



Competency-Based Education: Components, Relevance, and Challenges in the Indian Context

¹Dr. Venkateswar Meher

*Faculty of Education, Department of Education
AnchalDegree College Padampur, Bargarh-768036, Odisha, India*

²Ms Sasmita Meher

*Faculty of Education, Department of Education
AnchalDegree College Padampur, Bargarh-768036, Odisha, India*

Date of Submission: 10-02-2024

Date of Acceptance: 25-02-2024

ABSTRACT

Competency-based education also plays a vital role in orienting the concept and process of education and developing a better understanding of knowledge, skills, and attitudes essential for the students to get success by offering quality education. This paper is thematic and review-based, where an attempt has been made to analyse the related literature of competency-based education with reference to its salient features, components, relevance, and challenges in its implementation in the Indian context. The critical analysis of related literature made it clear that CBE is an innovative strategy for teaching, assessing grading, and reporting learners in terms of their ability to demonstrate specific learning skills. However, before the implementation of CBE, faculty members and other stakeholders of education should be consulted and their feedback should be taken about the structural changes and it should be towards a more equitable future for the students. CBE gives a fair opportunity to all learners to excel in their studies; time and effort are dedicated to achieving positive educational outcomes, so proper steps should be taken to implement CBE in the context of the National Education Policy 2020.

Keywords: Competency-based education; Competency-based learning; Competency-based pedagogy

I. INTRODUCTION

Education is a process of bringing about permanent modification in the behaviour of human beings. It is considered one of the greatest weapons the human being has to conquer the whole world. It makes individual life flexible and helps people to fulfill their basic needs. It is a necessity for human

beings as it helps for developing their knowledge, skills, attitude, aptitude, etc. It enables human beings to make the impossible possible through the right efforts. It shows paths to human beings for the accomplishment of their goals. So far as the skills required in the 21st century is concerned, education can be considered one of the best means of acquiring 21st-century skills and using the same in their life. In this context, it can be said that education develops competencies of the individual in varied fields, so the right education is the need of the hour. By realizing the significance and relevance of competency of the individuals, Competency-Based Education (CBE) is given due emphasis as a framework for teaching, learning, and assessment purpose. This CBE focuses on developing competencies among the students where the student's demonstration of student's knowledge and skills are required to accomplish the pre-determined competencies.

According to Sturgis et al., (2011) CBE enables students to demonstrate mastery in their learning and develop competencies among them which includes explicit, measurable, and transferable learning objectives and the students receive timely learning support. CBE develops the abilities of the students to get mastery of different skills, knowledge, and strategies at their own pace. In the present context, CBE has been developed significantly as one of the most important methods of connecting knowledge and skills (Parson et al., 2018). CBE also plays a vital role in orienting the concept and process of education and developing a better understanding of knowledge, skills, and attitudes essential for the students to get success by offering quality education (Johnstone & Soares, 2014). It is outcome-based and student-centered



instruction that allows students to proceed to an advanced level of mastery (Henri et al., 2017).

CBE is an innovative technique for the organization of learning materials and content or delivery taking into account the competencies of the students (Smith, 2013). Generally, in the case of traditional learning focus is given to the time spent in the classroom, but in the case of CBE, more emphasis is given to the student's learning and its assessment (Fain, 2009). In CBE the assessment of a student's progress in learning is done with the help of credit hours based on specific criteria (Ordonez, 2014). Oroszi (2020) explained CBE in terms of offering the previous learning experience of students to achieve mastery and suggested the transformation and accommodation of the needs and demands of the students in CBE with an online setting.

In CBE, the educational situation is transformed from concept and theory to new reality (Goldhamer, 2020), and also more emphasis is given to professional activities and advanced curriculum. It helps for real-time assessment of students' learning and provides a platform for learning by emphasizing the competencies and proficiencies of students.

