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▶ Digitalization in teaching and education in the context of COVID-19: Kenya

Digitalization, the future of work and the teaching profession project

Peter L Barasa

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International Labour Office • Geneva

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▶ Abbreviations

- ▶ **GPE**   Global Partnership for Education
- ▶ **ICT**   information and communication technology
- ▶ **KICD**   Kenya Institute of Curriculum Development
- ▶ **TVET**   technical and vocational education and training
- ▶ **UNESCO**   United Nations Educational, Scientific and Cultural Organization
- ▶ **UNICEF**   United Nations Children's Fund
- ▶ **UNOCHA**   United Nations Office for the Coordination of Humanitarian Affairs
- ▶ **WHO**   World Health Organization
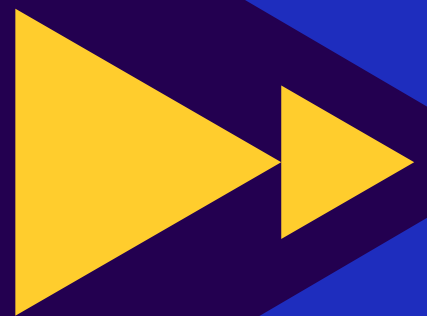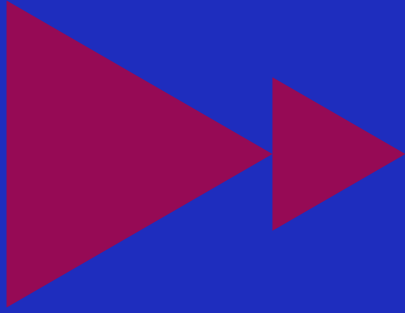
▶ 1. COVID-19 and Kenyan educational context

The World Health Organization (WHO) declared coronavirus disease 2019 (COVID-19) a public health emergency of international concern on 30 January 2020, and on 11 March 2020 recognized COVID-19 as a pandemic. The Government of Kenya announced the first case of COVID-19 on 13 March 2020 and the President, through an executive order, closed all learning institutions on 16 March 2020. The Government of Kenya established a mitigation committee at the national level, coordinated by the Cabinet Secretary of the Ministry of Health, which gave daily briefs on the state of the COVID-19 crisis in the country. Some of the measures implemented to curb the spread of the virus included social distancing, a dusk-to-dawn curfew and a ban on public gatherings. In addition to school closures, conventional after-school tutoring that a number of teachers offer privately to students in the homes of either teachers or pupils or in rented outlets was halted.

As face-to-face learning was disrupted, a shift to alternative instructional platforms, including virtual platforms, was adopted in most private schools, particularly those that use a British, French or German based school curriculum and educational programme. These schools were relatively better prepared and equipped for distance learning, given greater access to digital technology. Students in these private schools are from relatively affluent families who possess digital devices that can be used for learning from home. Despite private schools undertaking the prescribed education curriculum and programmes of the Kenya Institute of Curriculum Development (KICD) (designed for continued learning during cessation of face-to-face learning), which adopted existing technology-based remote teaching and learning approaches, little progress and success was recorded, as teachers were not adequately prepared and requisite technological competencies were lacking. Over time, both primary and secondary private schools had to halt learning as, in most cases, distance learning was not sufficient. In some instances, there was no learning at all in some private schools in some geographical regions with poor internet coverage (Human Rights Watch 2020).

Aside from religious, organizational or institutional and community-organized private schools, Kenya lacks a government-based financial support system for private schools. Despite more children attending private schools, not all private schools equally benefit financially from the government, meaning that some primarily rely on student tuition fees. This makes private schools in Kenya vulnerable to the debilitating impacts of disruptions such as the COVID-19 pandemic. As such, during the crisis, many private schools were not able to pay teachers' salaries.

Generally, Kenya's education infrastructure does not have the capacity to effectively deliver and sustain online teaching and learning, particularly for those in rural areas and also for vulnerable and marginalized students. For instance, the radio and television lessons introduced during the pandemic are not designed to meet the varied learning needs of students, especially for learners with disabilities. Despite attempts by the Government of Kenya, through KICD, to mitigate closure of schools through radio, television and online learning content, the timetables introduced were not accessible to all learners. Furthermore, the time allocated per lesson and course was inadequate to achieve the lessons' learning objectives and desired course learning outcomes. Moreover, there was poor subject distribution, and some subjects were not included in the timetable. It is difficult to assess the learning of students using these remote means, as assessment of learners undertaking their studies using these approaches has not been adopted formerly by the Ministry of Education, Science and Technology, and as some parents have been unable to supervise learning from home.

