

Leadership Challenges Faced by School Principals when Implementing Ict-Based Curriculum and Instructions in Secondary Schools in Elgeyo Marakwet County

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Abstract: *Many schools in Kenya are still using traditional methods of teaching with old curriculum that lack ICT contents despite the government desire to have all schools in the country be ICT compliant. These institutions are still manually operated from class rooms to offices; all works are majorly manually done as classrooms are still containing black chalk walls, teachers prepare lessons manually. Lesson plans, timetables, notes and any other teaching materials are manually developed from key textbooks following a largely syllabus that is non-ICT content based. It is based on these backdrops that the purpose of this study was to establish the challenges encountered by principals in the implementation of ICT-based curriculum and instruction in secondary schools in Elgeyo Marakwet County in Kenya. The objective of the study was to establish the ICT-based curriculum leadership problems encountered when implementing ICT in secondary schools in Elgeyo Marakwet County. It was guided by the following theories; Open System Systems, Technology Acceptance Model and the Model of IT implementation process. This study adopted a quantitative descriptive survey design which aims at problems encountered in ICT implementation in secondary school in Elgeyo Marakwet County. The total target population included 20 secondary schools with a sample of 11 school principals, 11 school deputy principals and 169 teaching staff totaling to 192 were selected for the survey. Stratified sampling technique was used, The self-administered, structured questionnaire containing essentially closed questions. The data collected was organized and classified in particular order on completed questionnaires and incomplete questionnaires. The findings indicted that school leadership has a key role on ICT implementation in teaching and learning however, the level of ICT implementation is at its very basic levels and stages hence a conclusion that lack of technological, transformational, curriculum and instructional leadership and role models as custodian of school ICT implementation programs in secondary schools was inadequate. It was therefore recommended that school leaders should involve staff through distributive leadership style where leadership responsibilities can be delegated to others and that the government to provide a policy guideline stipulating conditional mandatory practice of ICT reforms in schools without which school principals would be held responsible.*

Keywords: *Curriculum, leadership and ICT*

I. Introduction

According to Zaman *et. al.*, (2011) the accessibility of information communication and technology (ICT) infrastructural facilities in schools is the responsibility of neither school leadership not the Ministry nor the government. The school principals understand the level of their ICT environment. The prevailing condition in school management in many public schools is disheartening and discouraging yet ICT use has been proved globally to support improved teaching and learning in schools. Effective education system in Kenya needs good management and accountability, the capacity and professionalism, and the availability of effective learning resources (Zaman *et. al.*, 2011). This will enhance adequate knowledge and skills building among for the 21st century workplace. Rapid development and use of technology, particularly ICT, to facilitate day-to-day human activities; is a critical feature of the 21st century trend of which schools have not been immune to. Technology is applied to enhance and strengthen classroom learning and instruction. In some schools there are a few of ICT materials and others no-presence of ICT materials at all. At the same time, those schools with ICT materials, they are not used in curriculum and instruction purposes in classroom for teaching and learning (Becta, 2003).

ICT-driven curriculum and instructions implementation require new curricula and materials, technologies such as more computers, lab equipment and software application regularly to maintain both teaching and learning across levels and subject matter, so curriculum and instruction leaders must ensure that their learning institutions are ready to accept and make use of such resources (Hennessy S., 2010; GOK, 2010). Since even with infrastructural facilities such as availability and access to financial resources, availability of ICT materials for example, computers, printers, internet, television, digital cameras, and projectors among others, it is imperative to influence, initiate so as to put those infrastructure into appropriate use (Royer, R., 2002). The use of ICT in appropriate contexts in education has value additive effects in teaching and learning. It

enhances effectiveness in learning process by adding a dimension to learning that was not previously available. Information communication technology is an important motivational aspect in students' learning, and support students' commitment with collaborative learning. Given the dynamic nature of Information communication technology, the curriculum, highlight the major educational purposes (Dzidonu, J., 2010). The government has worked hard to ensure funds are available to these schools to provide ICT infrastructure yet no school leaders are involved in provision of these ICT devices resulting in a maintained traditional methods of curriculum and instruction use in classrooms.

