, and vice versa? If not, how could the God control the rate of their fertilization properly for each of species?



**Fig.13: A sketch of the vagina anatomy for female.**

Fig.13 depicts a detailed drawing of the vagina for female. Now let us consider why the God have brought in an ultimate pleasure to the couple during sexual intercourse, for without such a magical pleasure it might not be possible for our human kingdom to survive until the present time since dawn of our history over the last 3.8 billion years on the earth.

As far as the present author is aware of, a male may be sometimes attracted by a female, and vice versa. Upon encountering to such a counter sex, and if either the female or a male feels affirmative impression, she/he seems to get certain effect on her/his sexual organ. More directly, referring to Fig.13, as soon as she takes off her clothes and show her naked body, his penis erects naturally preparing to insert it into her vaginal opening. While, her vagina may react in such a way that some viscous liquid would be oozed out and the inside surface may be covered with it entirely, if she gets affirmative feeling against him in particular. At the same time, her labia minora as well as labia majora might be uncovered to show him the vaginal opening clearly. In addition, her clitoris at the mins pubis that is located just above the urethral opening, swells shining in a pink after the clitoral hood is uncovered. In the whole processes to finish up their intercourse successfully, various delicate senses such as sight, touch, pain, hearing, and/or smell might take part in, and play the important role in enhancing our holly activities, which must be designed by the God undoubtedly.



**Fig. 14: Andes pine needle peony to explain how flower fertilizes offspring.**

Fig.14 is an Andes pine needle peony to explain how flower fertilizes offspring., but it equips the same function as human being essentially: In the center, stigma, being surrounded by many stamens, for example. It is realized that the exactly same tactics are used by the flower to bring out seeds, or offspring. This suggests us immediately that both of human being and flower have been designed by the God, for if not it is unlikely that these tactics are common.

Considering these complex but extremely elegant designs to transfer the inheritance information from generation to generation unlimitedly, there is no question to think such a great work could be done only by the God, who is superintendent of the universe.

## **CONCLUDING REMARKS**

In this section, new findings and insights that have been obtained through the present study are summarized.

There may be no question to consider that DNA is designed and created by the God in order to duplicate each of our lives, together with fauna and flora. Over 3.8 billion years, a number of kingdoms for creatures had appeared spontaneously from time to time owing to the God's designs. Accordingly, any type of individual for each kingdom had been formed by the duplication process of DNA, but not by the natural selection and mutation.

Darwin's theory of evolution must, therefore, be abandoned completely, for this is only useful for considering some minor change and/or modification appearing by training or practice after offspring.

As the result of the discovery of the structure of DNA by Watson and Crick, we human beings know how to play the role of the God in constructing the DNA structure for any type of individual in principle: Perhaps sooner than we think, we might be able to do this. For example, we could certainly eliminate a few diseases. Also, we could produce exceptional individuals- another Newton say, a Picasso, a Curie, a Hawking, or the next Einstein. Then, once we can make one, we can clone it, though individuality might cease to exist. It is suggested that an important task of scientists is to disclose the secret of life created by the God, who is the designer for all of livings existed in the universe.

It is certain to say that the evolution theory proposed by Charles Darwin, Jean Lamarck and others, as well as the blood theory are trivial, for heredity on life is transmitted by genes in principle, but not by these theories: Adaptation to natural environment, and/or blood would result in only minor change in each creature. Of course, mutation provide us important role in life, but again its effect must appear only through the unusual change in DNA, which will be transferred through it subsequently.

Finally, all of the human beings originate in the first couple, say Adam and Eva, created by the God, so we all are sisters and brothers, for we are sharing DNA with each other to some extent. This means that we are relatives not only with all our ancestors, but also all people living at the present time as well as those appearing in future forever.

It is, therefore, evident that the initial DNA given by the God is immortal, and thus it may be possible to consider that each of us is also immortal. It is suggested that there is a great and promising hope for us to attain the world peace by realizing the holly truth concerning the concept of permanent of the initial DNA, which is common among all of us. The war among the sisters and brothers must be against the God's will, for we all have been created by divine intervention being loved equally.