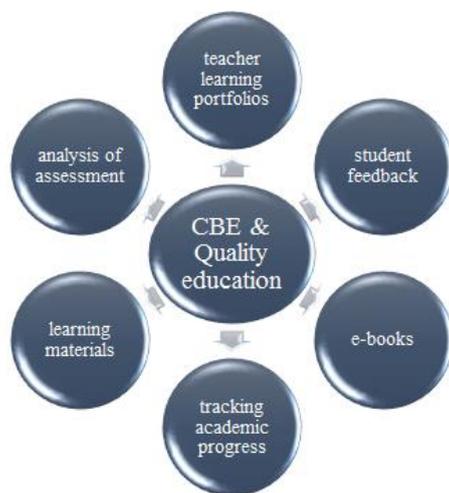


Figure 1. Functions of CBE in terms of quality education (Source: Hsiao, 2020)

The figure above reveals the important functions of CBE in terms of quality education which gives a clear picture of the important aspects of CBE with have direct connections with quality education. From these perspectives, it can be said that CBE acts as a guide for the assessment of learners' feedback on their academic achievements in terms of their demonstrated skills, knowledge acquisition, and competencies. In CBE, more focus is given to the practical aspect of the curriculum, which is concerned with outcome-based education. In an educational context, it is a fact that some sorts of challenges arise, so in this field, CBE helps the academicians to relate the purpose, application, and design of education for reflection towards the educational challenges in relation to the contemporary demands. With the help of CBE, the students get opportunities to explore alternative learning.

CBE also plays an important role in navigating the learning process of students and provides support to enhance the educational aspect. It provides opportunities for the students to explore the benefits of CBE and educational instruction (Anderson, 2018).

FEATURES OF COMPETENCY-BASED EDUCATION

CBE presents a modification from timely-based education to an outcome-based education which is ultimately concerned with the development of competencies of students in terms of knowledge, skills, attitudes, etc. (Evan et al., 2020). CBE plays the most significant role in the present context and has become a need (Kostikova et al., 2019). In this method, students are allowed to learn a particular skill at their own pace, as a result of which students become able to master pre-determined learning outcomes before going to a higher level (Henri et al., 2017).

The following chart shows the basic features of CBE.

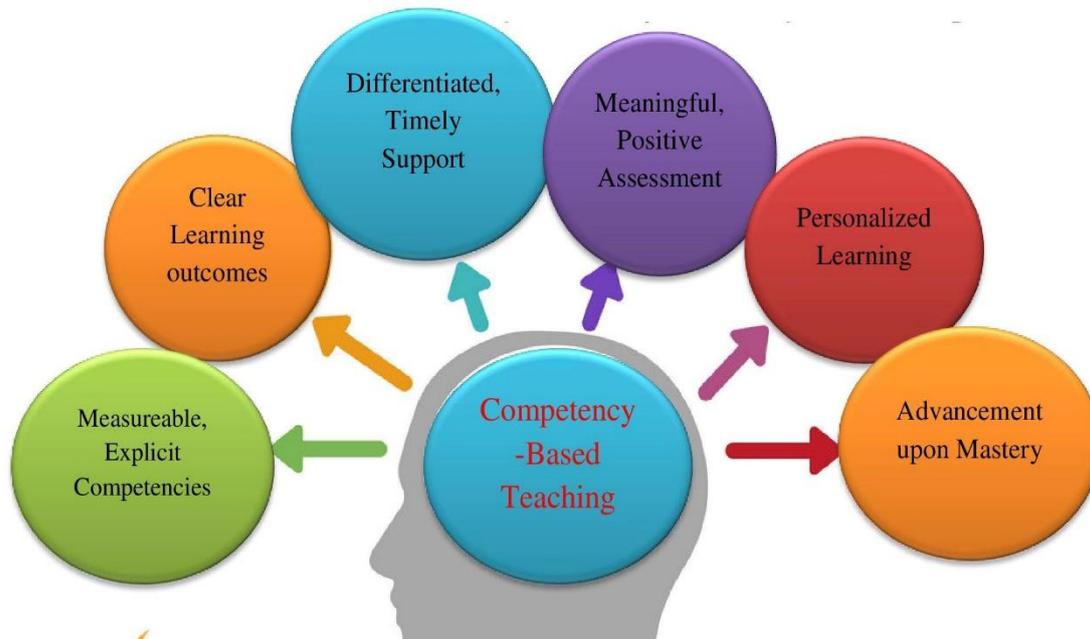


Figure 2. Salient features of CBE (Source: Compiled by authors)

In the present thematic paper, some sorts of related literatures were collected and analysed to derive the key features of CBE (Johnstone & Soares, 2014; Kris et al., 2014; Williams et al., 2015; Fowler, 2018; Parson et al., 2018, Ralf et al., 2020). After analysing the collected literature, the following key features were found.