New curriculum and instruction models need to be exploited by curriculum and instruction leaders and teachers offer a accommodating and lifetime type of learning to the future citizens of the future (Nwana, S. E., 2009b). The ICT utilization in gaining knowledge of settings and gear in instructional processes, evidently leads to radical modifications each within the role of teachers and students and to the emergence of latest teaching and learning environments and methodologies in addition to new education modalities (Evoh, C.J., 2007). An environment that promote cooperation among staff members and assisting them to work together toward common goals including respect for staff members and concern about their personal feelings and needs will drive ICT content in curriculum and instruction implementation. The school staff must be challenged to re-examine some of the assumptions about their work and rethink as to how it can be performed, this will influence their desire to implement ICT-curriculum and instructions in the schools as no one would wish be left behind. The schools need to be able to add up to their performance and be role models for other staff members to follow that are consistent with the values leaders espouse leading to clarity of indicators of measurement of ICT-curriculum and instruction implementation (GOK, 2007).

Using ICT can support new instructional approaches and make hard-to-implement instructional methods such as simulation or cooperative learning more feasible in classrooms. Educationists agree that ICT has the potential to improve student learning outcomes and effectiveness that if implemented properly, ICT-supported education can promote the acquisition of the information and abilities so that it will empower students for lifelong mastering yet many studying institutions globally nevertheless lag behind full implementation of ICT-based curriculum and education. while carried out in curriculum and training appropriately, ICTs, particularly computer systems and internet technology, enable new ways of teaching and studying in preference to actually allow teachers and students to do what they have got executed earlier than in a better manner (Higgins, S. & Moseley, D., 2011). This constitutes a shift from a teacher-centered instruction, characterized by effective learning, to one that is learner-centered. However, what still go on in classrooms are the old learning methods, teachers still use black walls and dust chalks. The curriculum leaders (school principals) and teachers still use old methods of teaching and learning enhancing continued teacher-centered learning environment (Keengwe, J. & Onchwari, G., 2011). School environments require an enabled vision of how school reform will be affected by technology, influencing other teachers as well. The school principals are very busy with board meetings, attending to other matters at education offices in the county and other administrative matters, while fundamental technological requirements for their schools lag behind lacking ICT- policies to support designing and developing curriculum and instruction rich in ICT content for implementation across all subjects for easy implementation.

The application of information and communication technologies is critical to current classroom environment. This calls for establishing teaching and learning environment that is ICT-based curriculum and instruction ripe within all the learning activities of the school across all subjects. The school principals must provide direction and frameworks to drive forward the ICT-based curriculum and instruction by developing key competencies required for successful implementation of such curriculum in schools. Being a change that affects environment of its use, it requires charismatic and influencing leadership to enable its acceptance by implementers (Keiyoro P., 2011). The school principals must provide a driving force such as curriculum and instructional leadership that facilitate effectiveness in the overall mission of enhancing student achievement. However, in many Kenyan school systems, a common observation is that not many subject teachers have taken up the challenge of technology in general and ICT in particular to enhance learning and instruction resulting in traditional methods of curriculum and instruction status-quo (Laaria, M., 2013). Since not all teachers are keen to embrace ICT-related curriculum and instruction practices, no significant change would result in such an environment. Both the school principals and teachers are not keen in implementation of ICT-content in curriculum and instruction in the classrooms.

A leadership that motivates others and influencing their thinking and behaviour to obtain results would be a driving force behind ICT-engaged curriculum and instruction implementation in schools (Staples, *et. al.*, 2005). Such leaders cannot accomplish change alone; they rely on the work of others and a need to provide a role of data analysis of data to inform decisions, making clear and logical plans that staff members can follow, and ensuring a strong connection between school learning goals and classroom activity. Traditional principal training often emphasizes meeting requirements and following standard protocols, producing principals who often assume that restrictions exist, even when they do not. Successful turnaround leaders, to the contrary, often

breaks organizational norms because the way things have always been done have not achieved expected results. Implementation of ICT is currently a key concern for many school heads as various ministries around the globe strive to create a framework of having ICT integrated learning environment. This has necessitated a growing need for school leaders to play a more active role in implementing ICT-driven curriculum and instruction (Zaman, M, *et. al.*, 2011). This ICT-driven curriculum and instruction model can only be successful stakeholders are readily influenced. Already policies providing frameworks on how to implement ICT in the classrooms are available. However, many schools are still using the traditional approaches to curriculum and instructions. Although the final result of all education reform is student improvement, every reform initiative. Thus principals' leadership must be dedicated towards influencing teachers professional development in the ICT-curriculum and instructions implementation that changes teacher behaviours and attitude in ways that lead to successful implementation of ICT-curriculum and instructions in schools.