The remote and virtual learning strategies adopted in Kenya cannot guarantee achievement of educational objectives as accomplished through face-to-face teaching and learning. Substantial educational infrastructural investment needs to be made and technical training to support the entire system must be undertaken to ensure education standards are maintained and quality teaching and learning is facilitated.

▶ 2. Methodology

The findings of this report are based on a review and analysis of documents from the following sources: records of the Ministry of Education, Science and Technology; COVID-19 guidelines applicable to education; KICD COVID-19 pandemic mitigation documents; education-related legislation and policies; Kenya Gazette notices; directives of the President and the Cabinet Secretary of the Ministry of Education, Science and Technology; reports of international organizations, including the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA); and reports of the Kenya Education in Emergencies Working Group. The reports and documents were analysed to gain insights into the strategies and plans adopted by the Government of Kenya and education stakeholders to mitigate the COVID-19 pandemic, including through technology-based solutions. The impact on existing digitalization initiatives and efforts was also assessed.
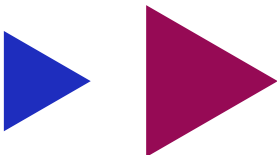
▶ 3. Education sector COVID-19 response

3.1 Immediate impact and responses

The suspension of face-to-face teaching and learning came towards the end of the school term, which was officially scheduled to conclude on 10 April 2020. This was followed by initiatives by the Government of Kenya and other education stakeholders to continue learning. Parents, for example, assumed the role of teachers, marking revision papers sent via social media platforms from schools (Human Rights Watch 2020). Many parents, however, lacked the capacity to adequately conduct these activities. Some schools, both public and private, made attempts to adopt distance learning via online platforms such as Zoom, Google Meet and Microsoft Teams. The Kenya Education Network Trust, a government web-conferencing platform, became more utilized for remote teaching and learning. KICD responded by developing lessons, particularly in the compulsory subjects of the curriculum, for the national Kenya Broadcasting Corporation radio and television services, and developed a timetable that enabled students to appropriately access these lessons. In April 2020, the United Nations High Commissioner for Refugees (UNHCR), the Media Council of Kenya and other institutions conducted a rapid mapping of coverage of mass media and e-learning platforms and access to devices with the aim of engaging existing alternative broadcasting channels to relay education and training content. The capacity of local community radio operators was enhanced to enable the broadcasting of the national curriculum to hard-to-reach populations (UNESCO 2020).

The Ministry of Education, Science and Technology assumed the overall coordination and monitoring of the education sector response and recovery efforts, with the support of development partners. A strategic COVID-19 response plan aimed at upholding access to quality, equitable and inclusive education for all was developed. The Basic Education COVID-19 Emergency Response Plan covers the time period from 1 June 2020 to 30 December 2021. It spells out short-, medium- and long-term mitigation measures in the education sector. In the short-term, it focuses on ensuring access to learning through remote, alternative and distance learning solutions. In the medium-term, it aims to assist learners that have fallen behind in their learning. In the long-term, it is designed to develop capacities to mitigate future shocks to the education system.

In existence since 2017, the Kenya Education in Emergencies Working Group is a coordination body made up of national and international non-governmental organizations, United Nations agencies and government ministries. It is co-led by the Ministry of Education, Science and Technology, Save the Children and the United Nations Children's Fund (UNICEF). It has led a range of education interventions in different counties, especially in arid and semi-arid lands and marginal areas in Kenya. In Turkana, Isiolo, Marsabit, Wajir, Kajiado, Nakuru and Nairobi counties, COVID-19 crisis response interventions have included airing radio lessons through local FM stations to increase reach and to distribute the KICD radio lessons timetable. In the lake zone and coastal counties, and in Kibera and Kayole (informal settlements in Nairobi county), activities included providing information to children about available radio programmes; back-to-school campaigns to prevent dropout; fumigation of the school compounds; and hygiene support, including handwashing guidance in school. There are an estimated 40 agencies involved in COVID-19 response efforts in Kenya (UNOCHA 2020).

The Technical and Vocational Education and Training Authority, the regulator and coordinator of the technical and vocational education and training (TVET) sector in the country, on 20 September 2019 published the open, distance and e-learning standards and quality measures that aim to set up infrastructure to deliver online learning and training. By September 2020, some public and private TVET institutions had taken up the challenge and were offering virtual training.

