Teachers' Use of Portfolio Assessment to Measure Children's Learning in Public and Private Primary Schools in Bungoma County, Kenya.

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ABSTRACT

This study investigated the use of portfolio assessment among teachers in public and private primary schools in Bungoma County, Kenya. Specifically, it explored the extent of portfolio use, types of portfolios employed, and challenges faced by teachers. Data were collected through questionnaires and interviews from 80 teachers, and analyzed using descriptive statistics and independent t-tests. The study used a purposive sampling approach to select three sub-counties (one in the west, one in the centre and one in the east). A stratified random sample was used to sample 80 institutions, including both public and private schools. In each school, teachers in the third grade were purposively selected. Reliability was established by a re-test method in which the same participants were re-surveyed with the questionnaire and interview questions within a two-week interval. Using Pearson's correlation coefficient of moments, a coefficient of 0.74 was found, indicating that the instruments were reliable. Findings revealed high usage (92.5%) of portfolio assessment, with assessment portfolios being the most preferred type. While private school teachers had slightly higher usage rates, the difference was not statistically significant ($p = .513$). Challenges included inadequate parental support, poor storage facilities, limited training, and learner-related issues, with public school teachers experiencing more difficulties. Additionally, many teachers lacked clarity on portfolio types and application. The study concluded that while portfolio assessment is widely adopted, its effective implementation is hindered by systemic and contextual challenges. It recommends enhanced training, improved infrastructure, parental engagement, and supportive school policies.

Keywords: Assessment, Children learning, Learning, Portfolio, Portfolio Assessment.

INTRODUCTION

Portfolio assessment analyzes children's learning development by looking at a variety of their projects (Rao, 2024). Regarding the application of portfolio assessment, the study sought to explore the rationale behind it, the kinds of portfolios that are utilized, the processes involved in completing the portfolio, and the difficulties that teachers experience when completing the portfolio. Below is a synopsis of these variables based on a review of related literature.

Use of Portfolio

Portfolio assessment is gaining popularity for several compelling reasons. As noted by Rao (2024), one of the main drivers for its implementation in schools is its effectiveness in evaluating both student performance and curriculum outcomes. Unlike traditional assessment methods, portfolio assessment incorporates a range of tools such as peer and instructor rating scales, offering comprehensive evidence of a learner's progress. It also accommodates written test results and exam scores, contributing to a more complete picture of the student's academic development. Its adaptability makes it suitable for both formative and summative evaluations, thereby enhancing its resilience and versatility as an assessment approach.

The benefits of portfolio assessment have also been validated by empirical studies. Underwood (1998), in a quasi-experimental study involving language arts portfolios in a Northern California middle school, found that students in classrooms using alternative assessment methods displayed greater orientation toward learning goals compared to those in regular classrooms. This suggests that teachers are drawn to portfolio assessment for its potential to enhance student learning and motivation.

Aksıt (2016) echoed these sentiments in a study titled *"Implementing Portfolios in Teacher Training: Why We Use Them and Why We Should Use Them."* Conducted with twenty-five student teachers in a third-grade social studies class, the study employed an action research design and revealed that portfolio use allowed teachers to shift their roles and adopt more student-centered strategies. It also enabled them to better articulate the aims and scope of the curriculum, leading to more transparent learning outcomes. Furthermore, the study confirmed that portfolios serve as a practical and efficient means of documenting both student progress and learning. However, while such research has been conducted at secondary and tertiary levels, there is still limited knowledge regarding portfolio use in lower grades, particularly in early childhood education highlighting the need for further inquiry into the motivations behind its use by educators in that space.

In South Africa, Grosser and Lombard (2005) described portfolios as tools that support continuous evaluation. One study though the specific source was unclear suggested that portfolios prepare students with the strategic thinking, self-direction, and reflective skills required for success beyond school and into the workforce. While this study focused on higher education, it raises important questions about how and why early childhood educators in Kenya are adopting portfolio assessments in their own classrooms.

Within the Kenyan context, portfolios have been found to emphasize individuality, autonomy, and the learner's ability to self-evaluate. Priscah et al. (2016), in a study involving clinical students, observed that learners view portfolios as tools that cater to their individual needs by allowing them to independently construct and make meaning of their own knowledge. Based on these findings, the current study set out to explore whether early childhood educators in Kenya are similarly motivated to use learner portfolios and whether their reasons align with those found in other educational levels and contexts.

Types of Portfolios

According to Dos Santos (2024), portfolios exist in various forms, each serving different purposes in the educational process. These include process portfolios, showcase portfolios, cumulative portfolios, documentation portfolios, goal-based portfolios, reflective portfolios, electronic portfolios (or e-portfolios), and mini-portfolios. Goal-based portfolios are designed to show students' progress toward specific learning objectives, while process portfolios outline the steps and instructions associated with each item, often incorporating multiple evaluations by different teachers. Reflective portfolios, on the other hand, emphasize the views of teachers, students, and parents regarding learning experiences. Student work samples are typically featured in passive portfolios, and evaluation portfolios focus on standardized tasks set by local or state authorities. Mini-portfolios, frequently adopted by learners themselves, are often used to showcase artistic work and describe the development process (Horvitz & Wilcox, 2007).

Caldwell (2007) classifies portfolios into two major categories: process and product portfolios. Product portfolios consist of finished student work and are used primarily to display their best efforts, though they offer limited insights into a child's developmental process. In contrast, process portfolios emphasize learning journeys by including reflective entries, peer and teacher feedback, and other artifacts that collectively trace a student's growth over time. As Mueller et al. (2008) explain, process portfolios are designed not only for assessment but also to help monitor progress against educational standards, inform grading, and assist in student placement. The choice of which portfolio to use is an important pedagogical decision, and it is recommended that both teacher and student agree on the goal of the portfolio before selection. Factors such as the learner's age and abilities also influence the type of portfolio that is most suitable (Salend, 1998). The current study sought to explore whether teacher training played a role in enhancing collaboration between educators and learners in selecting the appropriate type of portfolio.

Portfolios can also be presented in creative and varied formats. As DeFina (1992) and Jasmine (1995) observed, portfolio contents are sometimes stored in unique containers such as pizza boxes, modified books, or custom-built shelves. For younger learners, especially in elementary settings, large drawings or textual samples might be better stored in decorated boxes with indexed covers for clarity. Teachers may reduce the size of bulky work samples using photocopiers or fold large materials to fit them into storage more conveniently. Hanging file folders organized by subject are also popular for portfolios with diverse contents. While teachers often have preferences regarding portfolio format, engaging students in deciding how their work is stored and displayed can make the process more meaningful and inclusive.

Despite the increasing popularity of portfolios, research by Alacam and Olgan (2015) reveals that many teachers struggle to distinguish among different types. While most could describe what portfolios generally contain, they often failed to identify specific categories and purposes. Some teachers referred to portfolios simply as "folders," suggesting a surface-level understanding of their use. This may be indicative of a lack of deep internalization of portfolio training. As a solution, participants recommended in-service training by specialists in portfolio assessment, as well as the development and distribution of educational brochures, particularly targeting veteran teachers who were not introduced to portfolios during their initial training. A lack of clarity around portfolio types may also suggest missed opportunities for engaging learners and parents in selecting and shaping portfolios—an essential component of successful implementation. Consequently, the effectiveness of portfolio assessment and the value of in-service training need to be critically examined.