1.2 Statement of the Problem

ICT continues to grow in western and Asian countries but in African countries it still experience a lag in its implementation in classroom across all subjects, and widening the digital and knowledge divides in Kenya. Although the government has provided a national roadmap ICT policy, financial plan for ICT use in schools that requires its relevant extraction and implementation by key school leaders. Despite these road maps developed by the government to implement ICT-based curriculum and instruction in schools, the situation in many schools in Kenya is that many of these schools are not effectively implementing ICT in curriculum and management as intended. Moreover, despite efforts made by various stakeholders and significance of information communication technology in education sector, the National ICT policy on education of 2006 has not been effectively implemented as the ministry intended. While many countries have reported over 41% ICT use in classroom in public secondary schools, the proportion remains considerably low or completely zero in Kenya. The educators are still fully dependent on manual practice; little is seen in internet connectivity, social media use in schools, WIFI or wireless connectivity or even use of modem in the schools. Since curriculum and instruction heads are busy with other administrative matters that do not influence ICT use in their schools yet they agree that ICT has fundamental benefits. Many of the classrooms are still equipped with black dust chalk walls, no presence of ICT indicators. Lesson plans, timetables, notes and any other teaching materials are manually developed from key textbooks. Moreover, locally made content in terms of ICT curriculum, local language software or system, so that these schools can have data bases of local content in their school websites is not there. Transformational and Technological competent leadership as well as instructional leadership is not visible in light of overcoming ICT implementation challenges in secondary schools. It is with this background that an investigation of leadership challenges faced by principals when implementing ICT-based curriculum and instruction in secondary school in Elgeyo Marakwet County, Kenya was conceptualized.

II. Literature Review

The chalkboard and textbooks continue to be dominantly used for classroom activities in most secondary schools in developing countries, Africa included. There is no doubt that in the current economic competition, the private education sector in Kenya has embraced the adoption and implementation of information communication technology to continue improving their performance. The insurance sector, banking, manufacturing industries have used multimedia technology to bring innovative solutions to their current problems. The successful pedagogical implementation of ICT requires teachers and students to break away from the barriers of time, lack of confidence and resistance to change (Becta, 2003). Teachers and students both need to face up to the challenges that will change the face of traditional teaching and learning, which focuses on the monopolistic activities of teachers in class, to activities that are more influenced by students, address the needs of individual learners and incorporate one-on-one tutorial practices (Cross, & Adam, 2007).

2.2.1 Role of School Principal in ICT Implementation

Many studies on technology integration in the education conducted in Hong Kong (Yuen *et al.* 2003), South Africa (Dzidonu, 2010) and Australia (Amoo, 2002) have identified the success of ICT implementation with their school leadership, so it is possible that in a similar environment, the school leadership owes ICT implementation success to the school (Alexander, 2003). Several investigators of educational technology implementation have noted that many of school managers have little understanding of the relationship between ICT versus performance as well as the students outcome (Amoo, 2003a). This is a gap that is not fully researched and needs to be explored. Several factors influencing the adoption and Implementation of ICT into teaching had been recognized by means of researchers. Rogers (2003) identified five technological characteristics or attributes that have an effect on the selection to adopt an innovation. Balanskat, Blamire & Kefalla (2007) identified the factors as trainer-degree, school-degree and system-level. Teachers' Implementation of ICT into teaching is also influenced by using organizational factors, attitudes towards

generation and different factors (cross, & Adam, 2007). Sherry & Gibson (2002) claim that technological, individual, organizational, and institutional factors ought to be considered whilst analyzing ICT adoption and implementation. Neyland (2011), elements including institutional support in addition to micro elements along with trainer capability influencing the use of online studying in high colleges in Sydney. this text critiques research on the use of ICT with the aid of teachers and perceive factors that included and labeled in the framework of Sherry & Gibson (2002).