On 25 March 2020, the President unveiled new tax measures to ease the financial burden, including income tax relief for lower-income earners and reductions in corporate tax and value-added tax. These measures were meant to benefit taxpayers, teachers included, who were deemed to be low-income earners.

3.2 Medium-term impact and responses

The medium-term responses to the COVID-19 pandemic focused on mobilizing funds and support from education partners, including the Global Partnership for Education (GPE) (Government of Kenya 2020a). In late March 2020, the UNICEF Kenya Office was provided with a GPE grant of US$140,000 to support the Ministry of Education, Science and Technology in planning its response to the pandemic. The World Bank also granted GPE, which had made an accelerated funding request, US$11 million for the period 15 June 2020 to 31 December 2021 to assist with the pandemic response. The GPE and World Bank-funded COVID-19 Learning Continuity in Basic Education project aims to:

▶ expand access to and delivery of online content to all students in basic education through radio, television, e-cloud platforms and mobile phones;

▶ train teachers and curriculum supervision officers in distant teaching methodologies;

▶ develop an integrated monitoring and evaluation system for remote learning interventions;

▶ bring parents and caregivers on board to monitor student learning;

▶ ensure protection and safety of all learners, especially girls, during school closures;

▶ ensure a smooth transition back to school through a school meals programme;

▶ provide mentorship services for girls (including girls with special needs and disability), online psychosocial support services and communication on gender-based violence prevention for teachers, parents and students;

▶ build capacity of ministry staff to conduct virtual meetings during the COVID-19 period and beyond.

The Ministry of Education, Science and Technology, working through KICD, and Microsoft are planning to produce voice recordings of educators in science, technology, engineering and mathematics to be distributed through available technologies to promote continuous learning of the sciences. US$700,000 was assigned for this activity. KICD developed digital health literacy content in April 2020 on the 2019 coronavirus disease and a digital guide on how to access this content on the established Kenya Education Cloud (e-cloud) (UNESCO 2020).

Throughout the pandemic, the Kenya Education in Emergencies Working Group has continued supporting the airing of radio lessons in marginalized counties. By 20 October 2020, a total of 43,384 children (35,073 boys and 8,311 girls) had been reached through remote learning via radio. Out of these, 2,488 (1,295 boys and 1,193 girls) were children with special needs. As part of its work, the Working Group communicated hygiene and sanitization messages to children in Isiolo and Wajir; provided water, washing units and soap in lake zone and coastal counties; and, in refugee areas of Nairobi county, shared the KICD timetable with learners and created WhatsApp groups to share teachers' summarized lesson notes and to monitor students' progress (UNOCHA 2020). The activities managed to alleviate complete loss of learning as a result of school closures. The Ministry of Education, Science and Technology, through KICD, in June 2020, developed tools to support implementation of digital health literacy content for grades 4 to 8. COVID-19 content was also captured (UNESCO 2020).

The President of the Republic of Kenya issued a directive on 6 June 2020 on reopening the economy, including the gradual reopening of educational institutions. The Ministry of Education, Science and Technology considered reopening learning institutions after realizing that remote learning strategies were not meeting intended learning objectives. However, on 7 July 2020, the ministry announced the postponement of face-to-face learning to January 2021, though with time the ministry was advised to explore a phased reopening of schools. The ministry further committed to exploring how to make online learning accessible to all students as, according to the Kenya Education in Emergencies Working Group, the majority of learners could not continue learning once schools closed (UNOCHA 2020). National examinations for class 8 and form 4, often taken in the months of October and November, were cancelled. The decision was made due to a surge in COVID-19 cases, as it was thought that reopening schools would accelerate infection rates.

At the same time, the Kenya Private Schools Association, through its chair, petitioned the government for funding to enable it to meet its financial obligations (Githinji and Kosome 2020). The association's main

source of funding is school fees, and since schools were closed indefinitely, private schools have not been able to generate revenues to pay rent, loans, overheads and salaries for their teachers. Some private schools have already communicated to parents to transfer their children elsewhere as they will not reopen due to prolonged closure (Standard 2020).

