

# Assessing Learners Within Large Classes for Effective Learning Outcomes in Teacher Education in Uganda

Bakaira G. Godfrey Kyambogo University, Uganda

Email address: gbakaira@yahoo.com

#### **Abstract**

The importance and role of teachers in the country's education development and empowerment, especially in effort to meet the challenges of the 21st Century, over time and again, assessment of learners within the context of large classes (over 200 students) has remained a big challenge to practicing teachers during classroom practice. This is not a result of only the interpretation of the concept of large class, but also reflection and application of relevant assessment and pedagogy practices during the teaching and learning process. The paper presents the challenges of large classes and effective assessment practices for tangible learning outcomes which have a lot of implications to the teachers when planning for large classes in practice. Limited evidence has been provided to teachers as adequate interventions on how to assess learners within large classes for effective learning outcomes, the need for the study and action. The study has been practical, evaluative, using mixed design and approach on teacher education practitioners. The findings include among others universal and practical concepts, assessment management challenges, contextual assessment interventions or strategies and tips for large classes including application and integration of Information Communication Technology for quality teaching, assessment and effective leaner outcomes.

**Keywords**: Large Class, Assessment Practices, Teaching, Learning Outcomes

#### INTRODUCTION

A large class has more students than teachers, classrooms, seating, and instructional materials. The teacher must handle more students than the country's policy allows. According to the MoES (2014), one teacher should handle 53 students. Large university classes have over 200 students (Jungic & Kent 2006). Mulryan-Kyne (2010) explains that teaching 50 students in a science lab designed for 30 is more difficult than teaching 220 students in a 200-seat lecture hall.

Teachers and those responsible for designing, accrediting, quality assuring, and reviewing programmes, courses, and curricula must assess student learning (University of Ulster 2015). Curriculum implementation includes teaching, learning, evaluating, and planning (Bonfield& Horgan, 2016). Large classrooms challenge most teachers due to inconsistent marking and grading, various student backgrounds, and delivering sufficient and fast feedback to individual students. Boud (2010) introduces seven propositions to guide evaluation thinking in light of the growing focus on norms, to address critiques of current practise, including using assessment to engage students in proactive learning, actively improving student learning, students and teachers becoming responsible partners in learning and

evaluation and assessment for learning. Assessing learning outcomes requires defined criteria and procedures (Quality Assurance Agency, 2013).

Yueting & Harfitt (2018) observed problems with inadequate attention to individual students, fewer opportunities for personalised feedback, and burdensome marking obligations. Facilitated enhancement-led quality assessment and assurance (Quality Assurance Agency, 2005). Teachers are the key to progress and reform in education, and an education system's quality cannot exceed its teachers' (Mckinsey, 2007 & GWPE, 1992). Teaching requires personal and corporate responsibility for all students in their charge (ILO/UNESCO, 1966). Teachers must be resourceful and competent to meet educational needs. Teacher Education develops prospective (Preservice) teachers' knowledge, skills, and attitudes through CPD (Nakpodia and Urien, 2011). Teacher Education is an institution or organisation whose status depends on how our society evolves and how it responds to new needs. The Ministry of Education and Sports (MoES) through her department, Teacher Education Training and Development (TETD), focuses on accelerating reforms in teacher education to contribute to a globally competitive teacher education human resource with skills relevant to the development paradigm (National Planning Authority, 2016 & TISSA Report, 2013). MoES (2014) describes how teachers work under different conditions and challenges. Large classes and effective assessment are challenges (TISSA, 2013).

Uganda's population is 47,612,848 as of October 21, 2021, according to Worldometer and UN data. UN estimates Uganda's midyear 2020 population at 45,741,007. Uganda has 0.59 percent of the world's population. In line with rapid population growth, the government launched Universal Primary Education (UPE) and Universal Secondary Education (USE), which has increased enrolment in schools; from 7,354,153 students in 2002 to 8,655,924 students in 2016 in Primary Schools; 655,951 (2002) to 1,457,277 (2016) in Secondary Schools; and with an overall total of 10,872,016 enrolment from pre-primary to universities. (MoES, 2016/2017). Uganda has a total number of learners from Early Childhood, Care Education (ECCE) to university) of 15,000,000 million; in 50,688 education institutions (Presidential Address, march 2020), the implication of large classes and assessment issues in education institutions.

## **Purpose and Objectives of Study**

The purpose of the study was to analyse the challenges of large classes and establish effective assessment strategies for learners within large class for practical learning outcomes in Teacher Education in Uganda and it was directed by three objectives all focused on effective learning outcomes namely:

- To find out the challenges teachers face when assessing learners within large classes
- 2. To generate effective assessment strategies for assessing learners within large classes
- 3. To make recommendations for effective assessment practices of learners within large classes

The study focused on assessing learners within Large Class for effective learning outcomes in Teacher Education in Uganda.

#### **Context Perspective of Study**

Uganda is committed to achieving the Education 2030 Agenda and SDG 4: Quality Education for All. Ensure inclusive and equitable quality education for all and promote lifelong learning to empower, recruit, train, motivate, and support teachers

and educators (particularly outcome targets: 17.14 to 17.18). The Incheon Declaration (May 2015) builds on the MDGs (2000). The Ministry of Education and Sports (MoES) has aligned most of its sector plans and programmes to Sustainable Development Goals (SDG) and this includes among others, developing sector-based strategies of strengthening means and pathways of SDG 4 at National level. The MoES, through Teacher Education Training and Development (TETD), plans to accelerate reforms in teacher education to create a globally competitive teacher education human resource with development-relevant skills (National Planning Authority, 2016). This coincides with the Second National Development Plan (NDPII) 2015/16 – 2019/20 theme "Reinforcing Uganda's Ability to compete for Resilient Wealth Creation, Work opportunities, and Inclusive Growth" (2015) and Uganda Vision 2040 "A Transformed Ugandan Society from a Peasant to a Modern and Wealthy Nation within thirty years."