ICT in learning and teaching refers to the use of ICT in facilitating teaching and learning processes to meet the challenges of the 21st century. Meeting these depends on the early Implementation of ICT into learning and keeping teachers up to date on the use and application of ICT in learning and teaching. The Education Department has indicated the importance of implementing ICT into education (Sherry, Billig, Tavalin, & Gibson, 2000). The introduction of ICT in education represents an important part of government's strategy to improve the quality of learning and teaching across the education and training environments. The policies aim is to focus on learning and teaching for a brand new generation of younger people Regardless of the policies and precise intension of introducing ICT into school, there's a disparity in the implementation of ICT in South Africa faculties. according to the branch of schooling's White Paper (2003), there are nevertheless greater than 19 000 schools without computer systems for teaching and gaining knowledge, nonetheless, there may be an improvement in the japanese Cape pronounced the least quantity of computer systems in colleges and using computers for teaching and learning at faculties. The White Paper suggested that disparities pondered in South African society also discover expression in ICT Implementation into schooling, although the wide variety of colleges with computer systems for coaching and studying has elevated from 12.3% in 1999 to 26.5% in 2002. according to the branch of training's White Paper (2003), it is clean that it's miles difficult to bring together an ICT profile for South African faculties. facts are prompted via various factors, which includes the fast redundancy price and the extent of utilization and the sharing of ICT resources.

2.2.2 Curriculum Leadership and ICT implementation

Many school principals frequently are anticipated to make reform efforts work after the essential selections are made by using curriculum specialists. training reform efforts have seized the eye of the specialists, however principals need to name the photographs as a way to lead their schools to higher standards and elevated rigor. The principals must anticipate the important role of curriculum chief. today's reforms which include ICT-content inclusion in curriculum and coaching for classrooms utilization, transcends educational leadership and statistics-primarily based choice-making abilities. This isn't to mention that those behaviours aren't essential to a principal's fulfillment, but they no longer suffice. Principals do not want to be curriculum specialists, but they do need to lead their colleges with complete expertise of the school curriculum needs, the brand new assessments tied to those requirements, and the rigor embedded in both.

Principals have to assist all individuals develop an information of the targets of ICY-content in curriculum and education manner and provide a timeline for transition. To put in force and maintain the changes required and teachers must understand and include the college and profession readiness standards of their educational planning. sources, including the content material frameworks, created through the assessment consortium, can support educators as they develop their transition plans. A wellknown rate to "take a look at the standards and start teaching to them" will now not help instructors, nor will it bring about any significant alternate. rather, management groups can do the heavy lifting required through the new requirements by way of creating cogent, centered transition plans that discover specific steps, which include timelines, expert development projects, and responsibility structures. The predominant and the management group also ought to don't forget key additives of change management as they broaden their transition plans. If one or more components are absent or misunderstood, then confusion, resistance, and frustration may additionally result.

Foremost instruction projects rightfully consciousness attention upon academic management abilities. Transition to the generation strategic technique to coaching and gaining knowledge of, laying the basis for the development of a curriculum leadership group in their college, and growing a template for them to apply to offer the professional development necessary for taking the primary steps within the transition elevates curriculum management skills to a new status and principals need aid to count on the mantle of curriculum management referred to as for these days.

III. Materials and Methods

The study employed a descriptive survey research design. The population targeted for this study included all the Elgeyo Marakwet County secondary school principals, the total target population was from all the principals, deputy principals and teachers from the 74 secondary schools in the entire county. The study used questionnaires as the method data collection instruments. Cronbach's coefficient alpha was applied on the results obtained to establish relationships between variables; a cronbach alpha of 0.8761 was obtained which confirmed the reliability of the research instruments

3.1 Data Analysis

The data collected were organized and classified in particular order as completed questionnaires and incomplete questionnaires, the incomplete questionnaires were classified as invalid and were excluded from the analysis. After classifying, the data was entered in computer using (SPSS) statistical package for social sciences for further analyses. Frequency distribution tables, figures and frequency findings were used to present the results. The quantitative data was analysed using inferential statistics where mean and standard deviation were generated and analysed to determine the degree of deviation from the main problem of study. Qualitative data was analysed using frequency tables and percentages. Other methods of analysis used included correlations to determine any association between independent and dependent variables in this study.