In September 2020, the Ministry of Education, Science and Technology was allocated approximately 6 billion Kenyan shillings under the COVID-19 economic stimulus programme to address the various problems facing the public education sector. The Cabinet Secretary of the Ministry of Education, Science and Technology also sourced additional funds from the Treasury to augment these financial resources and set aside 1.6 billion Kenyan shillings for the manufacture of new desks (estimated around 257,000 desks) to support social distancing for all public primary and secondary schools. A sum of 2.1 billion Kenyan shillings was assigned to building additional classrooms and 6.5 billion Kenyan shillings was allocated to hiring more teachers and infrastructure improvement, while 1.6 billion Kenyan shillings was committed to the development of ablution blocks in secondary schools within a two-month period in preparation for the reopening of public schools. The ablution blocks are a subcomponent of infrastructural improvement under the Secondary Education Quality Improvement Programme, sponsored by the World Bank. The Ministry of Education, Science and Technology was also allocated 497.5 billion Kenyan shillings in the 2020/21 financial year budget, with 59.4 billion Kenyan shillings expected to go towards free secondary education and 12.4 billion Kenyan shillings towards free primary education (Government of Kenya 2020b). This money has partially been disbursed to schools to facilitate specific adjustments that will enable the reopening of public schools for face-to-face learning.

The COVID-19 National Education Response Committee, which was appointed on 12 May 2020 by the Ministry of Education, Science and Technology, is mandated to advise the Cabinet Secretary of the ministry on appropriate steps to be taken to restore normalcy in the basic education sector. It advised the ministry on partial school reopenings. A range of public health protocols were put in place, and both public and private schools are expected to implement these protocols in preparation for reopening and observe them once schools reopen. These protocols are outlined in the ministry's *Guidelines on Health and Safety Protocols for Reopening of Basic Education Institutions amid the COVID-19 Pandemic*. The guidelines focus on the following:

▶ class or cohort sizes to be adjusted to ensure adherence to social distancing;

▶ education institutional programmes reworked to avoid learners and trainees from gathering at one place in big numbers;

▶ use of face masks by all learners and trainees, teachers, non-teaching staff and parents, guardians and visitors at all times within the school environment;

▶ supply of adequate clean running water and liquid soap or hand sanitizers;

▶ temperature monitoring and record keeping;

▶ institutional health and hygiene practices;

▶ referral systems for the provision of mental health and psychosocial support for learners, trainees and staff members;

▶ continued learning and review of schools' daily routines;

▶ procedures for handling suspected COVID-19 cases.

The Ministry of Education, Science and Technology, in September 2020, produced a *Training Module for Staff of Learning Institutions on COVID-19 Guidelines and Health Protocols* to enable both teachers and non-teaching staff to implement health and hygiene measures prior to schools reopening as well as during school operation. It is also intended to facilitate the provision of mental and psychosocial support to learners, teachers and other education personnel, in addition to ensuring that everyone has a clear understanding of facts about the COVID-19 pandemic inside and outside schools. The module exposes teachers to alternative modes of curriculum delivery, including through the use of technology, and clearly defines the role of staff to ensure a safe and healthy learning environment. In the same month, the Ministry of Education, Science and Technology also produced the *Training Module for Learners on COVID-19 Guidelines and Health Protocols*,

the *Training Module for Basic Education Institutions' Stakeholders on COVID-19 Guidelines and Health Protocols* and the *Training Module for Education Officials on COVID-19 Guidelines and Health Protocols* (Government of Kenya 2020c, 2020d, 2020e, 2020f).

A major exercise of fumigating public schools, which were used as quarantine centres, was undertaken to make them safe for use as learning centres. The partial reopening of schools was welcomed by UNICEF and the Kenya Parents' Association. The Teachers Service Commission directed all teachers in all public schools to report back to school from 28 September 2020 in preparation for reopening. This first phase is expected to produce lessons that will inform actions in line with the full reopening of schools. On 25 September 2020, the Ministry of Education, Science and Technology directed the phased reopening of schools involving grade 4, class 8 and form 4 students, proceeding from 12 October 2020.

3.3 Long-term plans and projections

The Government of Kenya issued, on 7 August 2020, the *National Information Communications and Technology Policy Guidelines, 2020*, under the Kenya Information and Communications Act. It enumerates progress on information and communication technology (ICT) infrastructural improvement and states objectives that will fundamentally impact online learning at all levels of education in Kenya. It indicates that the Government of Kenya will introduce fiscal measures to stimulate increased investment and growth in the ICT sector, targeting both internal and external investment (Government of Kenya 2020g). A review of the taxation regime that aligns with the requirement for affordable computing and broadband access will contribute significantly to enabling schools to acquire necessary equipment, access online content and launch online learning programmes. Incentives will be provided to support Kenyan majority-owned ICT device, component and infrastructure manufacturers, and the development of online computer-based training services and companies in the country (Mukora, Njeru and Syekei 2020). This will attract investment locally and guarantee availability of computer-based gadgets to facilitate digitalization in the education sector, as well as ease access and increase educational inclusion of vulnerable and marginalized groups.