Muiruri (2020) conducted a study in Kenya's Mbeere sub-county to understand which portfolio types were being used in secondary schools. Findings indicated that the process or working portfolio was the most commonly used (46%), followed by the evaluation or assessment portfolio (36%), and product portfolios (18%). Science teachers showed a strong preference for process portfolios (70%), with less usage of assessment portfolios (23%) and very limited use of product portfolios (7%). In contrast, humanities teachers leaned heavily toward product portfolios (56%), followed by evaluation (35%) and minimal use of process portfolios (9%). Mathematics teachers used process portfolios (45%) and evaluation portfolios (40%) in nearly equal measure. Among language teachers, 55% preferred evaluation portfolios, while 32% chose process portfolios. Teachers of other subjects overwhelmingly favored evaluation portfolios, with 65% adoption.

Overall, most teachers supported the idea of documenting students' learning activities. However, there remains limited data on portfolio use in early childhood education, which is where the current study places its focus. In addition to this gap, there are inconsistencies in why teachers choose specific types of portfolios and whether their training influences those preferences. Hence, the goal of the present study was to determine whether professional training for teachers affects their selection and application of various portfolio types in early learning environments.

Key considerations in Portfolio Assessment

The effectiveness of portfolio assessment depends on deliberate, structured planning to ensure it accurately reflects learners' development. An effective portfolio should not only present a clear picture of a student's progress toward learning objectives but also inspire learners to strive for improvement. Literature on the subject (Wortham, Barbour, Desjean-Perrotta, 1998; Davis & Ponnamperuma, 2005; Virgin & Bharati, 2020) outlines several key factors necessary for successful portfolio assessment.

One of the most important elements is setting teaching goals to assess through a portfolio. Instructional objectives form the foundation of the entire assessment process, as they guide the selection and evaluation of student work (Baroudi, 2014). Teachers must ask themselves what they want learners to achieve by the end of instruction. For example, if improving speech fluency is the target, then both the teacher and the students should be clear about what work needs to be included in the portfolio. Setting goals in collaboration with students has been shown to be especially beneficial (Kuisma, 2007). This approach allows learners to reflect on their needs and aspirations and contributes to meaningful portfolio selection—whether for student showcases or teacher evaluations. In Kenya, the Kenya Institute of Curriculum Development (KICD) offers subject-specific learning outcomes and goals, and with training provided by the Kenya National Examination Council, teachers are expected to have strong foundational knowledge in this area.

Equally essential is introducing the idea of portfolio assessment to the class and involving learners in the process. Open discussions about the purpose and structure of portfolio assessment help students better understand its value, which encourages full participation. Students must be guided on what constitutes a portfolio and the significance of each component (Goodman, 2015). They should be made aware that portfolio assessment is broader and more reflective of real learning than traditional examinations (Lam, 2018). Importantly, students should understand their active role in the process—from setting goals and choosing materials to reflecting on their work and discussing their portfolios with parents and educators. Providing examples of well-done portfolios and creating space for questions and clarifications helps to demystify the process and ensures that learners are adequately prepared to interpret and track their progress.

Another critical consideration is specifying the content of the portfolio. According to Lam (2018), educators must be explicit about both the required and optional components. Portfolio entries can take many forms, including dialogue journals, written text, audio and video recordings, annotated drawings, or model artifacts. Before starting the work, students should be introduced to the rubrics, scoring guides, and rating scales that will be used in evaluation, ensuring clarity and transparency (Lam, 2018; Smith & Tillema, 2003).

Also vital is establishing clear guidelines for scoring and grading portfolios. Teachers need to explain how each portfolio will be assessed. These guidelines should be periodically reviewed and updated to maintain relevance and fairness. It is recommended that teachers document discussions with students regarding assessment expectations and prepare grading guidelines in the form of frequently asked questions. Collaborative planning among instructors is essential to standardizing the interpretation and evaluation of portfolio components. Teachers can convene regularly to share ideas on how to structure and assess the portfolios, agree on rubrics and report formats, and discuss each learner's individual progress (Wortham, Barbour, Desjean-Perrotta, 1998). Decisions on whether to use interviews, classroom observations, work samples, or teacher checklists are often left to individual teachers, depending on what best suits their learners and contexts.

Lastly, sharing the results of portfolio assessments with key stakeholders is crucial. Parents, fellow teachers, and school administrators should all have access to the outcomes to assess how learning progress is being sustained over time. A key consideration is how much of a learner's portfolio should be shared with the next grade-level teacher. Maintaining continuity in assessment, particularly across the primary grades, is necessary for informed instructional planning. For example, students transitioning into Grade Four should present portfolios containing samples of performance assessments, noteworthy teacher observations, at least one entry for each learning area, and two to three writing samples each supported by a rubric or checklist collected every six weeks (Wortham, Barbour, Desjean-Perrotta, 1998; Eren, 2007; Lam, 2018). These samples allow receiving teachers to tailor instruction based on individual learner needs.

Despite these well-documented practices, many teachers continue to face challenges when adapting to new educational requirements, especially in designing effective assessment tools. The current study therefore sought to investigate whether teacher training improved their capacity to implement portfolio assessment appropriately and collaboratively, especially in early childhood settings.

Research Studies on Use of Portfolio Assessment

Research on the use of portfolio assessment highlights both the potential benefits and the practical challenges associated with its implementation. Wortham, Barbour, and Desjean-Perrotta (1998), in their study at Roosevelt Elementary School, revealed that shifting from traditional paper-and-pencil assessments to portfolio-based assessments required significant adjustments in how programs were structured and executed. Despite having received prior training, many teachers expressed uncertainty about their ability to effectively implement portfolio assessment. Initially, teachers collected materials without using them meaningfully for evaluation purposes—accumulating work samples without aligning them with learning goals. However, with continued exposure to the method, they began to improve. Teachers gradually developed the ability to curate balanced entries across various learning domains, connect collected items with specific learning objectives, and categorize work samples appropriately. Over time, they were also able to reflect on their own assessment practices, recognizing gaps such as limited data on learners' social development and an overdependence on worksheets and conventional tests.

A more recent study by Virgin and Bharati (2020), titled *"Teachers' Perception, Plan, Implementation, Portfolio Assessment in Students' Writing Assessment,"* echoed similar concerns. While teachers held positive views about portfolio assessment, the study found that their actual knowledge and application of the approach were lacking. The portfolios were not developed according to any structured plan, and they lacked clear steps or rubrics. Furthermore, student reflections a crucial component of portfolio assessment were missing from the portfolios. Teachers also struggled with time management and organizational aspects, which further undermined the effectiveness of their portfolios. This disconnect between teachers' favorable attitudes and the poor structure of their portfolios was largely attributed to insufficient knowledge. The study underscored the importance of training and workshops to enhance teachers' competency in portfolio assessment. However, due to the absence of follow-up studies, it remains unclear whether such training leads to long-term improvements in how teachers organize and use portfolios, underscoring the relevance of the current study.

In South Africa, Tlokotsi (2008) proposed a model to enhance the execution of portfolio assessment, but findings showed that teachers still failed to meet the expectations of assessment-driven learning. Similar conclusions were drawn in a study by Chere-Masopha and Mothetsi-Mothiba (2022) in Lesotho, where teachers reported difficulties in applying portfolio assessment in a manner consistent with educational policy. Their lack of knowledge and experience was identified as a major obstacle. These challenges mirror findings from Tanzania, where Byabato and Kisamo (2014) examined the implementation of school-based continuous assessment, which included portfolio use. Their research exposed a lack of consistency and precision in the use of assessment tools across different schools. This inconsistency made it difficult to compare assessment outcomes across institutions, undermining the reliability of portfolio-based evaluations.