- It is learner-centric in nature.
- It is outcome-based approach.
- It is differentiated approach.
- It is considered an efficient and potential tool having lower-cost options for students, so it can cater to the needs of almost all students of different socio-economic backgrounds.
- It gives a better understanding to the learners regarding their learning outcomes.
- It covers courses, learning resources, and different assignments with respect to well-defined goals.
- It acts as a powerful tool for increasing motivation and engagement of the students.
- It helps in increasing retention of the students by focusing on their prior learning.
- It develops skills of the students to recognize, manage and build their own competence continuously.
- It acts as a tool for continuous improvement of different courses and programmes.
- It enables students to get successful outcomes around the preparation for lifelong learning and career too.
- It helps students to get mastery recognizing their competency and use it in real-life situations.
- It provides students with timely and differentiated instruction and academic supports.
- It applies some sorts of pedagogical principles by giving due emphasis on the intrinsic motivation of the students.
- It is based on personalized system of assessment and also personalized learning cycle based on learning outcomes.
- It gives importance to the transfer of knowledge and skills.
- It is based on some sorts of mechanism for ensuring mastery of knowledge and skills on the part of the learners.
- It gives importance on the strategies for communicating learning supports to the students.
- It follows a more practical and professional approach than traditional education.
- It is real-life based and application oriented.
- It measures learning outcomes in behavioural terms.
- It helps students to go beyond mere accumulated knowledge.



- It gives emphasis on the minimum required core content.
- It is based on child-centric pedagogy.
- It gives due emphasis on individual achievement.
- It is based on interdisciplinary instruction and collaborative learning.
- It supports self-directed and customized learning.

- It facilitates standard-based challenges and collaboration.
- It is based on teacher support and preparation for dynamic environment.
- It empowers students to take important decisions about their learning experience.
- It is based on meaningful assessment of student's learning.
- It is cost saving.
- It can be combined with online learning.

After analysing the salient features of competency-based education, it can be said that CBE is having a different dimension and objective as contrast to traditional education in the following ways.

Sl.No	Competency based Education	Traditional Education
1	It is cognitive in nature.	It is behavioural in nature.
2	It is outcome-based.	It is content-based.
3	It is based on demonstration of independent practice.	It is based on dependent learning.
4	It is based on successive stages towards mastery of subject matter.	It is based on accumulation of knowledge, facts and concepts.
5	It is based on individualized instructions as per the needs of the students.	It is based on same identical instruction.
6	It is based on knowledge and disciplinary skills at the starting point of curriculum.	It is based on realistic practical situations at the starting point of curriculum.
7	Students remain active.	Students remain passive.
8	It collaborates disciplines (interdisciplinary)	It separates disciplines.
9	Assessment is based on criterion/proficiency/competency.	Assessment is based on percentage system.
10	It is based on competence portfolio and individual development plan.	It is based on course attendance.

Table 1. Difference between CBE & Traditional education (Source: Compiled by authors)

Structural difference is the big difference that differentiate CBE from traditional education. In CBE learning progression is structured around mastery of competencies.

COMPONENTS OF COMPETENCY BASED EDUCATION

The academic mastery of students focusing valuable skills and knowledge is one of the most significant components of CBE as it provides opportunities to the students to grow with their own skills. However, so far as the components of CBE are concerned, it can be said that there is no any fixed component, it varies from context to context.

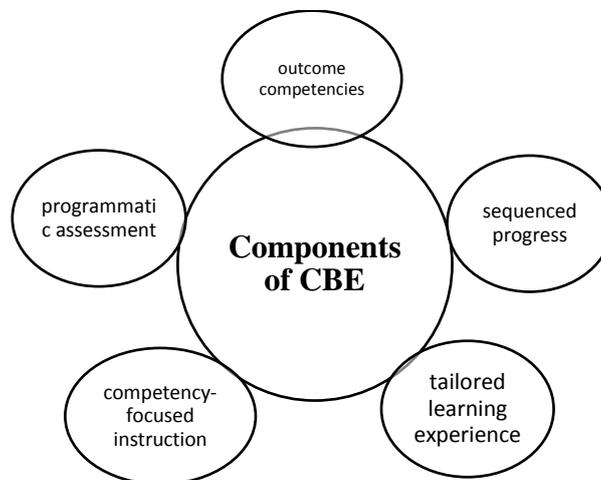


Figure 2. five Components of CBE (Source: Chaney and Hodgson, 2021)