IV. Results and Discussion

4.1 Curriculum Leadership

This section sought to determine the level of participants' agreement with the statement given. There were 6 items measured on a 5-point likert scale. These items included: Modify curriculum, instruction, and content resources to reflect learning objectives and incorporate ICT as a tool for learning; Align curriculum and assessment to support learning and improve instruction through real-time, technology-enabled assessments; Understanding ICT content and incorporate them in curriculum development; Be able to identify how various components of the curriculum link together; Use curriculum in planning instruction and assessment; Lead teachers to agree on standards, follow the adopted curriculum, use common pacing charts, and develop shared assessments and Developing team members agree to increase the consistency in their classroom curriculums and administer common assessments. The results are as shown in Table 4.19.

Table 4.1: Distribution of the Measure of ICT Curriculum Leadership

	In Promoting ICT-based Curriculum and Instruction, Principals' Curriculum Leadership		SA	A	N	D	SD	Total
1.	Modify curriculum, instruction, and content resources to reflect learning objectives and incorporate ICT as a tool for learning	f	14	19	00	35	82	150
		%	09.3	12.7	00	23.3	54.7	100
2.	Align curriculum and assessment to support learning and improve instruction through real-time, technology-enabled assessments	f	13	19	07	31	80	150
		%	08.7	12.7	04.7	20.7	53.3	100
3.	Understanding ICT content and incorporate them in curriculum development	f	15	17	00	37	81	150
		%	10.0	11.3	00	24.7	54.0	100
4.	Be able to identify how various components of the curriculum link together Use curriculum in planning instruction and assessment	f	14	19	00	19	98	150
		%	09.3	12.7	00	12.7	65.3	100
5.	Lead teachers to agree on standards, follow the adopted curriculum, use common pacing charts, and develop shared assessments	f	07	14	00	47	82	150
		%	04.7	09.3	00	31.3	54.7	100
6.	Developing team members agree to increase the consistency in their classroom curriculums and administer common assessments	f	09	15	00	44	82	150
		%	06.0	10.0	00	29.3	54.7	100

The results in Table 4.1 show that strongly disagree accounted for 52.7% (79), disagree 35.3% (53), agree accounted for 08.7% (13), and strongly agree 03.3% (05). This is an indication that majority of the participants did not approve the statement that the school leader are able to use curriculum leadership to modify curriculum, instruction, and content resources to reflect learning objectives and incorporate ICT as a tool for learning. In relations to align curriculum and assessment to support learning and improve instruction through real-time, technology-enabled assessments, results show that strongly disagree accounted for 52.7% (79), disagree 35.3% (53), agree accounted for 07.3% (11), and strongly agree 02.7% (04). This is an indication that majority of the participants did not approve the statement that the school leader can align curriculum and assessment to support learning and improve instruction through real-time, technology-enabled assessments. At the same time, these results show that that strongly disagrees accounted for 51.3% (77), disagree 34.0% (51), agree accounted for 09.3% (14), and strongly agree 05.3% (08). This is an indication that majority of the participants did not approve the statement that the school leader understands ICT content and incorporate them in curriculum development.

At the same time, the results in Table 4.19, one realizes that strongly disagree accounted for 50.7% (77), disagree 32.7% (49), none 02.0% (03), agree accounted for 09.3% (14), and strongly agree 05.3% (08). This implies that majority of participants did not agree with the statement that the school leader are able to identify how various components of the curriculum link together Use curriculum in planning instruction and assessment. Also participants with opinion of strongly disagree accounted for 50.7% (77), disagree 32.7% (49), agree accounted for 10.0% (15), and strongly agree 06.7% (10). This implies that majority of participants did not agree with the statement that the School leaders are able to lead teachers to agree on standards, follow the

adopted curriculum, use common pacing charts, and develop shared assessments. Again these results reveal that strongly disagree accounted for 49.3% (74), disagree 34.7% (52), agree 10.0% (15), and strongly agree 06.0% (09). This implies that majority of participants did not agree with the statement that the school leaders are developing team members agree to increase the consistency in their classroom curriculums and administer common assessments. This is in line with a study by (Lan, B. & Sim, C. 2008); leadership role must administer procedure for measuring the growth of each individual teacher