In Kenya, Muiruri (2020) explored both teacher and student perceptions of portfolio assessment at the secondary school level. The study found that 88% of teachers used portfolio assessment, while 4% did not, and 8% were unaware of it. Although this suggests high adoption levels, the study did not explore how effectively teachers followed recommended portfolio practices. Additionally, the focus on secondary schools left unanswered questions about the use of portfolio assessment in earlier grades. The current study sought to bridge this gap by investigating whether professional development initiatives have helped teachers particularly at lower grade levels enhance their use of portfolio assessment in line with best practices.

Portfolio Assessment in Private and Public Schools

Although numerous studies have been conducted globally, regionally, and within Kenya, there remains a notable gap in research specifically addressing the distinctions between portfolio assessments in public and private schools. For instance, in East Java, Indonesia, Qayyarah (2018) explored how educational policies were implemented in relation to the school curriculum. The study compared how Islamic private schools and public schools implemented this curriculum. Findings revealed that public junior secondary school teachers benefitted more from government-supported professional development programs than their private school counterparts. This advantage enabled them to better comprehend educational policy frameworks and implement the required procedures effectively. Moreover, public school teachers demonstrated a deeper understanding of character education, including how to prioritize values and integrate them into classroom teaching through both instruction and modeling.

Cadigan, Wei, and Clifton (2013), as well as Dronkers and Robert (2008), examined the relative effectiveness of public and private schools. Their findings diverged, with evidence suggesting that government-supported private schools outperformed public schools in areas such as student achievement, parental involvement, and socioeconomic diversity. The superior performance in private schools was largely attributed to a more conducive school climate. However, the question of curriculum implementation in both private and public institutions especially in developing countries such as Kenya still calls for more empirical investigation.

In Nigeria, Usman, Simvyap, and Fasanya (2019) studied challenges in implementing the new secondary school physics curriculum across public and private schools. Their research showed that teachers in both school types expressed concerns about curriculum implementation. Public schools were bound by regulations that dictated specific assessment techniques to ensure quality control, while private schools enjoyed flexibility in curriculum

design and assessment models. Class size emerged as a distinguishing factor: public schools often had larger class sizes, whereas private schools typically had smaller, more manageable class groups. This difference in learning environments suggested that private school teachers might find it easier to implement curriculum changes, such as those required for physics instruction. These contextual variations ranging from class sizes to regulatory frameworks and school environments provided the basis for the current study's attempt to compare the use of portfolio assessment in public and private schools.

In Ghana, Adediwura, Ogunsakin, and Shogbesan (2020) investigated how science teachers in both public and private secondary schools in Osun State used portfolio assessments. Their findings revealed that teachers in both school types held similar views regarding the application of portfolio assessments in student grading. However, because the study focused on secondary schools, it left a gap in understanding how portfolio assessments function at lower grade levels. This gap further justified the need for the current study. Similarly, while Chere-Masopha and Mothetsi-Mothiba (2022) acknowledged implementation challenges in Lesotho, it remained unclear whether those difficulties were more prevalent in public or private school settings.

In Kenya, there is limited research linking portfolio assessment to specific school types. Muiruri (2020) observed positive teacher attitudes toward the use of portfolio assessment but did not examine how these perceptions varied across public and private schools. Conversely, Moturi (2015) highlighted that while public schools often faced restrictive environments, private schools tended to foster friendlier teacher-student relationships. This contrast suggests possible advantages for private schools in implementing portfolio assessment, but without further research, it is difficult to draw firm conclusions.

Mackatiani (2018) concluded that private primary schools generally maintained better physical facilities compared to public schools. He also noted that public schools had larger class sizes. These findings aligned with those of Owuor (2022), who reported that private schools, owing to better resources, were more effective in implementing Kenya's Competency-Based Curriculum (CBC). The current study sought to investigate whether these same factors influenced the implementation of portfolio assessment, as previous research had not explicitly addressed this.

Finally, a study by Ngure, Mwoma, and Buna (2019) on reading proficiency among third-grade students in Nairobi County showed that a large percentage of pupils performed below average in core literacy skills, including letter recognition, sentence reading, and comprehension. These outcomes were largely attributed to inadequate learning resources in public schools. However, it remains unclear whether similar challenges affect the use of portfolio assessments. This uncertainty further underscores the need for focused research on the use of portfolio assessment in both public and private school contexts.

Research Objectives

The study was guided by the following objectives

To establish how teachers, use portfolio assessment to measure children's learning in public and private primary schools

To find out types of portfolios used in both public and private schools

To evaluate challenges faced by teachers when carrying out portfolio assessment in private and public schools.

METHODOLOGY

This study adopted a descriptive survey design that utilized both questionnaires and interviews to investigate how portfolio assessment is implemented by Grade Three teachers in Bungoma County, Kenya. The design was instrumental in providing detailed insights into the practices surrounding portfolio assessment among the teachers. To obtain a representative sample, purposive sampling was used to select three sub-counties Bungoma West, Bungoma Central, and Bungoma North as the study sites. Within these sub-counties, a simple random sampling technique was employed to select eighty Grade Three teachers who participated in the research.

Sampling Procedures

Sub-counties were sampled using a purposeful sampling technique (for regional balancing). All sub-county schools were sampled through stratified random sampling. Following the division into private and public sectors, schools were selected proportionately at random from each category. From each school, a single grade three teacher was deliberately sampled. To choose one teacher, however, a simple random sampling was applied in schools with two or more streams.

Data Collection Tools

Teachers' Questionnaire

The questionnaire focused on teachers' use of portfolio assessment and teachers' training on the use of portfolio assessment by the Kenya National Examinations Council (KNEC). Section A collected demographic data such as gender, school type, age, and teaching experience. On a four-point Likert scale, Section B collected data on teachers' use of portfolio assessment in relation to five steps of portfolio assessment, namely: setting learning goals to assess through a portfolio; sharing the portfolio idea in class; deciding on portfolio contents; portfolio presentation; and involving other stakeholders.

Teachers' Interview

In order to triangulate and supplement inferential statistics, a teacher' interview was conducted. The interview focused on the following areas: why and how portfolio assessment is done, types of portfolios, how learners and parents are involved in portfolio assessment, and struggles in portfolio assessment. The interview was voice recorded with the consent of teachers, transcribed, and analyzed

Data Collection Procedures

Data was collected using a teacher's questionnaire and interview schedules. The questionnaire gathered information on teachers' training and use of portfolio assessment and was divided into three sections. Section A focused on demographic information such as gender, type of school, age, and teaching experience. Section B explored how teachers applied portfolio assessment, using a four-point Likert scale based on five key steps: setting learning goals to assess through a portfolio, sharing the portfolio concept with learners, deciding on portfolio contents, presenting the portfolio, and involving other stakeholders in the process. To enhance and supplement the quantitative findings, interviews were conducted with teachers to understand the rationale behind their use of portfolio assessment, the types of portfolios employed, and the extent of learner and parental involvement.

To ensure the reliability of the instruments used, a retest approach was applied. The same participants completed the questionnaire and were interviewed again after a two-week interval. The consistency of responses was measured using the Pearson Product Moment Correlation Coefficient, which yielded a coefficient of 0.74. According to Mugenda and Mugenda (1999), a coefficient of 0.6 and above is acceptable in such studies, thus affirming the adequacy of the reliability measure.

Data collection was conducted during morning hours when the researcher visited schools to identify the selected teachers and obtain their informed consent. Before administering the questionnaire, teachers were guided on how to complete it, and the duration of the exercise was agreed upon. Completed questionnaires were reviewed to ensure all items were answered. Following this, one-on-one interviews were conducted, allowing each participant ample time to respond to the questions. With the participants' consent, a voice recorder was used to capture their responses, which were later transcribed for analysis.

