IMPLEMENTING INTEGRATED COMPETENCY BASED ASSESSMENT MODEL FOR JUNIOR SCHOOLS IN KENYA

Eliud O. Oyoo*

*Corresponding Author: eliud.oyoo17@gmail.com

http://orcid.org/0000-0001-7012-4752

Rongo University, Kenya

Abstract

In spite of overwhelming increase in number of graduates entering into the job market globally, there is still high demand for competent workforce in almost all sectors. This has led to a situation where workers have to be re skilled by employers leading to further training expenses yet the workers were assessed and certified as skilled. There is therefore need to come up with a model of effective assessment that would produce real competent work force especially in post COVID 19 era. The objectives of this research were: To identify the preferred competency-based assessment model for Junior schools in Kenya in post COVID 19 era; To identify preferred implementation format of competency based assessment model in Junior schools in Kenya. The research methodology used was document analysis of relevant literature. Survey of documented relevant literature, data collection and analysis were the path followed to come up with research findings. Written or printed materials used included texts, reports, articles, journals, conference presentations and books. Only peer reviewed literature were used in this study and a total of 67 of them were carefully selected and used in the study. The exclusion criteria were made very clear, transparent and none biased to ensure objectivity in the data collected and used in the study. Research findings re-defined Competency based assessment (CBA) as a systematic, collaborative and continuous process of determining the capability of a learner to apply a set of related knowledge, skills, values and attitudes required to successfully perform a task. Most of the respondents (55%) preferred a comprehensive model as being realistic and effective for Junior schools in Kenya. Further, it was concluded that a realistic and effective implementation format model of competency-based assessment is that which involves teachers, students, online technology and other stakeholders (40.3% endorsement) in the post COVID 19 era. Where other stakeholders may not be involved, then at least teachers, students and online technologies should be adopted (35.8% of the respondents endorsed this). These findings should be adopted by Ministry of Education (MoE) and the Kenya National Examination Council (KNEC) for use in Junior School assessment.

Key words: *Competency, skills, Collaborations, Assessment. Employability*

Introduction

Competency based assessment (CBA) is a process where an assessor works with a trainee to collect evidence of competence, using the benchmarks provided by the unit standards that comprise the national qualifications (Coon, 2005). The Kenya National Examination Council (KNEC, 2022), defines CBA as the process of determining the capability of a learner to apply a set of related Knowledge, Skills, Values and Attitudes required to successfully perform a task. CBAs are

opportunities created for students to apply the skills and methods they have learned in their lessons to real world problems and situations to determine if students can synthesize, apply, and evaluate their learning in a purposeful way (Brouse, 2020). Clotilda (2021), note CBA as a rigorous, ongoing process, which aims in testing and building the knowledge, skills, and abilities of the learner.

CBA in education is not just about developing new skills, rather defining the competency levels at different stages of expertise. This helps the learners to gradually progress from novice to expert. The very concept of CBA is to form a super foundation for a succession planning process. Manner, Hernandez and Menendez (2017), further note that CBA is considered an alternative to face the lack of individuals with the appropriate labour abilities – the so-called unemployment. Because of the many social issues on moral decrease among learners in secondary schools such as cheating habits, absences, bullying, student brawls, smoking habits and violent strikes as the effect of the disorganized educational system in developing the character building of learners (Rohani, 2019) and the increasingly many unemployable school graduates, there is need to have a re-look at the assessment processes and procedures. The society is crying to the education sector to give them competent work force. Even though CBA has proven to solve a global problem, there is still a huge gap between the supply and demand of skillful people (Hernández-De-Menéndez, &.; Morales-Menendez, 2017) forcing many employers to spend huge sums of money in retraining the newly hired staffs. This should be a concern among other post COVID 19 era problems.

Several types of integrative CBA can be established which includes: horizontal integration, vertical integration, and spiral integration. When this is done, learners' base of knowledge and skills will be expanded by revisiting topics and connecting them to other disciplines and contexts. Such an approach will enhance learners' abilities to retain and apply information in an array of different settings (Marcotte et al., 2022) which is what many employers want.