It is difficult to provide a definitive answer to the question of what constitutes a large group due to the fact that the answer is contingent on a wide variety of factors, including the institution, the field, and even the class itself (Mulryan-Kyne, 2010). When determining whether or not a class should be classified as "large," she recommends taking into account the variety of student and instructor characteristics (such as ability, age, background, and experience, for example). Constraints that are interrelated and collective can make meaningful teaching and learning more difficult when they are present in large classes. Not the policy but the teacher:student ratio is what determines the size of the class.

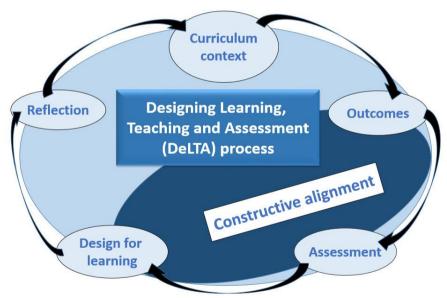


Figure 1: The Designing, Learning, Teaching and Assessment (DeLTA) Process Source: UK Department for Education. Teachers' Standards 2011& 2017.

The structure of the DeLTA process is divided into sections as illustrated in Figure 1. It is based on a differentiated model of learning and teaching called Augmented Remote Teaching, Learning and Assessment (ARTLA) and the process adapts to rethinking the outcomes, assessment and learning opportunities for the learners with relevant reflection in line with the curriculum context. It requires the teacher to design for the active participation of learners and to encourage them take responsibility for their own learning. The DeLTA process is cyclic and at each step

engages the teacher and learner in different tasks. For example, contextualisation, internalising, interpreting and analysing the curriculum including formulating learning outcomes in line with the various taxonomies, assessing for, as and of learning in accordance with purpose, policy and methods like peer assessment and Continuous Assessment Techniques (CAT), designing for learning in terms of engaging pedagogy, varied possible interactions, and learning opportunities; and reflection through student feedback, peer assessment, self-evaluation (reflection), moderation & external examination, external evaluation of programme. In accordance with the procedure described above, the Board of Governors (2013) explains the assessment cycle's four stages as follows: First, identify and define academic achievement, which are things that students should be able to do, know, and appreciate; second, choosing appropriate assessment strategies and evaluate the student performance using multiple methods for evaluating the learning outcomes and direct measures of learning that make it easy to describe the performance and ascertain how information will be collected; and third, analyse the results of the outcomes. So, teacher as a person who legally and academically carries out instruction, guidance and guides knowledge to a learner, in line with learner's educational needs (Allen, 2015) and teaching as a process of enhancing skill and value development in learner/student (Blase & Anderson 2013), should plan properly for achievement of learning outcomes, All teachers assess every class, according to Black and Wiliam (2006). Instruction, materials, and assessment are differentiated for cognitive, affective, physical, and cultural needs (Mandinach & Jackson, 2012). Teaching involves specific interventions to aid learning (Smith 2015&2019). Most teachers and teacher educators know about assessment and the different tools, but they struggle to use them and think of assessment as a pen-and-paper test. The TISSA Report (2013) supports the claim by highlighting teacher training institutions' inability to train enough pre-service and in-service teachers, causing a teacher quantity and quality problem. TISSA found insufficient teacher training and preparation.

Teachers complain about large classes with poor sociocultural conditions (Nguyen, 2015). Teachers' perceptions and experiences determine whether a class is large or too large (Locastro, 2001). Teachers measure class size by students per teacher. The teacher determines whether a class is large. In some countries, 25-30 students per teacher is large; in others, it's normal or small (UNESCO Bangkok, 2006). Discipline and pedagogy characterise a large class differently.

Large classes aren't a numeric limitation, but they can impede student learning. Considering the range of learning environments, techniques, styles, teaching and learning support systems, disciplinary social contexts, and industrialized vs. third world countries (Hornsby et al. 2013). Large classes, regardless of learning style, reduce student engagement, commitment, and motivation (Mulryan-Kyne 2010). Large classes don't seem to promote higher-order cognitive skills. Class size affects learning quality (Cooper & Robinson 2000; Mulryan-Kyne 2010). Watson Todd (2006a) summarises five problems with large classes. Teaching strategies, management skills, student-student interactions, student-teacher relationships, feedback, evaluation, and marking papers. Teaching and assessing for deep learning will enhance student engagement (Hornsby et al. 2013). In theatrical studies, any class with more than 15 people is huge, yet a first-year biology class with more than 100 is large. A college with inadequate teaching technology may define a large class differently than one with ample resources (Hornsby et al. 2013). Many education systems contain large classes; their context and environment must be analysed (Valerien, 1991). Since assessment is part of teaching and learning (MoES 2010), teaching in large classes hinders progress (UNESCO 2005). Several nations are under obligation to register as many as possible students in higher education due to its link to health, empowerment, and economic progress. Due to rising university enrollment, the student-teacher ratio in CFE classrooms is 163:1 (Wang, 2009). (Xie, 2014).