CBE is based on five core elements i.e., “1. clearly articulated outcome competencies required for practice, 2. sequenced progress, 3. tailored learning experiences, 4. competency-focused instruction and 5. programmatic assessment” (Chaney and Hodgson, 2021). The first component deals with competency framework by considering interrelated and purposeful competencies based on the needs of the society and individuals. The second component deals with designing and preparing curricular frameworks and assessment for sequencing the academic progress of the students in relation to educational programme. The third component deals with maximum time required for the students, providing opportunities for academic progress and allowing to remove time-based training. The fourth component deals providing instruction to the students by focusing on their competencies and promoting outcome-based education, it requires proper knowledge and understanding of the faculty members about the curricular reforms made time to time. The fifth component deals with assessment which is considered as a system of assessment (Vleuten&Schuwirth, 2005), it contains varieties of assessment tools for holistic evaluation of the learner’s academic progress individually.

Sandllin&Shendy (2019) defined five standardized components of CBE i.e., accessibility, authentication & configuration, content, data security & compliance and documentation & formatting. For the implementation of CBE, initially there is a need to verify the accessibility by the authorized entities, then after authentication by students, received and institution. There is a need of content, data security and compliance and documentation and formatting in digital format

(Sandllin&Shendy, 2019). All these cited components are the standardized components of CBE.

According to Fine (2017), there are three fundamental key elements of CBE i.e., transparency, intentionality and clarity. In educational context, the teachers need to be transparent with the student’s skills and he should build confidence among them. The teachers need to be thoughtful and frame goals in mind to draft the competencies and outcomes among the students. Which helps the students to think of intentional competencies. The teachers and students should have clarity about their own task in the regard. They should understand the concept of competencies and outcomes in behavioural terms as these concepts have significant impact.

According to Ark (2012) competency-based learning has 10 core elements viz. intellectual mission, standards, progress monitoring, grouping, reporting, content, tools, teacher support, evaluation system and community connections (Ark, 2012). CBE focuses on preparation of students for a fruitful future with intellectual mastery of the subject matter.

RELEVANCE OF COMPETENCY BASED EDUCATION

CBE is loosely concerned with providing quality education to the students as it deals with a unique system of instruction, grading, assessment, academic writing and achievement and also deals with academic progress of the students too (Mallillin et al., 2021). In this education system, focus is given on the student’s learning outcomes and proficiency of the subject matter, therefore, it



can be said that CBE has wide educational significance in present context.

CBE has relevance in Indian context in the light of the following points

- Preparing students for a bright future
- Bringing allround development of children
- Empowering ownership of students
- Empowering individuals to reach their potential
- Enhancement of student's experiences
- Welcoming non-traditional learners
- Offering time and location flexibility programme
- Helping students to save of time and money
- Encouraging productivity among students
- Aiming for mastery of subject matter among students
- Producing more competent learners
- Development of confidence among students with mastery of skills
- Increasing retention rate among students
- Developing greater understanding of learning outcomes among students
- Development of motivation and academic engagement among students
- Development of student's abilities in recognizing, managing and continuously building open their own competencies
- Providing outcome-based framework for continuous improvement
- Empowering learners to explore diverse learning opportunities
- Empowering students to develop an academic identity in terms of managing competencies

From the above discussion, it can be said that CBE has wide implications in Indian context as the CBE is diverse and continue to evolve through the work of effective practices, models trends, policies etc. In this context, the research studies also reveal that CBE is one of the valuables methods for all the stakeholders of education, where the stakeholders get opportunities to take ownership of their learning, develop the pathway of lifelong learning and grow professionally in relation to learning outcomes (Everhart, 2014).