Whereas there exists many assessment models, Marcotte et al., (2022) suggested the need to develop an integrated model that can focus on content organization, the systematic building and revisiting of topics as the learner progresses through the curriculum. However, the ability to authentically assess integrated learning remains a challenge for educators. In addition, as learners' knowledge and skills grow, assessing their abilities still proves difficult with only one model,

In a midst of the current confusion in implementing competency based curriculum for Junior schools in Kenya (Onyeka, 2020), it would not only be satisfying in fixing these problems but also timely in filling the existing knowledge gap by addressing assessment model implementation criteria.

Statement of the Problem

The global education policy for CBA is gearing up in today's dynamic world, where the stress is on sharpening current capabilities and developing new ones in order to stay ahead and relevant. In spite of overwhelming increase in number of graduates entering into the job market globally, there is still high demand for competent workforce in almost all sectors. This has led to a situation where workers have to be re skilled by employers leading to further training expenses yet the workers were assessed and certified as skilled. There is therefore need to

come up with a model of effective assessment that would produce real competent work force.

Many countries in the developing world like Kenya are excelling in mass education for all, but the ripple effect is an increasing number of inadequately skilled work force. This makes many employers to further spend a lot of money in further training soon after being hired, if they are to be good fit for the positions. Because many countries are presently struggling with educational reforms, there is need to come up with a well-researched on implementation approach that is realistic, workable, learner friendly, flexible, none punitive and yet collaborative in nature during the post COVID 19 era.

Objectives of the Study

1. To identify the preferred competency-based assessment model for Junior schools in Kenya in post COVID 19 era.
2. To identify preferred implementation format of competency based assessment model in Junior schools in Kenya

Research Question

1. What is the preferred competency-based assessment model for Junior schools in Kenya in post COVID 19 era?
2. What is the preferred implementation format of competency-based assessment model in Junior schools in Kenya?

Theoretical Framework

Competence, competency, and competency-based learning theory was initiated by Good and Brophy (1990), then recently expounded by Holmes, Polman and Turner (2021). It is the guiding framework of competency based assessment. It involves multiple interpretations and understandings by the assessor in respect of what these terms mean, when applied to their own teaching and assessment practices. It is noted that implementing any competency based curriculum is always problematic and requires careful planning. Since this theory provides an overview of the main issues involved in defining competency and assessing competence, along with recommendations for action, it guided on the basis of choosing and combining the assessment tools for a preferred working model. Different combinations of assessment tools can work in different situations and so the theory helped in identifying the appropriate combination of assessment tools for Junior schools in Kenya.

Literature Review

Advancement toward competency-based medical education (CBME) has been hindered by inertia and a myriad of implementation challenges, including those associated with assessment of competency, accreditation/regulation, and logistical considerations. The COVID-19 pandemic disrupted medical education at every level. Time-in-training sometimes was shortened or significantly altered and there were reductions in the number and variety of clinical exposures. These and other unanticipated changes to existing models highlighted the need to advance the core principles of CBME (Ryan, Holmboe & Chandra, 2022) but now in the context of competency based assessment in Junior schools.

To produce teachers with that competency, Microteaching as the course of practicing the pedagogical subjects needs to be redesigned and modified in order to suit the objective of the curriculum (Dewi, 2018). This approach led to the establishment of a workable and effective assessment model in the medical field. The same approach can be used to come up with an integrated model that can fill the gap in

assessment processes in the education sector in Kenya.

Traditional nursing competency assessments use a process-focused approach determined by leaders. A checklist methodology for conducting nursing competencies does not empower nurses to create their own learning experiences. How does the development of an evidence-informed policy for competency assessment utilizing the Donna Wright Competency model compared to current competency assessment practices, improve the guidance for nurse educators in the development of standard work and communications regarding competency assessment? (Gentry, 2022). This was an eye opener question and upon answering it a workable and effective assessment model could be established. Since this approach was very useful in the assessment of trainee nurses on precision ability, the same question and concept can be used in developing and implementing the competency based assessment in Junior schools in Kenya.