Data Analysis

For data analysis, various categories of data were processed separately. Triangulation was employed during the interpretation and discussion of findings to strengthen the study's conclusions. Quantitative data from the questionnaires were sorted, cleaned, and entered into SPSS software version 22.0. Descriptive statistics were

used to analyze demographic information. To examine whether there was a significant difference in the use of portfolios between public and private schools due to training, an independent t-test was conducted using the average scores derived from the questionnaire responses.

Ethical Consideration

Ethical considerations were observed throughout the study. Informed consent was obtained from all participants through a consent form, and participation was entirely voluntary. Respondents were assured of the confidentiality of their responses, with anonymity maintained by using codes in place of names—particularly when referencing interview data. Participants were respected throughout the study and were free to skip any questions or withhold any information they were not comfortable providing. This approach ensured both ethical compliance and the integrity of the data collected

FINDINGS

Demographic Information on types of Schools

To determine whether there was a difference in the use of portfolios between public and private schools, data on the type of school was analyzed. The results, presented in Table 1, show the distribution of public and private schools that participated in the study. Out of the 80 schools involved, 58 were public schools, representing 72.5% of the total, while 22 were private schools, accounting for 27.5%. This distribution reflects the general proportion of public to private schools across the county, where public schools significantly outnumber their private counterparts. Consequently, the majority of data collected for this study came from public institutions.

Table 1: Type of School

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Public	58	72.5	72.5	72.5
	Private	22	27.5	27.5	100.0
	Total	80	100.0	100.0	

Use of Portfolio Assessment in Public and Private Primary Schools

The first objective of the study aimed to determine the extent to which teachers in public and private schools use portfolios to assess children's learning. Data for this objective was gathered through teachers' questionnaires and interviews. Table 2 presents the percentage of teachers who reported using portfolio assessment compared to those who did not.

Table 2: Extent to Which Portfolio Assessment is used

		Frequency	Percent	Valid Percent		Cumulative Percent
Valid	Yes		74	92.5	92.5	92.5
	No	6	7.5	7.5		100.0
	Total	80	100.0	100.0		

According to the findings, 74 out of 80 teachers (92.5%) indicated that they use portfolio assessment to evaluate their students' learning, while only 6 teachers (7.5%) reported not using it. These results suggest that the majority of teachers have adopted portfolio assessment as a key tool for monitoring and evaluating learning among young children.

This finding aligns with previous studies that have documented similar trends. For instance, Eren (2007) observed that most teachers held favorable views toward portfolio assessment, recognizing its value in capturing learners' progress. Likewise, Chere-Masopha and Mothetsi-Mothiba (2022), in a study conducted in Lesotho, found that all teachers surveyed were open to using portfolio assessment. These educators viewed the portfolio

as a comprehensive record of a student's academic work usually kept in a file or folder and believed it to be an effective assessment method.

The growing acceptance of portfolio assessment is further supported by Muiruri's (2020) study in Embu County, Kenya, where 88% of teachers reported using portfolio assessment, 8% were unfamiliar with it, and only 4% did not apply it. Collectively, these findings reflect a broader trend both locally and internationally highlighting the rising popularity and perceived effectiveness of portfolio assessment in early childhood and primary education settings.

How do teachers carry out portfolio assessment to measure children's learning?

This subsection presents findings on how portfolio assessment is implemented by teachers in Bungoma County. The study examined key indicators such as goal setting, articulating the purpose of the portfolio, involving learners in content selection, establishing scoring criteria, encouraging reflection, defining grading systems, involving school management and other teachers, and engaging parents. These elements were measured using a five-point Likert scale, and the results are summarized in Table 3, which presents individual mean scores for public and private schools.

Table 3: Individual Mean Scores in Teachers' Use of Portfolio Assessment

	Public			Private		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Goal setting	58	2.69	.922	22	2.73	.827
Involving learners	58	2.79	.789	22	2.82	.907
Stating essence of portfolio	58	2.83	.819	22	3.00	.816
Purposeful portfolio content selection	58	2.98	.848	22	3.14	.941
Establish scoring criteria	58	2.76	.924	22	2.82	.958
Reflection on entries	58	2.81	.847	22	2.91	.971
Establish grading system	58	3.10	.931	22	3.00	1.069
Management involvement	58	2.64	.931	22	2.91	1.269
Other teachers' involvement	58	2.83	.901	22	3.00	.976
Parental involvement	58	2.60	.917	22	3.19	.928

The analysis reveals that mean scores across both school types ranged from 2.60 to 3.10. This suggests that the use of portfolio assessment to measure children's learning is fairly regular, though still at a moderate level. Overall, the results point to an average alignment with portfolio assessment standards, indicating that while most teachers are engaging in the practice, many have not yet fully mastered its implementation.

When comparing public and private schools, private school teachers demonstrated slightly higher mean scores across most indicators. For example, private school teachers scored higher in areas such as stating the essence of the portfolio (mean = 3.00 vs. 2.83), selecting purposeful content (mean = 3.14 vs. 2.98), reflecting on portfolio entries (mean = 2.91 vs. 2.81), and especially in involving parents (mean = 3.19 vs. 2.60). These differences suggest that private schools may be more effective in executing certain aspects of portfolio assessment.

These findings are consistent with earlier research by Gökçe (2014), who found that while public and private school teachers shared similar attitudes toward formative assessment, private school teachers were more effective in applying it in their classrooms. Similarly, the current study indicates that teachers in private schools may be better equipped or supported in implementing portfolio assessment strategies, leading to more consistent and comprehensive practices compared to their public-school counterparts.

The analysis of overall mean scores on teachers' use of portfolio assessment revealed a slight difference between public and private schools. As shown in Table 4, teachers in public schools had a mean score of 2.80, while those

in private schools had a slightly higher mean of 2.92. These scores suggest that, overall, the use of portfolio assessment to measure children's learning remains moderate in both school types. However, the slightly higher mean in private schools indicates more consistent application of the method in those settings.

Table 4: Overall Mean Scores in Teachers' use of Portfolio assessment

	Type of School	N	Min	Max	Mean	Std.
Use of Portfolio	Public	58	1	5	2.8034	.69281
	Private	21	1	5	2.9238	.78671

Several contextual factors may explain this difference. Private schools often benefit from smaller teacher-learner ratios and better learning infrastructure compared to public schools. Additionally, student attendance in private institutions tends to be more regular, which supports smoother implementation of continuous assessments like portfolios (Singh & Sarkar, 2023). Baum and Riley (2019) further support this view, observing that pupils in private schools tend to outperform their public-school counterparts by between 0.24 and 0.52 standard deviations.

To gain deeper insight into the variations in portfolio use between the two school types, qualitative data were collected through teacher interviews. These interviews not only highlighted how portfolios were being used but also explored the reasons behind their greater uptake in private schools. It emerged that private school teachers were more engaged in portfolio assessment, while public school teachers expressed more challenges and frustrations in implementing the practice.

Several excerpts from private school teachers highlighted strong support from their school management. One teacher noted, *"The director is pushing us so much… always checking what we are doing with our children in making these portfolios… sometimes he comes and takes part in these processes"* (Teacher 011, Private). Another teacher shared, *"The head teacher is very strict on this issue… she checks on the process regularly"* (Teacher 017, Private). A third added, *"Our head teacher goes through portfolios and gives corrections… she ensures we meet KNEC deadlines"* (Teacher 021, Private). Such statements point to a culture of accountability and proactive supervision in private schools, which supports portfolio implementation.