Assessment in higher education should focus on three goals: learning, certification, and quality control (Yorke, 2008). Participation in engineering labs is contingent upon objective evaluation (Clancy, Quinn, & Miller, 2005). It is possible to evaluate students based on their capacity to collect, analyse, interpret, and investigate engineering artefact malfunctions (Abdulwahed & Nagy, 2009; Lal et al., 2017). Academic standards are maintained through testing. It is necessary to have validity, fairness, reliability, rigour, discrimination, explicitness, and practicability (University of Ulster, 2015). Learning takes place more actively and is evaluated more frequently in active learning environments. Students are able to overcome their learning deficiencies through the use of assessment "feedback" (Irons, 2008). Assessment for learning, or AfL for short, is a key driver of student learning when it is properly implemented (Wiliam, 2011). Formative evaluation and learning descriptions are both utilised by AfL. (Berry, 2011). Teachers of AfL suffer from a lack of knowledge and conviction (Marshall & Drummond, 2006). For strategies to be effective, relevant assessment levels and an AfL commitment are required (Carless, 2011; DeLuca, Klinger, Pyper, & Woods, 2015). Other assessment tasks, besides summative ones like final exams and quizzes, can be considered AfL because they seek evidence of student learning in the same way that summative tasks do (ARG, 2002). As a result of the fact that many teachers who have won awards have also worked with large classes, (Carless, 2015), the role and influence of teachers appear to be of greater significance.

## **Assessment and Assessment Practices**

According to Subheesh and Sethy (2019), assessment is a component of the curriculum for a given course. It assists students in determining the areas in which they excel and struggle academically. Evaluation has an impact on both the students and the instructors of a course during the teaching-learning processes (Dziob, Kwiatkowski, & Sokolowska, 2018; Suskie, 2010). The assessment helps students become engineering professionals by measuring the depth and breadth of their accomplishments and providing insightful commentary on their progress (Sethy, 2018; Subheesh & Sethy, 2018). The purpose of assessment is to determine what students know, understand, and are capable of by collecting and debating information gleaned from a wide variety of different sources. One of the most important pedagogical skills is assessment. Validity, reliability, and fairness are the three pillars of a high-quality assessment, and teachers need to know how to evaluate whether or not an evaluation meets these criteria. The ability to give students feedback that is both constructive and accurate is a necessary skill for teachers (OECD, 2013). The purpose of assessment is to measure, monitor, and improve learning as well as achievements, outcomes, and the degree to which goals are met (Fernandes et al.2012). Educators utilise "assessment" to measure and record a student 's educational preparedness, academic achievement, skill, or educational requirements. The assessment of students' work in the classroom is an essential component of learning and success (Weeden P et al. 2000). The behaviour of a person is evaluated through assessment, and the results are used to inform decisions regarding the individual, the curriculum, or a programme (Braskamp, & Engberg, 2014). It collects and documents information for evaluation, including knowledge, skills, attitudes, and beliefs.

According to Blaich and Wise (2011), different test designs are used for diagnostics, monitoring, and evaluation. Students receive consistent and meaningful feedback from e-assessments (OECD, 2010). We need to understand how information and communication technology (ICT) can improve assessment experiences, provide evidence of higher-level learning, and explore the institutional, pedagogical, and cultural dimensions of e-assessment in order to improve it and successfully implement it (Guardia, Crisp and Alsina, 2016). Taking stock of one's knowledge, abilities, attitudes, and beliefs, evidence is gathered during assessments to determine whether or not a person is up to standards (NTP, 2019). It is a standard by which instructors and caregivers evaluate the value of an individual, procedure, or programme (Hanna & Dettmer, 2004). Feedback from students about the educational process or product is what we mean when we talk about learner assessment (McAlpine, 2002). Conversations between instructors and students about teaching, learning, and the use of curriculum and resources are essential components of learner assessment.

According to Flórez and Sammons (2013), using assessment as a tool for learning helps students learn more. Cognitive restructuring is what assessment for learning entails. Students evaluate their own learning and make improvements based on what they discover through the process of self-assessment (WNCP, 2006). Assessment as learning is a term used to describe learning-supportive pedagogical practises in the classroom (Earl, 2009). Students are better able to identify their strengths and weaknesses with the help of both self- and peer-assessments. Because "the format can get in the way of the intention," Weedon et al. (2002) recommend that not all forms of self-assessment be written down. Learning statements and symbols are formulated by the Public Assessment of Learning (Campbell et al, 2006). Confirming what students already know, demonstrating curriculum outcomes or individualised programme goals, certifying proficiency, and making decisions about future programmes or placements are all possible uses for summative assessments. It is the process of measuring, recording, and reporting on a student's achievement in relation to particular learning expectations as evidence of student learning to make judgements in relation to desired outcomes and criteria (Campbell et al, 2006). Assessment types include diagnostic and formative, as well as self-assessment and summative.

Assessment for learning is a formative approach that emphasises feedback to improve performance, especially when students actively analyse assessment results to plan and support their own academic growth (Earl, 2003; Wiliam, 2011). Formative and diagnostic tests. Coursework and portfolio assessment can gather diverse information that reflects the subject's breadth (McAlpine 2002). Research on classroom assessment (Black and Wiliam, 2006) shows that assessment for learning improves learning and raises standards. AfL's assessment information is used to adjust teachers' teaching strategies and students' learning strategies (ARG., 2002). Linking teaching, learning, and assessment informs teachers and students about classroom practises. The AfL informs and empowers learners to improve their performance (Cheryl 2005). It uses a task or activity to determine student progress during a unit or block of instruction and creates feedback to improve student performance. It's the approach of using evidence to determine where learners are, where they need to go, and how to get there (ARG., 2002). It illustrates 10 research-based principles to guide classroom practise, including:

"Assessment for learning should be part of effective planning of teaching and learning, focus on how students learn, be central to classroom practise, and be regarded as a key professional skill." (Broadfoot et al., 2002 pg 3).