The approach should be learner-centered and outcomes-oriented (Haris, et al., 2021), this has worked in Bahasa Indonesia. In view of this, the focus should be on the assessment process: the use of authentic assessment where students can develop their higher order thinking processes through various assessment methods such as creating portfolios, completing assignments, writing papers, participating in group discussions, etc. In the assessments process of learning activities, teachers should be role models, build students' motivation, and develop their potentials and creativity through activities which inspire students to set and achieve goals that challenge them.

Clotilda (2021) recommended a systematic and continuous way of collecting information and documenting what the learner knows and can do before they learn, as they learn and as they transit from one level to another based on specified competencies and criteria. This should be effective in assessing different domains in the learner.

Onyeka (2020), emphasized on a collaborative approach as giving opportunities to learners, peers, teachers and parents to participate and track easily the progress of the learner through real time feedback mechanisms. The researcher noted that the approach should be collaborative in nature with the concerned groups – teachers, learners, parents, peers, the ministry of education and employers as well. The approach should give room for each stakeholder to communicate their reasoning for the desired skill in a learner.

Wright (2015) recommended an approach that focus on skills rather than content - Content is readily accessible at the touch of a finger these days, but skills take time to develop, nurture, and finesse. The skills in focus should be transferable - skills that are related to being "thinkers" or "contributors" to the world around us. There should be no worry on the time factor or syllabus coverage, instead the skills acquired should be the concerns of all the stakeholders.

The approach should start with a self-assessment, followed by an assessor review - It is from here the learner's development needs are identified, with which a development plan is created (Clotilda, 2021). The approach should be flexible and giving room for re-assessment to better the learning.

The approach should cater for attitude and value change – geared towards appropriate work attitude and work value (KNEC, 2022). This

should produce a workforce that loves their work and not forced to do certain duties.

Research Methodology

Survey of documented relevant literature, data collection and analysis were the path followed to come up with research findings. Written or printed materials used included texts, reports, articles, journals, conference presentations and books. The literature used were mainly peer reviewed. The procedure used followed Breuel (2013) format which is as in the following outline:

1. Define the Purpose and Scope of the research study
2. Identify the relevant documents that align with the research objectives. These documents included primary sources (original materials) as well as secondary sources (interpretations or analyses of primary sources).
3. The documents were read through to gain a general understanding of their content and context. Key themes, topics, and issues presented in the documents were taken note of.
4. A coding system was developed to categorize and label different aspects of the documents. This involved identifying themes, concepts, dates, authors, sources, and any other relevant attributes.
5. Applying systematically the coding system to each document. This may involve highlighting or marking sections of text, using software tools, or creating a database to record the coded data.
6. Quantitative or qualitative data were extracted from the coded documents, depending on the research objectives. This could involved creating tables, charts and textual summaries.
7. Data was then extracted for patterns, trends, relationships, contradictions, or other noteworthy findings. Use appropriate analytical techniques (content analysis, thematic analysis, discourse analysis, etc.) to derive meaningful insights from the documents.
8. The findings were interpreted in the context of the research objectives.
9. Based on the analysis, conclusions were drawn that addressed the research questions or objectives. Significance of the findings were highlighted and any implications they had.
10. Clear and well-structured report was prepared that presented the document analysis process, findings, interpretations, and conclusions.

Inclusion Criteria for Document Analysis

Only relevant documents were selected for review in line with the set objectives and the scope of the study. As is recommended by Floridi (2010), the following inclusion criteria guideline was adopted:

1. Published and Peer-reviewed articles or academic publications, official reports, policy documents, legal texts, etc. were used.
2. Published within ten years' time frame were used except for documents from a specific historical period.
3. Documents written in English language were used.
4. Documents addressing competency based assessment were used.
5. Documents reporting on original research studies, documents presenting case studies, surveys, experiments, etc. were used.
6. Documents using mixed research

methodologies (qualitative, quantitative, mixed-methods) were used.
7. Documents that were available and accessible for analysis were used.
8. Documents that directly addressed or contributed to the research questions or objectives were used.
9. Documents for which data or information can be extracted or analyzed were used.