Parental support was also found to be significantly higher in private schools than in public ones. This factor appears to positively influence the use of portfolio assessment. As noted by one teacher, *"Parents are quick in supporting us financially, like giving money for materials… most pay on time, and that really helps us"* (Teacher 020, Private). In contrast, a public-school teacher lamented, *"More than half of the parents fail to pay money for materials… those who pay do so very late… this delays portfolio work, and we end up rushing to meet deadlines"* (Teacher 053, Public). These perspectives suggest that parental involvement—especially financial support—is more forthcoming in private schools, thereby facilitating smoother portfolio development.

Another notable difference was the issue of workload and time allocation. Private school teachers generally did not view workload as a major obstacle. One explained, *"I usually get time in the afternoon to work on portfolios… I don't have many lessons then"* (Teacher 015, Private). Public school teachers, on the other hand, reported a heavy teaching load that made it difficult to allocate time for portfolio development. *"Where is the time to make these things? I have lessons until evening… we are few teachers, so making time for portfolios is a big challenge"* (Teacher 042, Public). This contrast highlights how a lower student-teacher ratio in private schools creates more flexible time blocks for teachers to focus on alternative assessments.

These findings resonate with earlier studies that suggest private schools tend to perform better in areas such as student achievement, parental involvement, and classroom environment. According to Dronkers and Robert (2008), private schools often have better school climates, which in turn enhance teaching effectiveness. Similarly, Usman, Simvyap, and Fasanya (2019) observed that Nigerian public schools typically have larger class sizes, while private schools provide smaller, more manageable learning groups—making it easier for teachers to implement assessment tools like portfolios.

However, not all studies fully align with these findings. For example, research by Adediwura, Ogunsakin, and Shogbesan (2020) in Ghana found no significant difference in parental perceptions toward portfolio assessment between public and private schools. This suggests that while certain factors—such as management support and workload—may differ by school type, some elements, like parental attitudes, may vary based on regional or cultural contexts.

Overall, the results of this study indicate that while portfolio assessment is moderately used in both public and private schools, its uptake is slightly higher in private institutions. This difference appears to be driven by institutional support, parental involvement, and manageable teacher workloads—all of which create an environment more conducive to effective portfolio use. The study therefore underscores the importance of supportive infrastructure, professional development, and collaborative engagement with parents in strengthening portfolio-based assessment in early childhood education.

Differences in Use of Portfolio Assessment between Private and Public Schools

To determine whether there was a significant difference in teachers' use of portfolio assessment between public and private primary schools, an independent samples t-test was conducted. The hypothesis tested was stated as follows:

H_{01}: There is no significant difference in teachers' use of portfolio assessment to measure children's learning between public and private primary schools.

Using SPSS, the t-test results are presented in Table 5. The analysis showed that the mean difference in the use of portfolio assessment between the two groups was -0.12, with a p-value of 0.513. Since the p-value was greater than the standard significance level of 0.05, the null hypothesis was accepted. This indicates that there was no statistically significant difference in the use of portfolio assessment between teachers in public and private primary schools.

Table 5: Independent Samples t-Test

		Levene's Test for Equality of Variances		**t-test for Equality of Means**						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Use of portfolio	Equal variances assumed	.352	.555	-.658	77	.513	-.12036	.18296	-.48467	.24395
	Equal variances not assumed			-.620	31.926	.540	-.12036	.19429	-.51615	.27542

Further qualitative insights, suggest that the requirement by the Kenya National Examinations Council (KNEC) is a key motivating factor for portfolio use across both public and private institutions. However, many teachers in both settings expressed limited enthusiasm for portfolios as meaningful tools for enhancing learning and assessment. This sentiment was echoed in their interviews, where teachers described portfolio assessment more as a mandated requirement than a pedagogical opportunity.

Similarly, teachers from both public and private schools face comparable challenges in implementing portfolio assessment. These difficulties include content selection, time constraints, and lack of resources or support, and they did not vary significantly between the two school types. These findings suggest that the context of the

school whether public or private does not fundamentally alter the experiences or challenges teachers encounter when using portfolio assessment.

The lack of significant difference is consistent with earlier findings. For instance, Adediwura, Ogunsakin, and Shogbesan (2020), in their study of science teachers in Ghana, also found no significant variation in attitudes toward portfolio assessment between public and private secondary school teachers. This reinforces the notion that structural differences between school types may not strongly influence teachers' perceptions or application of portfolio assessments.

In a related Kenyan study, Kinuthia, Murungi, and Waithaka (2017) found that the assignment of homework by early childhood teachers did not vary significantly based on whether the school was public or private. However, this contrasts with findings by Kohn (2006), who reported that public school teachers assigned homework less frequently than their private school counterparts.

Taken together, the results of the current study highlight that, while there may be slight variations in implementation and institutional support, the actual use of portfolio assessment by teachers does not differ significantly across public and private primary schools in Bungoma County. The challenges and motivations surrounding portfolio use appear to be shared experiences, influenced more by national policy and systemic issues than by the type of school.

Types of Portfolios Used to Measure Children's Learning in Bungoma County.

The second objective of the study aimed to identify the types of portfolios used by teachers in Bungoma County. Data collected was summarized in Figure 1, which illustrates the distribution of portfolio types across both public and private schools.

As shown in figure 1, the most commonly used type of portfolio among teachers is the assessment or evaluation portfolio, preferred in both public and private institutions. Teachers explained that this portfolio type enables them to monitor learners' progress in a comprehensive and holistic manner. Unlike the showcase portfolio, which selectively highlights a learner's best work, the assessment portfolio includes all learning areas, allowing teachers to track development over time. Additionally, teachers noted that the process or working portfolio, which contains work in progress, is useful for documenting the ongoing learning journey.