CHALLENGES OF COMPETENCY BASED EDUCATION IN INDIAN CONTEXT

CBE has relevance in the present context to a great extent, still, some sorts of challenges are noticed in this regard. Despite the willingness of the stakeholders of education regarding the

implementation of CBE at the degree level, a smaller number of people know less about its implementation part (Dragoo & Barrows, 2016; Bosman & Arumugam, 2019). However, a smaller number of related literatures have been found about the curriculum design of CBL (Jennifer et al., 2017; Ryan & Cox, 2017; Torres et al., 2018). Lack of interest and understanding regarding the basic features and implementation strategies have been found as one of the biggest challenges in the field of CBE (Bennett & Walston, 2015), as a result of which it is becoming extremely difficult to measure the required competencies of the students. In this regard, some sorts of institutional barriers have also been proved in empirical studies. CBE decreases student-teacher interactions in classroom setup as much more emphasis is given to developing competencies among the students to a great extent, so it can become a challenge in this regard (Shapiro, 2014). However, CBE does not have its major weakness, still, some sorts problems may be found in its practical implementations, therefore, capability approaches can be followed as it has wide educational implications (Lozano et al., 2012).

The analysis of related literature revealed some sorts of challenges in implementing CBE in the Indian context (Muneja, 2015; Makunja, 2016; Ndyambaje, 2018; Hipolite, 2019; Momanji&Rop, 2019; Sifuna& Obonya, 2019; Marion, 2020), which are as follows;

- Lack of adequate competent teachers
- Inadequate training of teachers about the implementation of CBE
- Lack of essential infrastructure in institution
- Deficiency of essential TLMs
- Inadequate pupil-teacher ratio
- Personalized tutoring
- Challenges with regard to knowledge
- Challenges with regard to quality education
- Lack of supports and cooperation from parents and guardians
- Differential perceptions of people
- Challenges in implementing a competency-based curriculum with reference to
 - Preparation of CBE curriculum framework
 - Achievement of academic excellence
 - Meeting diverse academic needs of large number of students
 - Infrastructure facilities
 - Instructional facilities
 - Standardization of assessment



- Expectations of performance of stakeholders
 - Financial perspectives
- Targeted learning processes based on specific competency is the focus area of CBE curriculum which enable students to get mastery of the skills or competence. Taking into account the significance of CBE and the possible challenges in Indian context, it can be said that essential steps should be taken for the preparation and implementation of CBE frameworks.

II. CONCLUDING REMARKS

After analysing the concept and relevance of CBE, it can be said that CBE is an innovative strategy for teaching, assessing grading, and reporting learners in terms of their ability to demonstrate specific learning skills. One of the most important characteristics of the CBE is that it allows students to learn at their own pace and also it acknowledges different learning styles on the part of the students. The CBE is closely associated with e-learning, so in this context, it can be said that it has a significant impact on students' learning in the present context. The CBE is not a new term as it was introduced in the early 1960s through the 1970s (Nodine, 2016), still, the relevance of CBE is there in the Indian context. Research studies also revealed a significant impact of CBE on students learning in terms of the development of interpersonal skills, communication skills, collaborating skills, etc. (van Griethuisen et al., 2019). The CBE can be implemented in the context of the teaching-learning process with the help of a learning management system (Bouchrika, 2022). Before the implementation of CBE, faculty members and other stakeholders of education should be consulted and their feedback should be taken about the structural changes and it should be towards a more equitable future for the students (Curry, 2017). CBE gives a fair opportunity to all learners to excel in their studies; time and effort are dedicated in order to achieve positive educational outcomes, so proper steps should be taken to implement CBE in the context of National Education Policy-2020.