Exclusion Criteria of Document Analysis

The specific criteria used to determine which document was used followed Robertson (2009) recommendations. This was as is given in the following outline:

1. Documents that were not in line with research objectives were left out. Irrelevant or tangential content that did not provide valuable insights were omitted.
2. Documents written in languages other than the English language of analysis were excluded.
3. Documents from unreliable or questionable sources were excluded to maintain the integrity of the analysis.
4. Certain document types were excluded based on their suitability for the analysis. For example, drafts, duplicates, advertisements, or personal communications were excluded because they did not contribute substantially to the research.
5. Documents that were not accessible due to restricted access, copyright limitations, or other barriers, were excluded from the analysis.
6. Documents that had poor quality (e.g., illegible scans, significant text degradation) that hindered accurate analysis were excluded.
7. Duplicate or substantially similar documents were excluded to avoid redundancy in the analysis.
8. Documents displaying overt bias, prejudice, or offensive content were excluded to maintain ethical standards and ensure a respectful analysis.
9. Documents that had extreme outliers or anomalies, and which had skewed analysis results, were excluded.

The exclusion criteria were made very clear, transparent and none biased. This was to ensure that the data collected was as objective as possible.

Quantitative Data Analysis of the Literature Review

The data collected was then analyzed quantitatively using Torraco (2016) and Harris and Helfand (2012) approaches. A combination of the two approaches gave out the following outlined procedural analysis work:

1. Comprehensive relevant literature was selected in line with the research objectives. This was done from credible (peer reviewed) and reliable sources.
2. Data collection framework was designed and developed which was used to extract relevant quantitative data from each source. This framework included categories like study characteristics, sample size, variables measured, research methods, statistical results, and other pertinent information.
3. Data was systematically selected from the sources and the quantitative data that was relevant to the research questions extracted. Detailed notes and recording of the data in a structured manner using a spreadsheet was done.
4. Data was Organized into categories which were summarized in tables

5. Data was then analyzed descriptively.
6. Meta-analysis of data was also done where data was combined and analyzed from multiple studies and overall conclusion drawn.
7. Interpretation of the results was done in the context of the research objectives. The Discussion of the implications of the findings done and related to existing literature.
8. The results were then compared with those from other studies and synthesized quantitatively to identify patterns, trends, inconsistencies and gaps in the existing literature.
9. Discussion of the work was done.
10. Conclusions made based on the evidenced gathered and recommendations given.

Careful attention to detail was given and a strong understanding of statistical methods was embraced.

Results and Discussion

The findings from the relevant literature reviewed point at different models depending on the surrounding circumstances of the learners. If other common factors are the same, then a common integrated approach can be adopted, however, with variations in the contexts, then flexibility in the methods and timings would be appropriate.

The competency based assessment system should develop an assessment instrument that is water tight. Dewi (2018), recommends three forms of assessment instruments that should be developed, namely:

1. Written assessment instrument
2. Simulation of basic skills of assessment instrument
3. Writing lessons and performance of skills desired by employers

Since competency based assessment is a process where an assessor works with a learner to collect evidence of competence, using the benchmarks provided by the unit standards that comprise the national qualifications, it should not be about passing or failing a candidate. Evidence collection is more than just setting a test. During a school term, a learner may be required to undertake a series of tasks for assessment purposes such as assignments (rubrics, checklists and observations), projects, online tests, experiments or practical work and standardized tests. It is the sum of all these assessments that deems a learner to be competent or not (Johnson & Johnson, 2019). The unit of progression in a competency based training system, is mastery of knowledge and skills and is learner focused. The guiding principles according to Wright (2015) are that:

1. The assessment process should be considered to be part of the learning process identifying gaps as learning opportunities to develop skills, not failures.
2. Collaborative process to be negotiated with the learner and not a one-off event that is imposed.
3. In the setting of a training provider, learners can be given many opportunities to demonstrate skill and the assessment process should allow for the capturing and recording of these demonstrations.
4. Flexible on mode of assessment and time of assessment.