Long-term mitigation strategies are being linked to the Third Medium Term Plan, the National Education Sector Strategic Plan 2018–2022, and other policies of the Ministry of Education, Science and Technology. The Basic Education COVID-19 Emergency Response Plan of May 2020 outlines the education response during and after the COVID-19 pandemic. Long-term aspects of the plan focus on students, teachers, caregivers, education staff and parents at both national and county levels, and apply to both State and non-State actors involved in the implementation of education emergency interventions. Long-term measures proposed include more staff in understaffed counties; implementation of comprehensive school health policies; development of schools' emergency response plans; strengthening data management in order to monitor attendance and learners' progress with real-time data; and ensuring quality assurance conducted on school attendance, syllabus coverage and compliance with COVID-19 protocols.

Strengthening and building resilient education systems and institutions is desired to guarantee future mitigation strategies against similar disruptions. Lessons learned from the COVID-19 crisis will generate knowledge that shapes future measures against massive education disruptions. The capacity of teachers and education staff in risk preparedness and disaster management will be enhanced. Multisectoral collaboration will be promoted for education system resilience and strategies for resource mobilization for post-disaster school reconstruction (Government of Kenya 2020a). The Ministry of Education, Science and Technology ICT platform is expected to be strengthened to enable teleconferencing and virtual communication. This is geared towards supporting ministry and teachers, especially field officers who monitor online learning and disaster-handling initiatives. It is believed that building ICT infrastructure will go a long way towards increasing educational inclusivity and will help achieve the desired educational goals and objectives.

▶ 4. Impact of COVID-19 on the teaching profession

Developing an understanding of the full impact of the COVID-19 pandemic on the teaching profession will take time. It is clear that most schools attempted to continue syllabus coverage through remote means. Private schools encouraged use of existing online platforms such as Zoom, Esoma, Eneza Education, Longhorn, Obongo Kids and Google Classroom, and online learning resources from Longhorn publishers, the Zeraki Learning App, National Geographic Kids, Kytabu and eLimu, among others. Most public school learners had their lessons delivered through television and radio broadcasts, as facilitated by KICD. A few teachers continued interacting with learners via messaging applications and email, where they distributed summarized lesson notes. With regard to the level of success, a survey by the Ministry of Education, Science and Technology indicated that only a limited number of learners accessed remote learning. This was attributed to lack of internet connectivity, data bundles, electricity, mobile phones, radios and televisions (Human Rights Watch 2020).

Continuation in coverage of the school syllabus at all levels of learning cannot be effective if the digital capacity of teachers is not enhanced. ICT has become a universal tool for learning, teaching and training. It must be a prerequisite infrastructural investment to enable the attainment of Kenya's educational goals. Teacher preparedness and enhancement of their ICT competence will greatly assist in mitigating disruptions that limit school learning.

Teachers in public primary and secondary schools continued earning their salaries on a monthly basis. Some of their counterparts in private schools had their salaries suspended, as financial resources dwindled with prolonged closure of schools. Private schools could not sustain salary payments as most of them rely on school fees to operate. Some of the private school teachers could not meet their basic needs and it became challenging to pay house rents, particularly in urban areas, compelling them to relocate to the countryside. Access to health care services for these teachers and family members has also been difficult (Carvalho and Hares 2020).

There is a chance that teacher shortages will be experienced by some private schools once full reopenings commence. Some teachers in private schools have moved on to new jobs or alternative income-generating activities. In public schools, particularly in northern Kenya, teacher shortages created by hostility towards non-native teachers has not yet been resolved. The normal attrition through death and retirement has increase demand for replacement. The COVID-19 pandemic challenges and the Ministry of Education, Science and Technology *Guidelines on Health and Safety Protocols for Reopening of Basic Education Institutions* has generated the need for more teachers due to class restructuring and limits on the number of students per classroom. The Teachers Service Commission is expected to recruit more teachers under the school improvement programme, funded by GPE through a World Bank grant. Moreover, 6.5 billion Kenyan shillings has been allocated by the Government of Kenya to the Ministry of Education, Science and Technology for the hiring of more teachers and infrastructure improvement in both primary and secondary schools.