Airasian (2005) listed nine evaluation principles. Evaluation of student learning begins with teaching methods; it's most effective when it reflects a multifaceted, incorporated, and disclosed understanding of learning; it works best when the programmes it seeks to improve have clear, explicitly stated objectives; it must focus not only on outcome measures but also on the experiences that result in to those results: it's most effective when it's ongoing rather than episodic; and it fos. Students and instructors become accountable partners in learning and evaluation, and teachers learn assessment practises and mindsets. Boud (2010) published Assessment 2020 to guide evaluation thinking in light of an emphasis on criteria and critiques of current practise. It promotes independence, performance, and teacher retraining. Included too are clear goals, criteria, and standards; reflection; highquality material; teacher/peer learning. Confidence-booster enhances the performance (Nicol et al. 2006). Subheesh & Sethy, (2018) suggest four assessment practises: formulating learning outcomes, providing learning opportunities, assessing student learning, and using results to verify learning outcomes. Earl (2003) and William (2011) advocated for objective test items and convergent assessments. This kind of exercise helps students prepare for exams (McAlpine, 2002). Homework, reflective journals, question-and-answer sessions, and multiplechoice quizzes can help. The summative assessment determines a student's grade and next-level readiness. Summative assessment evaluates students' overall performance. It's also used to show administrators and potential employers students' abilities (McAlpine, 2002). OECD (2013) divides assessment into two categories: assessment of learning, which records, grades, or certifies achievements, and assessment for learning, which shapes instruction and improves learning. Formative assessment boosts student participation and learning (Black & William 1998; Boud 2000). Formative assessment, also called "assessment for learning," has problems like insufficient attention to individual students, limited feedback opportunities, and an overwhelming amount of marking. Before starting, structure the evaluation process so it can continue on its own (Board of Governors, 2013).

#### **Challenges of Assessing Learners within Large Class**

Large classrooms worry most teachers owing to inconsistencies in marking and grading, student backgrounds, and providing enough and rapid feedback to individual students (CEI, 2021). Larger classes have more diverse and engaged pupils. Some colleges have 1000-2000-person classrooms; others have 80. When the institution expects student-centered learning, doubling or tripling class sizes may affect assessment design, management, and fairness (Pauline & Tchantchaneb, 2010 & Strong 2018). In Europe, the US, and Canada, first-year classes for many foundation subjects range from 300 to 1,000 students (Gibbs & Jenkins, 1992).

The large enrolment in schools by UPE innovations cannot be contained by available teachers, so the government had to enrol more teacher trainees in primary teachers' colleges to match the schools' population (Museveni, 2004). A large class has "many interrelated and collective constraints that impede teaching and learning" (Onwu, 1999). Large classes lead to less student-teacher interaction, drop-out, and failure (Gibbs & Jenkins, 1992). Marking is time-consuming (Harfitt, 2013), tutoring is limited (Ballantyne, Hughes, & Mylonas, 2002), and dialogic feedback is minimal (Carless, 2015). Class size doesn't affect student performance alone (Biggs, 1999 and Hornsby & Osman, 2014). Finding efficient ways to assess and feedback

to many pupils is a challenge (Brown, 2001 & Knight, 2001). Large class numbers and poor student impressions of large classrooms hinder efficient teaching and learning (Pauline & Abdellatif, 2010). Teachers often instruct hundreds of students. You know how hard it is to grade papers, assignments, or projects individually or meet with hundreds of students one-on-one (OECD, 2013). The instructor prepares lessons, provides comments, and arranges the classroom.

In Rajapriyah Anmpalagan & Richard Smith (2018) discussion on teaching English to large classes, they surveyed instructors globally using a 2012 list of issues and proposed remedies to too much homework. Feedback is hard to offer to everyone Shamim (2007). In a large class, not all students participate (Theo (2007). Pair/group work increases involvement; "It's hard to get kids' attention in a pair or group." Active learning in large classes is challenging due to limited textbooks, storybooks, flashcards, audio and video recordings. "It's hard to know/use students' names in a large class." Students made "profile cards" to memorise names.

# Strategies for Assessing Learners within Large Class

Massive enrollments require logistical planning and collaboration with teaching fellows. Teachers must make decisions about instruction and instructional plans that affect pupils (Gerosse and Upshur, 1998). This allows teachers to design suitable lesson plans, teach, and evaluate for constructive comments. Diverse assessment activities assist promote an inclusive environment for learning (Pickford & Brown, 2007). Students from a certain region or culture may have many qualities, yet they're not homogeneous (Trahar, 2007). Before designing assessment assignments for a wide range of learning, consider your own culture (Ryan 2005). Given the link between teachers' performance and their ability to recognise and tailor instruction to students' needs, instructors' inability to address socioeconomic difference promotes inequality in education institutions (Bergerson, 2008; Everhart & Vaughn, 2005; Song, 2006).