A good competency based assessment model should use an outcome-focused and accountability-based assessment approach by identifying employer desired competencies through a collaborative effort between the prospective employers or the educator and staff based on a prioritized need (Wright, 2005). The researcher further suggest that competency

verification should be accomplished through different methods such as guided reflective practice, outcome measurements of daily work, and verification that develops critical thinking. With this in mind, the focus should be on the employability skills or competencies and not just grades.

Assessment Matrices

Both Golembieswski (2016) and Wright (2015) note that, for learners to be competent in a unit standard, they must demonstrate competency in every aspect of the unit standard or topic. They recommend that assessment records should be a continuous process. To ensure that trainees have as many opportunities as possible, it is good practice to record where performance criteria are included in assessments throughout the term. A sample teacher's score card matrix is shown in table 1.

Table 1

Teacher's Score Card Matrix

Prescribed Syllabus Areas	Online / Digital (10Marks)	Rubrics / Checklist / Observations (20 Marks)	Practical / Hands on activities (20 Marks)	Project / presentation work (20 Marks)	Standardized Tests (30 Marks)	Total Score (100)
Topic 1						
Topic 2						
Topic 3						
Topic 4						
Topic 5						
Topic 6						

It should be noted that:

1. The awarding of marks or marks distribution is not fixed and can be adjusted depending on the nature of the topic and time span for teaching the topic as is prescribed in the syllabus.
2. Different learners will be better at different types of assessments and it helps that they have more than one chance to demonstrate their competence in different ways.

From the learner's point of view, they also have the opportunity to participate in the assessment process but they should have a different assessment matrix showing what they have achieved and what they still need to learn as is demonstrated in table 2.

Table 2

Trainee Score Card Matrix

Assessment Type	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
Assessment Type	Date achieved	Date achieved	Date achieved	Date achieved	Date achieved	Date achieved
Online / Digital Portfolio						
Rubrics / Checklist / Observations						
Practical / Hands on activities						
Project work / presentation						
Standardized Tests						
Completion						

Swatson and Holton (2017) noted that the teacher should be signing the trainee's score sheet whenever a given milestone / task is achieved, but it is the duty of the learner to notify the teacher when the given area or task has been achieved and therefore should be assessed.

Rubrics tools should outline specific criteria and performance levels for various skills or tasks while checklists should consist of simple lists of skills or behaviors to be assessed. Teachers should then use these tools to assess and rate students' performance based on predetermined standards (Gilbert, 2017).

Gilbert further suggest that teachers should observe students' behaviors and interactions in different contexts, noting their strengths and areas for improvement, while students should compile a collection of their work over time, showcasing their progress and achievements in a portfolio which should include samples of writing, artwork, projects, and other assignments, allowing for a more holistic assessment of their skills and growth to be considered also in the assessment process.

Rating Scale as Assessment Tool

Russ-Eff and Preskill (2016), recommended the use of a rating scale as individualized alternative model. Here, the learner's performance should be rated using a described category of continuum, but all the domains of assessment should be rated. The assessment-based grading method should explicitly employ tenets of Bloom's (1968) theory of learning for mastery. An agreeable format of a rating scale is the Likert type scale shown in table 3.

Table 3

Sample Rating Scale

Assessment Type	Approaching Expectation (1)	Below Expectation (2)	Average (3)	Above Expectation (4)	Excellent (5)
Online / Digital tests					
Rubrics / Checklists / Observations					
Practical / Hands on Activity					
Presentations / Discussions					
Project Work					
Standard Tests					

If a rating scale is adopted, then each student will be assessed for each prescribed topic facet. Other tools that can be used in CBA are: observation schedules, questions and answers, quizzes, journals, portfolio, learner profiles, anecdotal records, oral or aural questions, questionnaires (KNEC, 2022). The particular ones chosen should depend on the circumstances, the learners and teachers' preferences as well as the set examination policy in the sector.