## **ACKNOWLEDGEMENTS**

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## REFERENCES

- Darwin C.R. (1859) *On the Origin of Species by means of natural Selection*, J. Murray, London, Reprint of the 1976 issue of the 1968 edition published by Penguin Books, Baltimore with new introduction, pp. 459
- Itakura, R. (2023) *Graphic Science Magazine: Newton*, vol.3, 22-23(In Japanese)
- Mendel, G. (1970) *Versuch über Pflanzenhybriden*. Viewweg+Teubner Verlag, Wiesbaden, pp.112
- Olby R.C. (2012) *The Path to the Double Helix: The discovery of DNA*, Dover, Reprint Edition, pp.560
- Sayre, A. (2000) *Rosalind Franklin and DNA*. Norton, pp.221
- Schrödinger, E. (1944) *What is Life? -The Physical Aspect of the Living Cell*. Cambridge University Press, Cambridge, The Japanese Edition in 2008 (translated by S. Oka and Y. Shizume), Iwanami, Tokyo, pp. 215
- Strathern, P. (1999) *Crick, Watson, and DNA*. Anchor Books, USA, pp. 114
- Watson, J.D., Crick, F.M.C. (1953) *Molecular Structure of Nucleic Acids: A structure for deoxyribose nucleic acid*. *Nature*, 4356, 737-8



# Should Geriatric Patients Need Extra Nursing Care than Younger Adult Patients?

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## Abstract:

Geriatric patients need extra nursing care as compared to other young patients due to multiple factors related to their age. As with aging, individuals face a decline in their cognitive and physical health. This leads to make them more vulnerable to age-related complications, like dementia, frailty, and chronic disease. Consequently, due to growing to the growing complications they also required extra nursing care to handle their complications. Therefore, nurses need to have a better understanding of their disease process in relation to their frailty and age. However, besides geriatric patients, the other age group also needs extra nursing care for their worse health conditions but their prognosis as compared to elderly patients is high and with fewer complications. While geriatric patients are more prone to develop complications. Therefore, by recognizing the distinct care requirements of elderly patients, nurses should ensure comprehensive care for these vulnerable populations.

*Keywords: Geriatrics, Extra, Nursing care, Younger Adults*

## BACKGROUND

Geriatric population growth is increasing in an alarming way. The healthcare structure of most underdeveloped countries did not bear such complex care and a heavy load of elderly patients. Due to the growing rate of elderly populations, extra healthcare planning will be required for this population. As compared to young adult patients, hospitals face a high burden of geriatric patients in the emergency department (Fayyaz et al., 2013). Nursing care is compromised due to high workload and burnout. Hospitalization stay is higher in elder patients as this age is mostly associated with high dependency and co-morbidities. Studies suggested that advanced-aged patients have a high mortality rate (Heydari et al., 2019). Nursing care of admitted geriatric patients is different from that of younger patients, Extra and specialized nursing care is needed due to their low immunity, comorbidities, and lengthy stay during hospitalization (Ghimire & Dahal, 2021).

## ARGUMENTS

Multiple factors contribute to low immunity in the aged population. Declining in immune function due to age is referred to as immunosenescence. Changes occurring in human body composition with aging causes an overall lean body mass body decrease. Due to this cells contributing to immune function are also decreased (Tidball et al., 2021). In addition to human body composition, aged people did not maintain their proper diet due to changes in the permeability of their gut and decreased levels of self-related activity. As a result, the necessary energy required for the immune response did not meet. The proper nutrient supplement is important for the effective growth of immune cells in the body. Research showed that proper nutrition supplements and trace elements added to the diet of aged patients respond very well while fighting with influenza infection (Aspinall & Lang, 2018). Therefore, the aged patient is very vulnerable and highly susceptible to

infection. Nurses should keep in mind their nutrition status, low self-care activity, and immune status, while providing nursing care. Infection control measures should be taken by nurses while giving care to minimize the risk of infection in compromised immune elder patients.