Teachers should employ indirect and direct evaluation methods to discover what students have learned, identify deficiencies in skills development, comprehension, or course content delivery, and alter teaching practises accordingly (Jens, 2005). A combination of the two types of assessment provides a more comprehensive view of instructional efficacy. Indirect evaluation includes standardised tests, curriculumbased exams, and quizzes; direct assessment includes student surveys, focus groups, and interviews (Jens 2005). Teachers use assessment tools and procedures to track student progress. Standardized testing and developmental milestones are formal tools. Informal ones use flashcards and anecdotes; quizzes, observations, grades, and portfolios (Kristin, 2010). Conway (2007) examines formative, summative, observational, selected response, manufactured response, performance, and portfolio assessments. Alternatives to testing include observation, projects, oral evaluation, portfolio assessment, and involvement (Schreiner 2008). When students encounter growth and performance, rather than failure and defeat from comparing themselves to more successful peers, they are motivated and confident. Regular assessment improves students, says Burns (2005). Hanna and Dettmer (2004) suggest assessing educational plans. Many tools help teachers evaluate student performance. Notes, checklists, discussions, portfolios, Q & As, rating scales, rubrics (Hanna and Dettmer, 2004).

Students are motivated to make progress when effective AfL is used (Wiliam, 2011). The Assessment for Learning framework places an emphasis on formative evaluation and learning descriptions (Berry, 2011). Evaluation is required of

teachers (Smith, 2011). The teachers of AfL are not well informed (Marshall & Drummond, 2006). In order for AfL to be effective, it is necessary to have assessment literacy as well as teacher dedication. (Carless, 2011; DeLuca, Klinger, Pyper, & Woods, 2015). Many award-winning teachers have taught huge courses (Carless, 2015), demonstrating the importance of teachers. Previous research shows that technology-assisted and student-involved evaluation as helpful in large AfL courses (Savin-Baden, 2010). Online and interactive information supports a diverse class (Snowball, 2014). Expanding the classroom into a virtual community of learning that fosters belonging; using audio teacher feedback in a virtual community, echoing past research that demonstrates greater learning, supports caring and boosts students' sense of community (Savin-Baden, 2010).

Educate America Act (Goals 2000, IDEA) helped standards groups and states include students with disabilities in higher standards and stricter success tests. Each law linked instruction, curriculum, and performance assessments (Rouse, Shriner, & Danielson, 2000). Industry groups favour universities with work-related experience. Authentic assessment builds "work-readiness" among graduates (Rule, 2006). Authentic assessments should meet audience needs (Rule, 2006). Boud and Falchikov (2005) urged "sustainable evaluation." It equips learners with applicable workplace skills and competences. Authentic evaluation emphasises students' real-world skills (Biggs & Tangs, 2007). SOLO Taxonomy (2007) connects learning outcomes with assessments. SOLO Taxonomy frames assessment activities with verbs that reflect increasing complexity and depth. Learning outcomes drive "constructive alignment" (Biggs & Tang, 2007). Students can design their own learning if activities and learning are aligned.

#### METHODOLOGY

The study has been practical, using evaluative design (Patton 2008, Fetterman 2008 & Rossi et al. 2004), mixed design (Holland et al. 2005) and approach on teacher education practitioners, but more inclined to the qualitative methods (Patton 2002) including: visitations to teacher education institutions; personal experience during classroom observation practice; videoing and filming (documentation); interviews (focused and individual); support supervision (Clinical Supervision Model); mentorship and coaching sessions; field - based monitoring and evaluation and photography. The target population was teacher training and education institutions; primary and secondary education institutions; especially during college and school practices, internal and external moderation programmes; training workshops; school attachments and continuous school practice. The purposive, cluster and simple random techniques were employed during selection of research participants. Gender responsiveness was strictly considered. Data analyses includes studying, comparing, and interpreting patterns, identifying themes, coding, clustering comparable data objective by objective, and limiting data to relevant and important points.

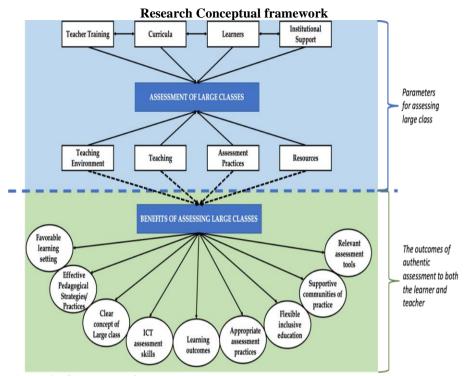


Figure 2: Conceptual framework

Source: Researcher on Assessing Learners within Large Classes for Effective Learning Outcomes in Teacher Education in Uganda

Students' knowledge, comprehension, and skills are evaluated. The researcher suggested using two-way criteria for assessing large classrooms to increase authentic assessment in Ugandan teacher education. This resonates with the National Teacher Policy (2019) definitions of a teacher and appraisal: a person who has knowledge, skills, and special trainings in teaching, trying to explain, and trying to educate and able to effect behavioural change in cognitive, psychomotor, and affective domains; and evaluation as the means by which documentation is gathered and judged to make a decision if an individual has met stipulated assessment standards or not. Formative evaluation and learning outcome standards help instructors in Uganda. Real-world tasks are used in authentic evaluation (Katherine, 2018). Authentic assessments include written assignments, solo or collaborative initiatives, portfolios, teacher observations, and other tasks. Authentic classroom assessment trends include performance, portfolio, oral, and project evaluations. (Katherine, 2018).

The conceptual framework has ramifications for evaluation by University of Ulster (2015) by establishing the procedures by which students are evaluated and have implemented based on desired learning outcomes, establishing the foundation for decisions on whether the student is ready to proceed, to qualify for an award, or to practise, and enabling students to acquire responses on their learning, strengths and weaknesses, and improve their performance. Diagnostic, formative, summative. Effective assessment of educational outcomes assesses what is taught and learned, emphasises deep, active reflective learning, concentrates on skills and their transfer, is efficient for lecturers, teachers, and students, ensures a rational volume of work for students, and incorporates the learning styles of all students, such as those who

disabilities, where reasonable. Academic assessment should clearly describe student learning objectives, how they are tested and measured, and assessment results that support present practises or suggest methods to improve student learning. (Board of Governors, 2013).