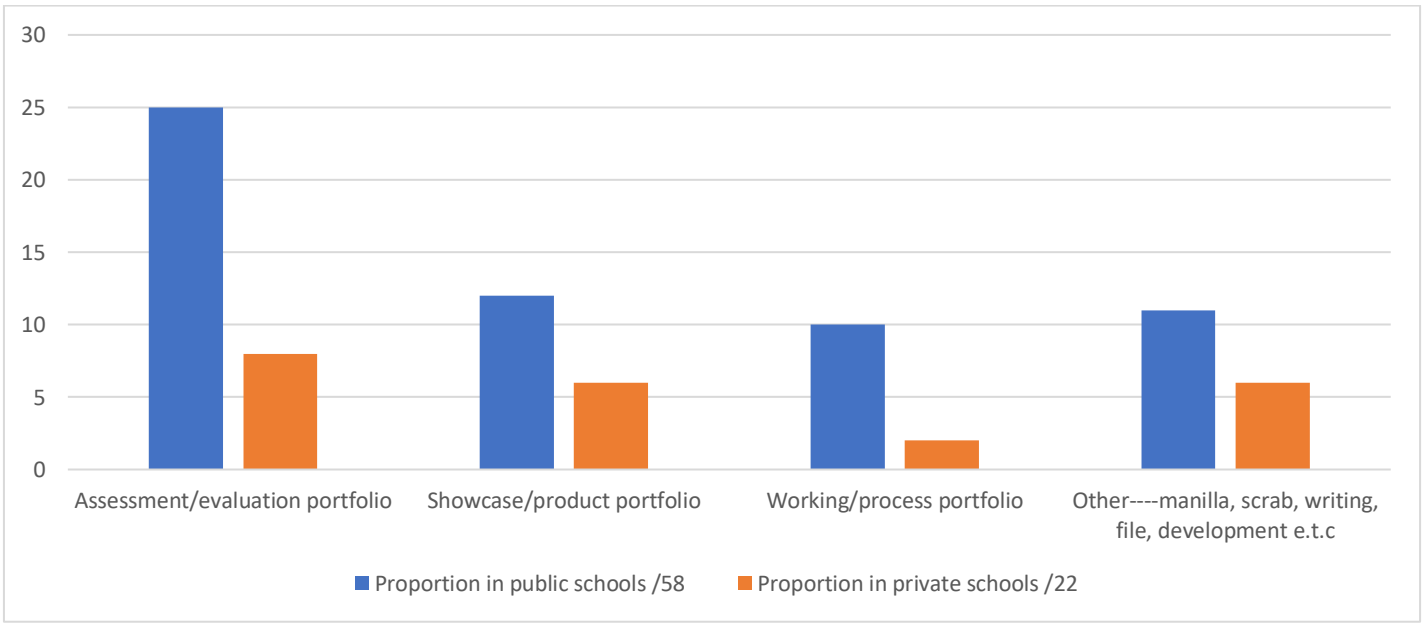

Figure 1: Types of portfolios used in Bungoma County

Teachers who favored the assessment portfolio shared various reasons for their preference. One private school teacher stated, *"I prefer the assessment portfolio because it is easy to analyze information and easy for rating*

learners" (Teacher 002, Private). Another added, *"The reason I use the assessment portfolio is because it carries information from all the learning areas"* (Teacher 008, Public), while a third emphasized, *"Assessment portfolios help teachers understand learners' weaknesses and provide feedback on their achievements"* (Teacher 015, Private).

Those who preferred showcase portfolios offered a different perspective. For instance, a public-school teacher shared, *"I use the showcase portfolio because it enables me to show evidence of learning and achievement"* (Teacher 038, Public). Another teacher explained, *"I like the showcase portfolio because it promotes creativity and innovation among learners… and it's easy for learners to interpret"* (Teacher 010, Private).

Meanwhile, proponents of working portfolios cited their flexibility and accessibility. One public school teacher remarked, *"I use the working portfolio because it makes learning enjoyable"* (Teacher 025, Public), while a private school teacher added, *"The main reason I prefer the working portfolio is because it's easy to make and readily available on a daily basis"* (Teacher 020, Private).

Despite these preferences, the study revealed that many teachers struggled to clearly identify or differentiate between the types of portfolios they used. One teacher admitted, *"These things were taught very fast… let me check in my training manual"* (Teacher 042, Public). Another asked the researcher, *"Do you have bundles on your phone so I can Google the types of portfolios? I've forgotten—it's been long since we were trained"* (Teacher 018, Private). Such responses indicate that while portfolios are in use, understanding of their categories and purposes is limited among some teachers.

This lack of clarity was further highlighted by the diverse and often improvised terminology teachers used to describe portfolios, including names such as "learner's portfolio," "project portfolio," "manila portfolio," "scrap," "picture," "file," and "writing." These names diverged significantly from the three main portfolio types—assessment, showcase, and working portfolios—outlined in the Kenya National Examinations Council (KNEC) training manual. The confusion was best captured by a teacher's candid remark: *"Although I have filled your questionnaire, I have a question… by the way, what is a portfolio?"* (Teacher 026, Public). This suggests that while teachers are engaging in the practice, they may lack a deep understanding of what a portfolio truly entails.

Interestingly, this finding deviates from a previous study by Muiruri (2020), which found that the working portfolio was the most commonly used (46%), followed by the assessment portfolio (36%) and the showcase portfolio (18%). In Muiruri's study, language teachers showed a strong preference for assessment portfolios, while science teachers mostly used working portfolios (70%) and humanities teachers favored showcase portfolios (56%). Teachers of other subjects tended to prefer assessment portfolios, with a usage rate of 65%. However, Muiruri's study did not delve into the reasons behind these choices.

When designing the working portfolio, teachers collect a collection of student work and progress over a unit or a school year. Teacher should give the date of the event; write down the learning objectives, results and standards. There is also a collection of works from the fields of literacy, mathematics and other subjects of learning. On the other hand, the process portfolio consists of the collection of student learning journeys where knowledge and skills are observed. Learner growth is reflected in their interactive use of symbols and thinking skills. Showcase Portfolio show the best samples of works, exhibition of student favorite or important work (Dos Santos, 2024)

In contrast, the current study not only identifies the types of portfolios in use but also provides qualitative insights into teachers' reasoning. It also highlights a significant training gap, suggesting the need for continuous professional development to ensure that teachers not only use portfolios but understand their purpose, structure, and application in improving teaching and learning outcomes.

Challenges Teachers Face in Portfolio Assessment

The third objective of this study focused on identifying the challenges teachers face in implementing portfolio assessment. Data on these challenges were obtained from teacher questionnaires and summarized in Figure 2. The analysis revealed that public school teachers reported more challenges than their private school counterparts, except in two areas **storage problems** and **content selection confusion** where private school teachers also

expressed significant difficulties. Among public school teachers, the most pronounced challenge was **inadequate parental support**, while **storage issues** were the most significant concern in private schools. Notably, **political interference** was the least reported challenge across both school types.

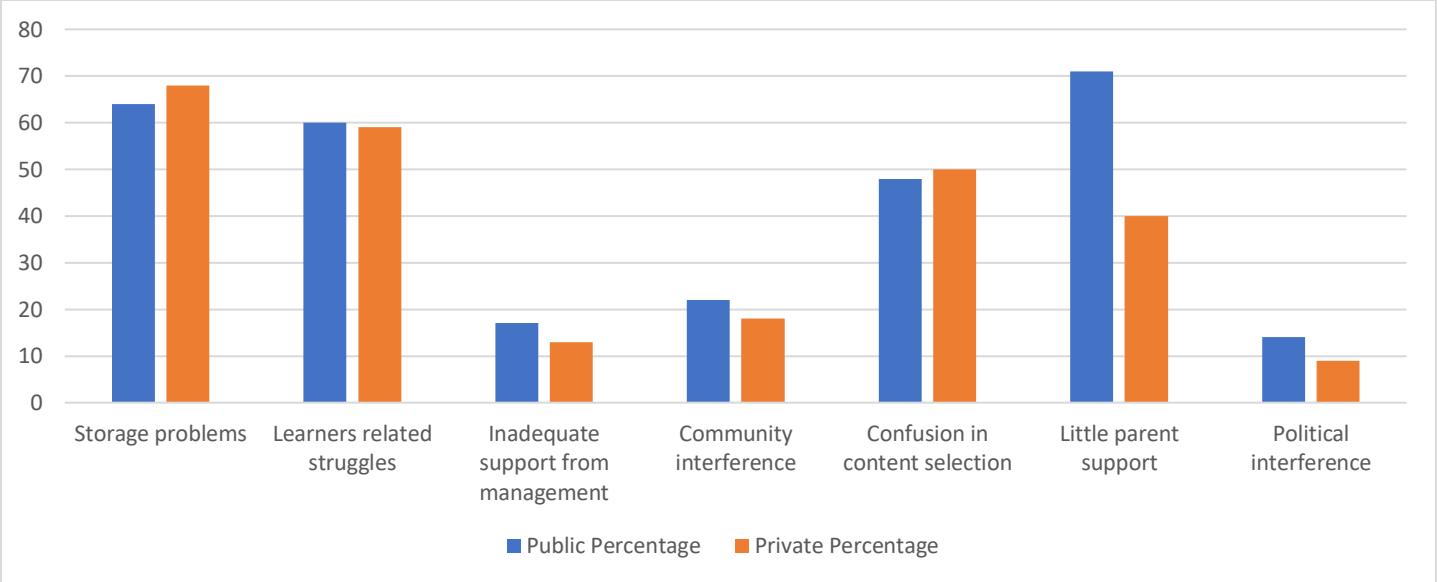

Figure 2: Teachers' struggles in Portfolio Assessment

Storage Problems

Portfolio storage emerged as a common challenge in both public and private institutions. Many teachers reported difficulty in storing portfolios safely, particularly due to limited space and lack of secure storage facilities. As a result, teachers often allowed students to take their portfolios home, which led to damage or loss. One public school teacher explained, *"In this school there is a problem of storing facilities… so if we keep these portfolios in class, they are destroyed by older kids… so we give children to take home. But some throw them on the way… maybe you can advise us…"* (Teacher 045, Public). A private school teacher echoed similar frustrations, stating, *"My class is small and even the office is small… so storing these portfolios is not easy… I give children to go with them at home"* (Teacher 012, Private).