4.2 Curriculum Leadership and ICT-based Curriculum and Instruction Implementation

The study result indicated that there was a moderate and positive correlation between Curriculum Leadership and ICT-based curriculum and instruction implementation ($r = 0.70$, $n = 150$, $p < 0.05$). Principals, who had leadership in curriculum content design and development incorporating ICT in the process, were able to influence themselves and their schools to get essential and relevant contents required for use in their schools thus influencing the implementation of ICT in the teaching and learning processes. In fact, such principals can model technology for use in their use for their staff and make their vision tangible. It means these principals understand the type of ICT learning and teaching contents needed to be incorporated in curriculums of their schools. This finding is an indication that it is difficult for a principal that has not understood the value and impact of ICT use in education to provide a leadership drive in implementing ICT in their schools school and society and wants to convince teachers to use ICT devices in their teaching and learning process (Yee, 2000). This curriculum leadership relates the leaders' success to their individual ability to articulate and influence norms and values in classroom modernisation. In addition, researchers have pointed to leadership as one of the factors influencing ICT application (Albirini, 2006b; Lee *et al.*, 2007; Leidner & Kayworth, 2006; Loch *et al.*, 2003). The findings from the current study support this conclusion. At the same time, the study's result is in agreement with Rogers' premise regarding the role of social norms in the diffusion of innovations. Specially, sampled participants in this study acknowledged the importance of ICT for their educational system and society, which is an enabling environment for launching ICT implementation in the school curriculum and instructions.

4.3 The Relationship between ICT Implementation in Curriculum and Instruction and Independent Variables

The association between ICT-based Curriculum and Instructions Implementation and independent variables were explored by using the correlation analysis. Correlation analysis was used to describe the strength and direction of the linear relationship between two variables. To run correlation analysis, preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity had taken place. The correlation matrix shows a number of significant relationships between level of ICT-based Curriculum and Instructions Implementation by principals and the independent variables (Table 4.2).

Table 4.2: Summary of the Correlation Matrix of Independent Variables and ICT-based Curriculum and Instruction Implementation

Variable	N	Pearson Correlation	point-biserial/ biserial correlation	Sig. (2-tailed)
ICT Implementation		1		
Age	150	-0.49**		0.000
Education Level	150	-0.47**		0.000
Duration	150	0.30**		0.000
Gender	150		-0.089	0.13
ICT Usage/Skills/Knowledge	150		-0.090	0.11
ICT implementation Policy	150		-0.062	0.28
ICT implementation Stage	150	0.87**		0.000
ICT implementation Level	150	0.80**		0.000
ICT enabling environment	150	0.84**		0.000
Technological Leadership	150	0.89**		0.000
Transformational Leadership	150	0.78**		0.000
Curriculum Leadership	150	0.70**		0.000
Instructional Leadership	150	0.22		0.08

Note. All these factors had 5% level of significance, which means that there is a 50% chance that relationship emerged randomly and a 95% chance that relationship was real

V. Conclusion

From the study it was concluded that curriculum leadership is a significant factor that challenges the ICT implementation process. If it applied then there would be improved and successful implementation of ICT in the schools. It was also evident that this leadership was applied poorly resulting into failure to properly provide the guide towards curriculum design and development for ICT related contents.

5.1 Recommendation of the Study

The government and the ministry of education should provide a mandatory policy guides and ICT training materials to all the school principals whether young or old to facilitate the ICT implementation process in the schools curriculums and instructions. This would eliminate the problem of outdated education qualifications that current principals have. The school principals must have strong command of technological technics that are relevant to the design and development of ICT-based curriculum and instructions in their schools. This would give them confidence and improved ICT proficiency leadership to drive the school environments towards ICT reforms. It is also essential for the school principals have transformational characteristics that can influence teachers and the entire school community towards accepting technological use that is a necessity for ICT implementation. This would bring a total change of attitude, behaviour and characters of ICT implementers such as teachers and students in the respective schools.

5.1.2 Suggestions for Further Studies

The literature reviewed by this study had weaknesses on the ICT implementation as there is lack of empirical findings on stages and levels of ICT implementation. This study also is limited on its findings under its objectives of the influence of gender, age, education and experience on ICT implementation leadership. Therefore it is important for further studies to explore an extensive study on the influence of these demographic variables on the leadership in implementing ICT in schools. The other area is making ICT a mandatory element of teaching across the subjects in schools. It is also important for future studies to investigate the relationship of a mandatory policy to public school principals and the implementation of ICT in schools.

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