## RESULTS AND DISCUSSION

## **Concept and Situations of Large Class in Education Institutions**

Like Mulryan-Kyne (2010), the researcher established varying scenarios for a class being designated as large. These included; large class by class size (the number of learners in one classroom), adult education circumstances, Learner: Teacher ratio as per regulation. For example, in Uganda, the learner - teacher ratio is 53: 1 for conventional inclusive class and 3:1 for a purely Special Needs Education class (MoES, 2014, MoES 2016 & Suraksha 2020). Large class was by nature of infrastructure, many learners and sitting arrangement for a teacher support, especially class-teacher system (MoES, 2014). In particular, in many primary schools, learners were seated on the floor, overcrowded with no space for freedom of teacher movement and limited independent learner support; case of over 378 learners in one small class. Yet in Teacher Education institutions benches were fixed with over eight students on one bench, inadequate resources for an experiment in comparison to the number of learners and actually those participating in the actual experiment.

The researcher revealed that a large class could be one in line with pursuit of basic skills development. For example, some teachers found difficulty in making learners to write on either slates, chalkboard or ground where it required a lot of teacher support or coaching to develop basic numeracy and literacy skills. In Europe, the US, and Canada, first-year courses for several foundation disciplines range from 300 to 1,000 students (Gibbs & Jenkins, 1992). With a large class, students would experience less interaction with their teachers, leading to a drop-out and failure as asserted by Gibbs & Jenkins (1992). Large class was also defined by the number of learners during practical fundamental skills development for one teacher, notably with practical topics like music, PE, agriculture, art and design, home economics, early childhood, sciences and math. Large class size as a result of restricted seating facilities, diversity (including students with special needs), and the capacity of the instructor to facilitate learning that is relevant to the learning goals. Assessing a large class can be challenging due to the amount of time and effort required for marking, the limited access to tutorial support, and the fewer opportunities for dialogic feedback (Harfitt, 2013; Carless, 2015). Other scenarios for a large class include: Large class by inadequate learner participation and unrealistic view position by the teacher; age, level, concentration and needed individual attention from the teacher, dynamics of open education, limited chances of teacher-learner feedback during teaching and assessment for practical learning outcomes and very big numbers of students to the existent of attending class from the windows; a case of most higher education institutions due to privatisation of education causing managerial and discipline inadequacies and plagiarism.

Student cohorts are getting more varied and engaged, while class numbers are growing (Pauline & Tchantchaneb, 2010). Some colleges have 1000-2000 student courses; others consider 80 a huge class. When the university expects student-centered learning, doubling or tripling class sizes might bring issues in assessment design, management, and fairness. Due to rising university enrolment, the student-teacher ratio is 163:1 (Wang, 2009). (Xie, 2014). Hayes lacks space for teachers to

foster student interaction (1997). A large class is one where the quantity of students may impair student learning. Discipline and pedagogical responsibilities vary for large classes (Hornsby et al., 2013). Kusi & Manful, (2019 defines a large class as follows: There's nothing like a large class. A large class has more than 100 pupils and there's no set amount. A huge class has more students than the building and resources can handle.

## **Benefits of Large Class**

Large classes are difficult to teach and evaluate, but most schools have them. Large classes are hard for teachers, but they benefit pupils. Some benefits include shifting the focus from teachers to students, offering a great diversity of experience and past learning, and developing group activities and exams to take advantage of this resource. This boosts their independence (Strong. 2018). The study found out these benefits; teacher development in administrative proficiency, creates better indirect competition among the students in terms of academic leadership, more diversity and enriched sharing of class discussions and tolerance, more ideas, from different learners, diverse personalities, promotion of team work and skills, peer tutoring is encouraged, human resource and capital, appreciation of different learner cultures and learning more potential talents among learners. Table 1 summaries general benefits established from the research interviews.

## Table 1: General benefits of large class

- Atmosphere for sharing experiences and networking
- Independent students
- Use of better study skills
- More ideas as class size grows
- Big capitation grants from government
- encourages confidence among students
- Learners share various potentials

- More students, more healthy/indirect competition among learners
- Better social opportunities
- Developing and improving communication skills
- Peer teaching and learning is encouraged
- Learners are exposed to diverse cultural norms, practices & values
  - Diverse personality and excitements

- Encourages team work among teachers and learners
- Provides cheap and readily available labour for the education institution
- Provides interesting learning environment:
- Source of income to the Institution (projects and privatisation)
- Source of security to learners, teachers and the entire institution
- Networking with people who have different backgrounds, opinions and beliefs

Benefits of assessing big classes include active learning, reflection, and improved concentration and focus. Fosters creative skills, develops critical thinking and meta cognitive skills, provides data on curriculum or teaching methods, provides information about learners' knowledge and skills as they enter a course or study, provides reliable data about learners' learning as they are assessed continuously, offers a larger view of learners' needs and accomplishments, and enables teachers to identify directions for future instructional development. Large classes provide a brighter atmosphere and more energy. Large class sizes mean teachers don't have time to work individually with students. Group work increases, so how to work well with others.