Given the persistence of the COVID-19 pandemic, teachers' and learners' health, safety and well-being will continue to remain a priority. As schools partially reopen, teachers will assume the greater share of responsibility in ensuring that the Ministry of Education, Science and Technology *Guidelines on Health and Safety Protocols for Reopening of Basic Education Institutions amid the COVID-19 Pandemic* are implemented. School administration will track and monitor recommended institutional undertakings. The learning and working environment will change as the health and safety protocols remain in place. Social distancing will change interactions in classrooms, libraries, laboratories, administration offices and staffrooms. Some co-curricular activities, such as swimming, gymnastics and contact sports, will be halted. Hygiene and sanitation protocols will require wearing of age-appropriate face masks, staggering meal times for learners, adequate water supplies and soap at strategic points of the institution. Lastly, temperature monitoring and recording will be mandatory (Government of Kenya 2020h). The new working environment will require more learning, vigilance and safety consciousness on the part of teachers and learners.

Teachers play varied roles in the school as well as in the community. They are role models, mentors and surrogate parents to students. Several changes targeting improvement and implementation of govern-ment-directed measures in the community emanate from teachers' ideas and suggestions, especially in rural and marginalized areas. Their interactions with the larger community are significant to the potential growth and development of society. The COVID-19 crisis has generated mental health challenges for teachers, especially those who are vulnerable due to underlying health conditions or are in age groups considered to be at higher risk of infection (Human Rights Watch 2020).
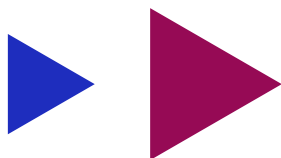
▶ 5. Governance and COVID-19 response

The Kenya Basic Education COVID-19 Emergency Response Plan was put in place with short-, medium- and long-term mitigation measures. The plan was developed through a broad consultative process involving field officers in the Ministry of Education, Science and Technology, education partners, line ministries, teachers, directors from the ministry, the Kenya Education in Emergencies Working Group, specialists from the UNESCO International Institute for Educational Planning and the World Bank, and technical teams from the Directorate of Project Coordination and Delivery, Directorate of Policy, Partnerships and East African Community Affairs, and Directorate of Field Services and Coordination of Co-Curricular Activities.

A compiled multi-agency report released on 27 May 2020 by the Kenya Human Rights Commission of presentations made at UNESCO's sixth COVID-19 education response webinar held on 24 May 2020, entitled *Effects of Coronavirus Pandemic on Education: Mitigation Measures, Analysis and Recommendations on Reopening of Schools, Colleges and Universities*, assessed the government's response to and mitigation measures for the COVID-19 pandemic in the education sector. Measures for easing the impact of the COVID-19 pandemic on the education sector were made by the Kenya National Union of Teachers, Universities Academic Staff Union and Kenya Human Rights Commission, in collaboration with other associations. The report included the following recommendations:

▶ reorganization of the 2020 school calendar based on consensus with education stakeholders;

▶ establishment of a stimulus package for education to ensure the government obligation of not leaving anyone behind by enhancing access to virtual learning among the poor;

▶ revitalization of the Digital Literacy Programme in public schools;

▶ commencement of syllabus coverage from where teachers and learners left off on 15 March 2020 upon reopening of schools;

▶ disinfection of schools prior to reopening as a health and safety measure;

▶ encouragement of teachers above 55 years of age to take early retirement.
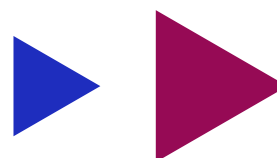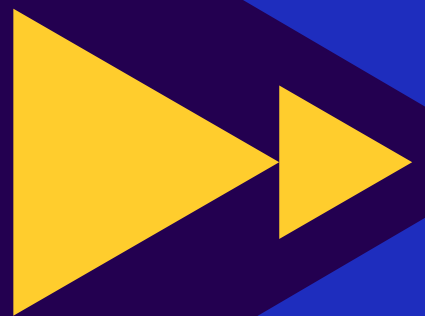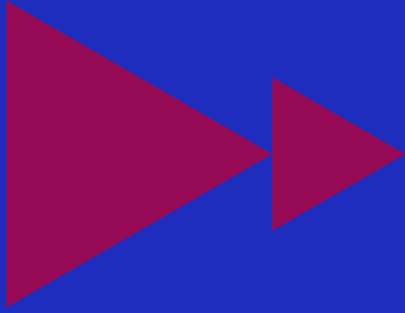
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