Coon (2005), recommends that the following should be taken into considerations:

1. A variety of learning outcomes requires different assessment approaches.
2. The trainee is either competent on not yet competent.
3. Flexibility should be encouraged - There should be room for some variation
4. It is not always possible to achieve 100 percent accuracy because of real world limitations of the equipment and components. With this in mind, a student does not have to get 100 percent to be considered competent.
5. All equipment and components have tolerances within which they work best and so this should be taken into account during an assessment program.
6. At the other end of the scale, the qualification contains theory based and research based activities where candidates cannot attain 100 percent accuracy because of the subjective nature of these components.
7. It is up to the assessor to determine the range for competency and then judge if the trainee is competent within that range.
8. Competency does not mean expert - It means that the candidate has attained sufficient skill and knowledge to perform the activity or service to a degree and quality that is acceptable to the industry and the customer in a time within which a competent person at the level could reasonably be expected to perform the task.

Features of a Competency-Based Assessment

Clotilda (2021) and Gentry (2022), all agree on the following as features of a good CBA tool or system:

1. Moving to a knowledge-based economy in education and training
2. Emphasis is on employable skills or competency - becoming progressively more crucial in training enhancement.
3. Acquisition of` new and relevant life-long skills
4. As the economy moves up the value chain, workers or learners are expected to continually acquire new skills and knowledge to remain employable.
5. Human capital becomes the key competitive advantage in a knowledge-based economy.
6. Flexibility for change due to globalization and technology, workers or learners must be highly agile and be able to quickly acquire and apply new skills, knowledge and technologies to continuously create new value, product and services.
7. Systematic way of collecting information and documenting what the learner knows and can do before they learn, as they learn and as they transit from one level to another based on specified competencies and criteria.
8. Uses a wider variety of tools and gives opportunities to learners, peers, teachers and parents to track the progress of the learner through real time feedback mechanisms.
9. Collaborative – between the stakeholders and this gives a reliable structure and consistency

10. The integrated CBA model approach improves pedagogy of educators and in the development of standardized assessment tools

Benefits of Competency Based Assessment

Both Brouse (2020) and Wright (2005) agree on the following as the benefits of CBA:

1. The involvement and engagement of the learner leads to meaningful learning.
2. Students are both motivated by authentic tasks
3. Students become involved in reflecting on their own learning and leading their own goal setting
4. Students see purpose in the assessment at hand - student engagement increases
5. Provides a truer picture of what students are able to do because of their desire to demonstrate their abilities.
6. Affords opportunities for teachers to naturally involve students in the cycle of continuous improvement
7. Brings students back to analyze and discuss their work
8. Student's progress can be tracked over time and any time
9. The role of each stakeholder in the assessment process is clearly outlined and understood by each stakeholder.

Role of Parents

Where parents are involved in the assessment program, Stiggins (2002) outlined their roles as:

1. Providing enabling environment conducive to learning.
2. Instilling values and promote positive attitudes among learners towards the family and the community.
3. Being involved in the student's learning by engaging them, understanding them and monitoring their progress.
4. Providing learners with available or accessible resources for extended activities.