These findings are consistent with Eren (2017), who highlighted similar difficulties with documentation and storage, particularly in large classrooms. Muiruri (2020) also observed that the inability to store portfolios properly made it harder for teachers to assess student progress effectively.

Inadequate Parental Support

In public schools especially, teachers expressed concern over the lack of parental involvement in supporting portfolio assessment. Some parents failed to provide funds for essential materials or discouraged their children from participating in portfolio activities. One teacher shared, *"Sincerely, some parents do not bring the money to buy materials on time… even if you send the child home, the parents do not respond…"* (Teacher 003, Public). Another noted, *"…Some parents tell children that portfolio is useless… so the children relax and are less involved"* (Teacher 013, Public). Similar sentiments were expressed in private schools as well, where some parents assumed that paying school fees absolved them of any additional contribution. According to one private school teacher, *"Some parents think the school is stealing from them when we ask for support… but in reality, the school is going through tough times"* (Teacher 011, Private).

Teachers also observed that **low literacy levels among rural and low-income parents** made it difficult for them to understand and support portfolio assessment. *"Majority of parents do not like portfolio assessment… they are used to positions and marks in report forms, so they are not willing to look at portfolios"* (Teacher 006, Public). A teacher in a private school echoed this, saying, *"Even though the school is private, some parents are semi-*

illiterate… they lack capacity to interpret portfolio results now that they are so used to rankings" (Teacher 007, Private).

Poverty was another barrier that undermined parental support. Teachers noted that many parents struggled to meet basic needs, making educational contributions a lower priority. *"Poverty among parents makes it hard to support learners… with the economic hurdles, parents prefer to buy food first before thinking about school materials"* (Teacher 021). A private school teacher added, *"Many parents are having huge fee arrears… so asking them to support portfolio materials adds more burden"* (Teacher 017).

Challenges in Portfolio Content Selection

Teachers also experienced difficulties in selecting and organizing materials to include in portfolios. Some were overwhelmed by the large volume of student work and struggled to decide what to retain. *"Sometimes you get confused… children work on so many activities, and I struggle to select what to put in the portfolio"* (Teacher 012, Public). Others cited damage to materials before they could be assessed, which hampered grading. *"Children sometimes mishandle materials even before we assess them… some materials are damaged before we are done"* (Teacher 035, Private).

Organizing the content also proved to be a complex task for many teachers. One public school teacher noted, *"Arranging those materials to get the picture of the learner's progress is a problem… I find many portfolios disorganized"* (Teacher 053, Public). Another added, *"…My children heap all their articles together… sorting and arranging them is very tiresome and confusing… and I don't have an assistant"* (Teacher 013, Private).

Learner-Related Challenges

Some challenges were directly related to learner behavior and participation. Teachers reported that students often showed little initiative in developing their portfolios and left most of the work to teachers. *"Many of my children are lazy in making their portfolios… they wait for me to do everything"* (Teacher 055, Public). Others noted that when children took portfolios home, they were frequently returned damaged. *"Some pupils are careless… others write inside them… some get spoiled with soup or water"* (Teacher 015, Private).

Students also struggled to complete assignments on time, especially those with slower learning abilities. *"Some children delay in doing the assignment… some take three or four days"* (Teacher 054, Public). A similar concern was raised by a private school teacher: *"Slow learners delay in finishing their work and make the portfolio assessment delay"* (Teacher 022, Private).

Alignment with Other Studies

These challenges are in line with observations made in other contexts. Eren (2017) reported that portfolios could be difficult to manage in crowded classrooms and are often subject to inconsistent interpretation among assessors. Afrianto (2017) noted that limited comparability and reliability were significant challenges in Indonesia, while Gomez (2000) emphasized the **high cost** of implementing portfolio assessment, particularly in terms of time, materials, and training.

Thomas et al. (2005) also identified a **lack of community and parental endorsement** as a barrier to portfolio assessment adoption. Most parents are accustomed to traditional grading systems and may resist new methods unless adequately sensitized. Without community buy-in and proper training for parents on interpreting portfolios, the potential benefits of this assessment approach may be undermined.

CONCLUSIONS

High Uptake but Moderate Implementation of Portfolio Assessment

The study found that the vast majority of teachers (92.5%) in both public and private schools reported using portfolio assessment to measure children's learning. However, the level of implementation was average, with many teachers yet to master the process or apply it consistently according to best practices.

Minimal Difference Between Public and Private Schools in Overall Use

Although private school teachers scored slightly higher (M = 2.92) than their public-school counterparts (M = 2.80) in their use of portfolios, the independent samples t-test showed that this difference was not statistically significant (p = .513). This indicates that, while there are small variations, teachers across both settings generally implement portfolios in similar ways.

Assessment Portfolios Were the Most Commonly Used Type

Teachers preferred assessment/evaluation portfolios over showcase and working portfolios, citing their ability to provide a comprehensive picture of learner progress. However, there was some confusion among teachers about the types of portfolios, with several unable to clearly identify or differentiate between them. This suggests a gap in knowledge and training.

Multiple Challenges Hinder Effective Portfolio Use

Teachers in both public and private schools reported challenges including inadequate parental support, lack of proper storage facilities, confusion in content selection, and learner-related issues such as carelessness and poor participation. Public school teachers, in particular, experienced more pronounced difficulties, often linked to overcrowding, limited resources, and less parental involvement.

Parental and Administrative Support is Crucial

Private school teachers benefitted from stronger support from school management and, in some cases, more responsive parents. In contrast, public school teachers frequently cited lack of financial and emotional support from parents, many of whom are unfamiliar with portfolio-based assessment and still expect traditional grading systems.

Training Gaps Exist

Despite portfolio assessment being widely used, many teachers lacked a deep understanding of its concepts, purpose, and implementation techniques. Some teachers openly admitted forgetting what a portfolio was or misnaming it, indicating that previous training may have been insufficient, outdated, or not internalized.

RECOMMENDATIONS

Strengthen In-Service Training and Continuous Professional Development (CPD)

There is a clear need for refresher courses and ongoing capacity building for teachers on the effective use of portfolio assessment. Training should focus on understanding the types of portfolios, content organization, grading criteria, and how to integrate learners and parents into the process.

Improve Infrastructure for Portfolio Storage

Schools especially public ones should be supported with storage solutions such as secure cabinets, shelves, or digitized options (e-portfolios) to preserve student work. This will reduce the loss or destruction of portfolio materials and enhance long-term tracking of learner progress.

Sensitize and Educate Parents and Communities

Awareness campaigns and workshops should be conducted to educate parents about the purpose and benefits of portfolio assessment. This will help shift mindsets from an overreliance on traditional report cards to embracing more formative, growth-oriented methods of assessment.