References

- [1]. Anderson, L. (2018). Competency-based education: Recent policy trends. *The Journal of Competency-Based Education*, 3(1), e01057.
- [2]. Ark, T. V. (2012). Ten elements of competency-based learning. Retrieved from <https://www.gettingsmart.com/2012>,
- [3]. Bennett, C. J., & Walston, S. L. I. (2015). Improving the Use of Competencies in PublicHealth Education. *American Journal of Public Health*, 105, S65-S67. <https://doi.org/10.2105/AJPH.2014.302329>
- [4]. Bouchrika, I. (2022). Competency-based education guide: Benefits and differences to traditional education. Retrieved from <https://research.com/education/competency-based-education>.
- [5]. Bosman, L., & Arumugam, S. (2019). A scaffold and competency-based learning approach to innovation related thinking frameworks. *Proceedings of the ASEE Annual Conference & Exposition*, 393-2403.
- [6]. Chaney, K. P., & Hodgson, J. L. (2021). Using the five core components of competency based medical education to support implementation of CBVE. *Front. Vet. Sci.* <https://doi.org/10.3389/fvets.2021.689356>.
- [7]. Curry, L. (2017) Implementing competency-based education. *Collected Essays on Learning and Teaching* 10, 61-73. Retrieved from <https://doi.org/10.22329/celt.v10i0.4716>
- [8]. Dragoo, A., & Barrows, R. (2016). Implementing competency-based education: Challenges, strategies and a decision-making framework. *The Journal of Continuing Higher Education*, 64(2), 73-83. DOI: 10.1080/07377363.2016.1172193
- [9]. Evan, T. et al. (2020). Exploring faculty perceptions of competency-based medical education and assessing needs for implementation in obstetrics and gynaecology residency. *Journal of Obstetrics and Gynaecology Canada*, 42(6), 707-717. DOI: <https://doi.org/10.1016/j.jogc.2019.10.034>
- [10]. Everhart, D. (2014). 3 key characteristics of competency-based learning. Retrieved from <http://www.blackboard.com>
- [11]. Fain, P. (2009). At public universities: Less for more. *The New York Times*.
- [12]. Fine, S. (2017). The three key elements of competency-based teaching and learning. Retrieved from <https://www.globalonlineacademy.org>



- [13]. Fowler, A. (2018). Transitioning to competency-based grading, (Unpublished Doctoral Dissertation). Carson-Newman University, Tennessee, United States.
- [14]. Goldhamer, M. E. J., Pusic, M. V., Co, J. P. T., & Weinstein, D. F. (2020). Can covid catalyze an educational transformation? Competency-based advancement in a crisis. *New England Journal of Medicine*, 383(11), 1003-1005.
- [15]. Hipolite J. (2019). Teachers' strategies in addressing challenges of implementing competence-based curriculum: The case of selected public secondary schools in morogoro municipality (Unpublished Master's Thesis In Mzumbe University in Tanzania)
- [16]. Hsiao, C. T., Chou, F. C., Hsieh, C. C., Chang, L. C., & Hsu, C. M. (2020). Developing a competency-based learning and assessment system for residency training: analysis study of user requirements and acceptance. *Journal of medical Internet research*, 22(4), e15655.
- [17]. Henri, M., Johnson, M., & Nepal, B. (2017). A review of competency-based learning: tools, assessments and recommendations. *Journal of Engineering Education*, 106(4), 607-638. DOI: 10.1007/s40037-018-0481-2.
- [18]. Jennifer, S., Ellen, B., & Jessica, H. (2017). Competency-based education in a traditional higher education setting: A case study of an introduction to psychology course. *International Journal of Teaching and Learning in Higher Education*, 29(2), 412-428.
- [19]. Johnstone, S. M., & Soares, L. (2014). Principles for developing competency-based education programs, *change: The Magazine of Higher Learning*, 46(2), 12-19. DOI: 10.1080/00091383.2014.896705
- [20]. Kostikova, I., Viediernikova, T., Holubnycha, L., & Miasoiedova, S. (2019). The competency-based approach to passing first certificate in English. *Revista Romaneasca pentru Educatie Multidimensionala*, 11(1), 117-130. <https://doi.org/10.18662/rrem/100>
- [21]. Kris, C., & Yvonne, S. (2014). College for America: Student-centered, competency-based education. *Change: The Magazine of Higher Learning*, 46(6), 6-13. DOI: 10.1080/00091383.2014.969141.
- [22]. Makunja G. (2016). Challenges facing teachers in implementing competence-based curriculum in Tanzania: the case of community secondary schools in morogoro municipality. *International Journal of Education and Social Science*, 3(5), 23 – 33
- [23]. Mallillin L. T. D. et al (2021). Competency based-learning and quality education in the new normal modality of teaching. *East African Scholars J Edu Humanit Lit*, 4(4), 156-166.
- [24]. Marion, D. (2020). Challenges experienced by educators in the implementation of competency-based curriculum programme in Kenya: The Case of Primary Schools in Kenya (Unpublished Masters Project, the United States International University – Africa)
- [25]. Momanyi, J. M., & Rop, P. K. (2019). Teacher preparedness for the implementation of competency-based curriculum in Kenya: A survey of early grade primary school teachers' in Bomet East Sub-County. *The Cradle of Knowledge: African Journal of Educational and Social Science Research*, 7(1), 10-15.
- [26]. Muneja, M. S. (2015). Secondary School teachers' implementation of the competency-based curriculum in the Arusha Region, Tanzania (Doctoral dissertation, University of South Africa).
- [27]. Ndayambaje, I. (2018). Implementing CBC: Successes and challenges. Rwanda Education Board.
- [28]. Nodine T.R. (2016). How did we get here? A brief history of competency-based higher education in the United States. *The Journal of Competency-based Education*. 1, 5-11. Retrieved from <https://doi.org/10.1002/cbe2.1004>
- [29]. Lozano, J. F., Boni, A., Peris, J., & Hueso, A. (2012). Competencies in higher education: A critical analysis from the capabilities approach. *Journal of Philosophy of Education*, 46, 132-147. <https://doi.org/10.1111/j.1467-9752.2011.00839.x>
- [30]. Ordonez, B. (2014). Competency-based education: Changing the traditional college degree power, policy, and practice. *New Horizons in Adult Education & Human Resource Development*, 26, 47-53. <https://doi.org/10.1002/nha3.20085>
- [31]. Oroszi, T. (2020). Competency-based education. *Creative Education*, 11, 2467-