Data collected from the literature reviewed was synchronized and analyzed quantitatively using the basic descriptive statistics on the criteria of the recommended assessment models for Junior school level. The findings are presented in table 4

Table 4: Preferred Assessment *Model for Junior School*

Model type	Frequency	Percentage
Formative Only	14	21
Formative + Summative	16	24
Comprehensive	37	55
Total	67	100

Table 4 shows that 55 percent of the respondents preferred a comprehensive model as being realistic and effective for Junior schools. Comprehensive means multidisciplinary or integrated where many stakeholders are involved as well as many test tools are to be used in the process. The findings are in line with Coon (2005), recommendations that a variety of learning outcomes requires different assessment approaches. Other proponents of this model include Johnson and Johnson (2019) and Golembiewski (2016). The researchers recommend that competency assessment models for junior schools should be designed to evaluate students' skills, knowledge, and abilities in various

areas of development. Such a model will provide a comprehensive understanding of a student's strengths and areas for improvement. It's important to note that a combination of these assessment models may be used in Junior schools to provide a well-rounded evaluation of students' competencies, considering their academic, social, emotional, and creative development. The choice of assessment model should align with the school's goals, curriculum, and teaching philosophy.

Research findings from the relevant literature reviewed further revealed that different authors recommend different formats of implementing the assessment model. When the ratings of their preferences were analyzed, the results are as presented in table 5.

Table 5

Implementation Format for Junior School

Assessor involved	Frequency	Percentage
Teacher + Online	10	14.9
Student + Online	6	10.0
Teacher + Student + Online	24	35.8
Teacher + Student + Online + Others	27	40.3
Total	67	100

Table 5 shows that a realistic and effective implementation format model of competency based assessment is that which involves teachers, students, online technology and other stakeholders (40.3% endorsement). Where other stakeholders may not be involved, then at least teachers, students and online technologies should be adopted (35.8% of the respondents endorsed this). The findings are partially in line with Gilbert (2017) findings and fills in the knowledge gap that was left by Swatson and Holton (2017). The researchers recommended that designing a competency assessment model for Junior schools would requires careful consideration of the specific goals, subjects, and age group involved. These, however should be aligned with curriculum standards, grade-level expectations and break down of each competency into specific learning objectives.

Russ-Eff and Preskill (2016), noted that whatever the assessment method selected, it should address competency and objective compliant. This can however be broken into:

1. Written assessments (quizzes, tests, assignments)
2. Oral assessments (presentations, speeches)
3. Practical assessments (hands-on projects, experiments)
4. Observations (classroom participation, group activities)
5. Portfolios (collection of student work over time)

The researchers all agreed that a timeline should be developed when each assessment should be conducted. Factors such as the school calendar, learning pace, and the need for timely feedback should be considered. Gilbert (2017) emphasized that there is need to communicate to the students when these competencies will be assessed. The assessor should provide guidance on what will be assessed and how they can prepare. In the process practice opportunities should be offered to enable

the students to familiarize with the assessment methods.

In general, offer timely and constructive feedback to students based on their assessment results. In the process highlight their strengths and suggest ways to improve. Keep parents, teachers, and school administrators informed about the assessment model's progress and outcomes. Encourage open communication and collaboration. It is important to remember that the implementation format will vary depending on each school's specific context, curriculum, and resources. It's important to adapt this model to meet the needs of Junior school students while ensuring fairness, validity, and reliability in the assessments.

Conclusion

CBA is a systematic, collaborative and continuous process of determining the capability of a learner to apply a set of related knowledge, skills, values and attitudes required to successfully perform a task. Most of the respondents (55%) preferred a comprehensive model as being realistic and effective for Junior schools in Kenya. Further, it can be concluded that a realistic and effective implementation format model of competency based assessment is that which involves teachers, students, online technology and other stakeholders (40.3% endorsement). Where other stakeholders may not be involved, then at least teachers, students and online technologies should be adopted (35.8% of the respondents endorsed this).

References

Bloom, B. S. (1968). Learning for mastery. Instruction and curriculum. *Regional Education Laboratory for the Carolinas and Virginia, Topical Papers and Reprints*, Number 1. *Evaluation comment* 1.2 (1968): n2.

Breuel, T. M. (2013). High-performance OCR for printed English and Fraktur using LSTM networks. In 2013 12th *International Conference on Document Analysis and Recognition (ICDAR)* (pp. 683-687). IEEE.