#### **Challenges of Assessing Learners within Large Class**

More students in each course means lesser spaces. Overcrowding affects teacher morale, student behaviour, and classroom equipment. Teachers and students struggle to assess large classrooms. Engaging students and fostering deep learning, offering high-quality individual feedback, ensuring consistency in marking, assessing graduation characteristics, and avoiding plagiarism are teacher/staff issues (Strong 2018). Large courses pose five assessment issues: preventing shallow learning, offering high-quality individual feedback, fairly assessing a broad mix of students, managing the volume of marking and coordinating the professionals participating in marking, and eliminating plagiarism (James, McInnis& Devlin, 2002) These are not quite different from those presented by the researcher in the Table 2.

Table 2: Summary of challenges for assessing learners within large class

*	Less	*	Limited	*	Less learner	*	inadequate
	teacher		instructional		time on task		attention to
	time		materials/reso	*	Difficulty of		individual
*	Plagiarism		urces		setting and		students
*	Diversity of	**	Needs a lot of		enforcing	*	reduced
	students		efforts in		classroom		opportunities
*	lack of		organizational		behaviour		for
	flexibility		skills		(crowd control)		individualized
*	Monitoring	**	Learners	*	Limited		feedback
	of		become		monitoring of	*	overwhelming
	attendance		faces/appeara		students'		marking
*	Minimum		nces instead		learning		responsibilities
	attention to		of people	*	strategies of		,
	students	*	Instructional		putting students	*	involving
*	Assessment		materials		in groups,		students in
	and scoring		visibility		matching		assessment
	problems		-		names	*	Disengagement
	-			*	class climate		2 0
					management		

Congestion causes a shortage of room for the teacher to move around, reducing opportunities for all learners to participate actively in the learning process; impersonalizing learning by resorting primarily to lecture and teacher demonstrations; excessive workload and a long timely delivery for academic tasks; limited windows of opportunity to meet individual needs of students for self-activity and inquiry; limited opportunities to meet individual student needs for massive enrollments allow for a diversified student body (in terms of colour, class, gender, and educational level) and high teacher expectations; as a result, many resort to big lectures to cover a wide range of topics. (Knight, et. al, 2005, and Freeman et al 2014).

## General Challenges to assessment of learners within large class

Create and adapt relevant, fair, and clearly understood learner assessment instruments. Insufficient teacher knowledge and skills on authentic assessment, creating and implementing viable plans for article seeks to explore, limited time allocated for evaluation planning, assessors' bias (subjectivity) in relation to evaluation.

Other challenges of assessing large class included; difficulty in building person relationships with learners, difficulty in carrying out assessment to learners with learning difficulties, difficulty in grading assignments and tests with mind of diversity and capacity of individual learners, difficulty in aligning and integrating specific assessment, teaching methods and strategies during classroom practice, employing a variety of assessment tools, types and approaches for both in-built and summative assessments, difficulty to control cheating (malpractice) during invigilation and supervision of large class testing and examinations, integrating technologies in assessment, limited support resources to facilitate assessment and individual pacing and special specific educational needs, insufficient and restricted furniture, difficulty to provide feedback, monitor learners' attendance and performance.

Teachers tend to employ traditional evaluation methods like exams and long written assignments with large classes. They do this because huge classrooms make personalization difficult (Strong 2018). Challenges include inadequate attention to individual students, fewer opportunities for individual feedback, onerous marking tasks, and involving students in evaluation (Yueting Xu & Gary Harfitt, 2018). Excerpt from evaluation for learning in big classes encounters intrinsic hurdles, including onerous marking (Harfitt, 2013).

Table 3: Obstacles to assessment practice by Harfitt, G. J. (2013).

Restricted opportunities for student assessment and individual feedback It is harder to give individual advice and guidance to students Monitoring of attendance can be difficult, thus encouraging students to cut classes

A more restricted range of teaching and learning activities Students receive less individual attention from the teacher.

Group work hard to manage because of too many or too large groups
Teachers work extremely hard to offset the effects of larger class size
The quality of feedback to students can be much reduced in large classes. Limitations to practical activities

Organisational problems are compounded, making it difficult to schedule tutorials, laboratory sessions, and fieldwork There can be technical problems working with large classes e.g., difficulties in projecting slides that are clearly visible to all students. Coping with large numbers of assignments and examination scripts is a source of difficulty

Source: Harfitt (2013.

Indiscipline, programme relevancy, inadequate feedback chances and scheduling, unclear assessment methods/rubrics and marking criteria/standards, handling assessment burden, inadequate support for completing assessment tasks, and lack of assessment task diversity are student problems (Strong 2018).

## Strategies on how to assess learners within large class

When measuring student learning outcomes, both the evaluation criteria and methodology must be explicit (Quality Assurance Agency, 2013). They assist students connect learning in many situations and drive assessment and evaluation. In emphasising a learning objectives approach, University of Ulster (2015) recognises the necessity to create and plan assessment as part of the complete curriculum experience, so it is coherent with outcomes statements and teaching/learning techniques employed. Many teachers feel they only have time-efficient and exambased evaluation options for large classes. Large classrooms have assessment options. Journal, self-assessments, quiz/test, placement graphic organiser,

conference/interview, poster, performance task, mind map, gap closing, student survey, anticipatory guides, graffiti wall, word splash, parallel activity, formal evaluation. Tables 4,5,6a and 6b provide a summary of a variety of assessment strategies for learners within large class from experience, literature, individual and focus group discussions, classroom observations and field-based monitoring and evaluation.