- 2476.<https://doi.org/10.4236/ce.2020.1111181>
- [32]. Parson, L., Childs, B., & Elzie, P. (2018). Using competency-based curriculum design to create a health professions education certificate program that meets the needs of students, administrators, faculty and patients. *Health Professions Education*, 4, 207–217. DOI .org/10.1016/j.hpe.2018.03.008
- [33]. Ralf, A. et al. (2020). Does implementation of competence-based education mediate the impact of team learning on student satisfaction? *Journal of Vocational Education & Training*, 72(4), 516-535. DOI: 10.1080/13636820.2019.1644364
- [34]. Ryan, S., & Cox, J. (2017). Investigating student exposure to competency-based education. *Education Policy Analysis Archives*, 25(24), 1-32. DOI: <https://doi.org/10.14507/epaa.25.2792>
- [35]. Sandllin, M., & Shendy, J. (2019). Standardized components for competency based educational record. AACRAO: Washington DC.
- [36]. Shapiro, J. (2014). Competency based degrees: Coming soon to a campus near you. Washington, DC: Chronicle of Higher Education.
- [37]. Sifuna, D. N & Obonyo, M. M. (2019). Competency based curriculum in primary schools in kenya- prospects and challenges of implementation. *Journal of Popular Education in Africa*. 3(7), 39 – 50.
- [38]. Smith, B. (2013). Perspectives: Unconventional wisdom. *Change: The Magazine of Higher Learning*, 45, 33-39. <https://doi.org/10.1080/00091383.2013.749145>
- [39]. Sturgic, C., Patrick, S., Pittenger, P. (2011). It's not a matter of time: Highlights from the 2011 competency-based learning summit. Retrieved from <https://www.inacol.org/wp-content/uploads/2015/02/iNACOL>
- [40]. Torres, A., Brett, J., Cox, J., & Greller, S. (2018). Competency education implementation: examining the influence of contextual forces in three New Hampshire secondary schools. *AERA Open*, 4(2), 1-13. DOI: 10.1177/2332858418782883
- [41]. van der Vleuten C.P.M., Schuwirth L.W.T. (2005). Assessing professional competence: from methods to programmes. *Med Educ.*, 39:309-17. doi. 10.1111/j.1356-2929.2005.0294.x.
- [42]. van Griethuijsen, R., Kunst, E., Van Woerkom, M., Wesselink, R. & Poell R. (2019). Does implementation of competence-based education mediate the impact of team learning on student satisfaction? *Journal of Vocational Education & Training*, 72(4), 516-535. Retrieved from <https://doi.org/10.1080/13636820.2019.1644364>.
- [43]. Williams, M., Moser, T., Youngblood, J., & Singer, M. (2015). Competency Based Learning: Proof of Professionalism. *Academy of Business Journal*, 2, 50-61.