Develop Clear Guidelines and Rubrics for Portfolio Use

The Ministry of Education, through KNEC and KICD, should provide standard templates, rubrics, and examples for different portfolio types. These tools should be made easily accessible and adaptable to different school environments.

Encourage Collaboration among Teachers

Schools should promote collaborative portfolio planning, peer review sessions, and joint assessments. This would enhance consistency in implementation, allow for sharing of best practices, and reduce individual teacher workload.

Allocate Time within the School Schedule for Portfolio Development

Especially in public schools with high workloads, schools should allocate specific time slots during the week for teachers to work on portfolio documentation, review, and reflection. Hiring teacher aides or reducing non-teaching responsibilities could also help.

Targeted Support for Public Schools

Public schools, facing more systemic barriers, should receive targeted support including additional funding, more trained personnel, and community engagement initiatives to ensure that portfolio assessment is not just a policy mandate but a functional part of teaching and learning.

REFERENCES

1. Adediwura, A. A., Ogunsakin, I. B., & Shogbesan, Y. O. (2020). Portfolio Assessment Practice among Science Teachers in Osun State Secondary Schools. Al-Hikmah Journal of Education, 266-273.
2. Aksıt, F. (2016). Implementing portfolios in teacher training: Why we use them and why we should use them. Eurasian Journal of Educational Research, 16(62).
3. Alaçam, N., & Olgan, R. (2016). Portfolio assessment: does it really give the benefits that it purports to offer? Views of early childhood and first-grade teachers. Early Child Development and Care, 186(9), 1505-1519.
4. Baroudi, B. (2014, November). Designing Postgraduate Project Management Programs for Success. In THE 2014 (5TH) INTERNATIONAL CONFERENCE ON ENGINEERING, PROJECT, AND PRODUCTION MANAGEMENT (P. 105).
5. Baum, D. R., & Riley, I. (2019). The relative effectiveness of private and public schools: evidence from Kenya. School Effectiveness and School Improvement, 30(2), 104-130.
6. Byabato, S., & Kisamo, K. (2014). Implementation of school based continuous assessment (CA) in Tanzania ordinary secondary schools and its implications on the quality of education. Developing Country Studies, 4(6), 55-62.
7. Cadigan, F. J., Wei, Y., & Clifton, R. A. (2013). Mathematic achievement of Canadian private school students. Alberta Journal of Educational Research, 59(4), 662-673.
8. Caldwell, D. (2007). Teacher perceptions on student portfolio assessment and implementation.
9. Chere-Masopha, J., & Mothetsi-Mothiba, L. (2022). Teachers' experiences of using a portfolio for teaching, learning, and assessment in Lesotho primary schools. Cogent Education, 9(1), 2023969.
10. Davis, M. H., & Ponnamperuma, G. G. (2005). Portfolio assessment. Journal of Veterinary Medical Education, 32(3), 279-284.
11. De Fina, A. A. (1992). Portfolio Assessment: Getting Started. Teaching Strategies. Scholastic Inc., PO Box 7502, 2931 East McCarty Street, Jefferson City, MO 65102.
12. dos Santos, A. R. (2024). Reflective portfolios: a learning and self-assessment tool. South Florida Journal of Development, 5(10), e4511-e4511.
13. Dronkers, J., & Robert, P. (2008). Differences in scholastic achievement of public, private government-dependent, and private independent schools: A cross-national analysis. Educational policy, 22(4), 541-577.

14. Eren, T. (2007). " A Bridge Between Home and School": Portfolio Assessment in Early Childhood Education (Master's thesis, Middle East Technical University (Turkey)
15. Goodman, N. (2015). Children's Engagement with their Learning using E-portfolios.
16. Grady, D. E. (2013). Elements of parent-teacher conferences that foster parental engagement and home-school partnerships in a rural k-3 elementary school. Edgewood College.
17. Grosser, M., & Lombard, B. J. J. (2005). Portfolio assessment: its role in supporting assessment for learning in schooling. Education as change, 9(1), 42-59.
18. Horvitz, J. E., & Wilcox, J. (2007). Back to Markowitz: The problems of portfolio compartmentalization. The journal of wealth management, 10(1), 43.
19. Kinuthia, L. W., Murungi, C. G., & Waithaka, E. N. (2017). Type Of School, Teachers Professional Qualifications and Teachers Teaching Experience In Pre-Primary One (Pp1) and Pre-Primary Two (Pp2).
20. Kohn, A. (2006). Abusing research: The study of homework and other examples. Phi Delta Kappan, 88(1), 9-22.
21. Kuisma, R. (2007). Portfolio assessment of an undergraduate group project. Assessment & Evaluation in Higher Education, 32(5), 557-569.
22. Lam, R. (2018). Portfolio assessment for the teaching and learning of writing. Singapore: Springer
23. Mackatiani, C. I. (2018). Comparative study on the implementation of quality education in public and private primary schools in Kakamega County, Kenya (Doctoral dissertation, University of Nairobi).
24. Moturi, F. M. (2016). Determinants of teenage pregnancies in Narok county (Doctoral dissertation, University of Nairobi).
25. Mugenda, O. M. Mugenda (1999): Research Methods Qualitative and Quantitative Approaches.
26. Muiruri, E. N. (2020). Teachers And Students Perception On Portfolio Assessment In Secondary Schools In Kenya (Doctoral dissertation, University of Nairobi).
27. Müller, R., Martinsuo, M., & Blomquist, T. (2008). Project portfolio control and portfolio management performance in different contexts. Project management journal, 39(3), 28-42
28. Owuor, E. (2022). A Comparative Study on Factors Influencing Implementation of Competency-based Curriculum in Private and Public Primary Schools in Mbita Sub-County, Kenya (Doctoral dissertation, University of Nairobi).
29. Priscah, M. J., Ronald, O. O., & Tecla, S. J. (2016). Portfolio development as a method of learning, assessment and evaluation in clinical Nursing Education in Kenya. Int. J. Sci. Res. Innov. Technol, 3(6).
30. Qoyyimah, U. (2018). Policy implementation within the frame of school-based curriculum: a comparison of public school and Islamic private school teachers in East Java, Indonesia. Compare: A Journal of Comparative and International Education, 48(4), 571-589.
31. Rao M, S. (2024). Assessment Using Children's Portfolios. Learning Curve, (18), 52-54.
32. Salend, S. J. (1998). Using Portfolios: To Assess Student Performance. Teaching Exceptional Children, 31(2), 36-43.
33. Smith, K., & Tillema, H. (2003). Clarifying different types of portfolio use. Assessment & Evaluation in Higher Education, 28(6), 625-648.
34. Tlokotsi, M. M. (2008). A model to improve the implementation of portfolio assessment (Doctoral dissertation, North-West University).
35. Underwood, T. (1998). The consequences of portfolio assessment: A case study. Educational Assessment, 5(3), 147-194.
36. Usman, I. S., Simyyap, W. L., & Fasanya, A. G. (2019). Challenges of effective implementation of new secondary school physics curriculum in public and private schools in Nigeria. Journal of Science Technology and Education, 7(3), 1-6.
37. Virgin, J. A., & Bharati, D. A. L. (2020). Teachersâ€™ Perception, Plan, and Implementation of Portfolio Assessment in Studentsâ€™ Writing Assessment. English Education Journal, 10(2), 143-153.
38. Wortham, S. C., Barbour, A., & Desjean-Perrotta, B. (1998). Portfolio Assessment: A Handbook for Preschool and Elementary Educators. Association for Childhood Education International, 17904 Georgia Avenue, Suite 215, Olney, MD 20832.