Moreover, in aged people comorbidities are also high as compared to younger. Multiple comorbid like diabetes mellitus, cardiac problems, and other diseases are directly related to age. Aged people are at high risk to suffer from multiple diseases (Karlamangla et al., 2007). Nurses need to explore the full history of geriatric patients. It is very difficult for nurses to care for patients having more than one disease. Extra effort is needed to overcome comorbidities and prevent patients from other chronic health condition (O'Connor et al., 2018). Holistic care should be given by nurses to enhance the quality of geriatric patients in hospitals.

In addition, to low immunity and comorbidities, hospital premises are considered for high risk of infection, and diseases caused during a stay at the hospital are referred to as hospital-acquired infection (Sikora & Zahra, 2022). The ratio of hospitalization in older patients is high due to their low immunity, multiple comorbid, and restricted daily life activities. Hospitalization caused other complications which are not related to the present illness of the patient (Ganguli et al., 2022). All these parameters lead to a high stay of hospitalization. Which put an extra burden of nursing care on nurses.

Some scholars and researchers claim that the youngest and most critically ill children need also the highest quality of nursing care. These patients are admitted to the intensive care unit of the hospital. And require high-quality nursing intervention (Taylor & Odell, 2011). Specialized nurses having experience or specialty in critical education and skills are required for such patients. They are right but the ratio of this patient is very low as compared to geriatric patients. Geriatric patients are mostly critically ill and in high ratio due to their low immunity and multiple comorbid (Esme et al., 2019). Recovery rates are low in geriatric patients as compared to other patients. Specialized geriatric nursing education along with critical care education is needed for such nurses to take care of critically ill elder patients.

## CONCLUSION

The world is facing a growing geriatric population. Similarly, hospitals also faced a high number of elder patients. Due to their weak body function, low immunity, and multiple comorbidity geriatric patient has a low ability to fight disease. Therefore, they had a higher stay of hospitalizations. To overcome such complex patients and improve their quality of life, nurses need extra nursing care with high-quality education and skills.

## REFERENCES

- Aspinall, R., & Lang, P. O. (2018). Interventions to restore appropriate immune function in the elderly. *Immunity & Ageing*, 15(1), 1-8.
- Esme, M., Topeli, A., Yavuz, B. B., & Akova, M. (2019). Infections in the elderly critically-ill patients. *Frontiers in medicine*, 6, 118.
- Fayyaz, J., Khursheed, M., Mir, M. U., & Khan, U. (2013). Pattern of emergency department visits by elderly patients: study from a tertiary care hospital, Karachi. *BMC geriatrics*, 13, 1-7.

Ganguli, S., Howlader, S., Dey, K., Barua, S., Islam, M. N., Aquib, T. I., Partho, P. B., Chakraborty, R. R., Barua, B., & Howlader, M. D. H. (2022). Association of comorbidities with the COVID-19 severity and hospitalization: A study among the recovered individuals in Bangladesh. *International Journal of Health Sciences*, 16(4), 30.

Ghimire, K., & Dahal, R. (2021). *Geriatric Care Special Needs Assessment*.

Heydari, A., Sharifi, M., & Moghaddam, A. B. (2019). Challenges and barriers to providing care to older adult patients in the intensive care unit: a qualitative research. *Open Access Macedonian Journal of Medical Sciences*, 7(21), 3682.

Karlamangla, A., Tinetti, M., Guralnik, J., Studenski, S., Wetle, T., & Reuben, D. (2007). Comorbidity in older adults: nosology of impairment, diseases, and conditions. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 62(3), 296-300.

O'Connor, S., Deaton, C., Nolan, F., & Johnston, B. (2018). Nursing in an age of multimorbidity. *BMC nursing*, 17(1), 1-9.

Sikora, A., & Zahra, F. (2022). Nosocomial infections. In *StatPearls* [Internet]. StatPearls Publishing.

Taylor, B., & Odell, M. (2011). Nursing care for critically ill patients. In (Vol. 12, pp. 9-10): SAGE Publications Sage UK: London, England.

Tidball, J. G., Flores, I., Welc, S. S., Wehling-Henricks, M., & Ochi, E. (2021). Aging of the immune system and impaired muscle regeneration: A failure of immunomodulation of adult myogenesis. *Experimental gerontology*, 145, 111200.