Brouse, K. (2020). Competency based assessment: What it is and its benefits. *Graduate Programs for Educators*

Clotilda, M. (2022). Ten things you need to know about competency – based assessment. *Creatrix Campus.*

Coon, D. (2005). *Psychology: A journey*. Belmont: Vicki Knight.

Dewi, K. T. (2018). Developing assessment instrument based curriculum 2013 for teaching micro teaching in English education department of Undiksha. *Science Scholar*

Floridi, L. (2010). Information: A very short introduction. *Oxford University Press.*

Gentry, I. (2022). *Evidence based practice for nursing skills competency assessment: A policy development project for standard work utilizing the Doma Wright competency model*. University of St Augustine for Health Sciences https://doi.org/10.46409/sr.USVK9446

Gilbert, T. F. (2017). *Human competence: Engineering worthy performance*. Routledge.

Golembiewski, R. T. (2016). Measuring change and persistence in human affairs: Types of change generated by OD designs. In M. Beyerlein, M. Harris, S. Gibson, & D. Sheppard (Eds.), The 2016 annual: Volume 1, *Advances in group processes* (pp. 3-26). Emerald Group Publishing Limited.

Good, T. L., & Brophy, J. E. (1990). *Educational Psychology*. (4th ed.). London. Longman publishers.

Haris, I., Pulukadang, Wiwy, T., Husain, R., Ilham, A., Abdullah, Gamar, (2021). Improving the Quality of Competency-Based Assessment through a Classroom Training Activity. *MEXTESOL Journal*.

Harris, R. J., & Helfand, M. (Eds.). (2012). Research synthesis methods (Vol. 1). *Springer Science & Business Media.*

Hernandez-de-Menendez, M., & Morales-Menendez, R. (2017). Competency based education – Current Global Practices. *Universitat Politcnia de Valencia*. DOI:10.4995/head17.2017.5536

Holmes, A. G. D., Polman, T. M., & Turner, S. L. (2021). *Competence and competency in higher education, simple terms yet with complex meaning: Theoretical and practical issues for university teachers and assessors implementing competency-based* http://www.nytimes.com/2013/11/03/education/edlife/degrees-based-on-what-you-can-do-not-how-long-you-went.html.

Johnson, D. W., & Johnson, R. T. (2019). Positive interdependence: Key to effective cooperation. In S. J. Harkins, & K. A. Williams (Eds.), *Social loafing and social compensation: The dynamics of motivation in groups* (pp. 137-155). Psychology Press.

Kenya National Examination Council (2022). Competency based assessment in Kenya. *Educationnewshub.co.ke*

Marcotte, Kayla M., Gruppen, Larry, D. (2022). Competency-based education as curriculum and assessment for integrative learning. *Education Sciences.*

Onyeka, N. (2020). *Everything you need to know about competency-based assessment*. https://resources.hrs.ca

Robertson, S. (2009). Understanding inverse document frequency: On theoretical arguments for IDF. *Journal of Documentation, 65*(4), 553-570.

Rohani, N. (2019). Drug-drug interaction predicting by neural network using integrated similarity. *Scientific Report*. Nature.com

Russ-Eft, D., & Preskill, H. (Eds.). (2016). Evaluation in organizations: A systematic approach to enhancing learning, performance, and change (2nd ed.). Basic Books.

Ryan, M. S., Holmboe, E. S., & Chandra, S. (2022). Competency-based medical education: Considering its past, present and a post COVID-19 era. *Academic Medicine.10.1097*/ACM.0000000000004535

Stiggins, R.J. (2002) Assessment Crisis: *The Absence of Assessment for Learning*

Swanson, R. A., & Holton III, E. F. (2017). *Foundations of human resource development*. Berrett-Koehler Publishers.

Torraco, R. J. (2016). Writing integrative literature reviews: Guidelines and examples. *Human Resource Development Review, 15*(4), 404-428.

Wright, D. (2015). Competency assessment field guide: A real world guide for implementation and application. *Creative Health Care Management*.

Wright, D. (2005). The ultimate guide to competency assessment in health care (3rd ed.). *Creative Health Care Management*