In addition to strategies in Table 4 above, the research revealed a variety of assessment strategies for large class namely, scoring rubrics, written projects. descriptive scoring schemes to asses student written, oral, online/face to face performance, multiple choice assessment and exams, minute paper, useful feedback, technology; assessment tools, compiling of results, and placement of learner using computers, concept test. Use of self and peer assessment, tutorials for instant model answers and feedback, diagnosis of student's prior knowledge for placement, grouping and regrouping, clickers/personal response system, oral presentations and role play, think pair share amongst learners, reflection on lessons learnt, teacher availability and accessibility, involving students in gathering materials and resources, articles, poems, short stories, profile cards to know/use students names (Johnson & Johnson, 2006, Lewis 2001).

Table 4: Summary of strategies for assessing learners within large class

1 a	ole 4: Sullilli	ary c	of strategies for	assessii	ng learners withir	i iai	ge class
4	Exit tickets	4	Follow up	4	Ask open-ended	4	Laboratory
4	Use quizzes	4	Assessment		questions		Learning
4	Use hand		Practices	4	Effective	4	Identify and
	signals	4	Authentic		facilitation/teachi		avoid bias
4	Response		Assessment		ng	4	Record the
	cards	4	Begin with the	4	Assessment		results.
4	Four		end in mind		Development	4	Use variety of
	corners	4	Communicate		Framework		assessment
4	Think-pair		your purpose	4	Modify		methods and
	Share	4	Spotlight on		instructional		activities
4	Choral		Assessment		strategies	4	Technologies
	reading	4	Case Studies &	4	Using		enhanced
4	Ongoing		Scenarios		Assessment		assessment.
	evidence	4	e-assessment		Rubrics	4	Feedback and
4	Vary		methods	4	Blended		feed forward
	question	4	Use multiple		assessments into	4	Reviewing
	types		methods		teaching &		Assessment
4	One	4	Engage learners		learning		Quality
	question	4	Assurance and	4	Formative pencil-	4	Group and
	quiz		alignment of		paper assessment		independent
4	Socratic		assessments	4	Consider non-		assessment
	seminar	4	Journals		traditional	4	Projects
4	Peer	4	Checklists		assessments	4	Essays
	instruction	4	Questionnaires		Quality	4	Observations
4	Portfolio	4	Short answer	4	Self & Peer rating	4	Discussions
4	Anecdote		items	4	True -false items		
	notes			4	Inventories		
4	Practical						
	exam						
4	Multiple						
	choice						

Peer feedback to reduce coursework by wanting to share work and feedback based on assessment criteria as the teacher visits different groups giving required assistance, pair work and group activities to improve participation with plenty of materials, instruction-based tasks, utilization of a code of behaviour, collaborative written ground rules, governed book reading. If teachers prepare students and automate logistics, peer assessment can reduce their workload (Ballantyne et al., 2002; Mostert & Snowball, 2013). Continuous assessment may also improve tutorial attendance in large classes (Yeh, 2009).

Table 5: Summary of tips for assessing learners within Large Classes

Table 5 suggests adding learner assessment into education to help students grow and succeed. Putting students in groups, associating names with faces, conducting teacher-student conferences, leveraging technology to streamline feedback methods, offering peer feedback, and shifting students from assessees to assessors are supported (Yueting & Harfitt, 2018). Model replies and feedback, self and interpersonal, clickers/personal response systems, a concept test, scoring syllabuses, minute sheets, corner activity, carousel thinking, and presume were suggested (Yueting & Harfitt, 2018). GardnerMedwin (2006) recommends ConfidenceBased Marking for assessing large classrooms by having students think deeply, self-assess, receive rewards for correct answers they are certain are accurate, and receive penalties for bad responses they are confident are correct. Student Constructed MCQs encourage students to think deeply and meaningfully about information, have a clear understanding of topic, explain solutions to other students, and consider of inadequate knowledge and possible errors (2010). Technology can help large courses.

Table 6a: Summary of technology-based strategies for assessing learners within large class

Use of Technology			Tools to make it happen			
4	Quizzes & Tests (Mentimeter, Kahoot,	4	Quizzes and tests			
	Google docs/forms)	4	Discussion forums			
4	Discussion forums (WhatsApp, Zoom Chat,					
	Facebook, twitter)	4	Multimedia (text + images, video			
4	Multi-media (text + images, video)	4	Presentation tools			
4	Presentation tools (dash boards, sticky	4	Digital video and audio			
	notes, ppt slides, padlet)	4	eBooks, wikis, Blogs			
4	Digital video & Audio					
4	E-books, wikis, blogs					

Teachers may turn large-class challenges into learning opportunities with the correct strategies (Hornsby & Osman, 2014). Writers Dufresne, Gerace, Leonard, Mestre, & Wenk (1996) describe Classwide Discussion with Electronic Voting System (EVS)

as follows: concept question given to whole class, small groups discuss concept question for 35 minutes, provide individual or group reactions, see how individuals or teams have reacted, explain answers in a variety of different fields debate and listen to others' explanations, instructor summarises and explains "correct" response. Audio feedback (Savin-Baden, 2010) and online education and instruction in a mixed learning strategy (Snowball, 2014) may assist teachers give learners briefer feedback. Bull & Danson (2004) propose frequent online self-testing during the course term, relating material to material covered since last exam, and delivering rapid feedback on each issue to enable course customization.

Table 6b: Summary of technology-based strategies for assessing learners in large class

Tests in Blackboard			Mobile Examination in Blackboard			
4	Can be mobile-capable or browser-only					
4	Can be supported through Respondus	Blackboard for use with the				
	Lockdown Browser or Respondus Test		Blackboard Mobile Application			
	Creator or from other sections		0	Question types:		
4	You can also create tests from scratch		0	Multiple questions		
4	Test exceptions allow different settings		0	True/False		
	for different students		0	Calculated Numeric		
4	See https://www.pnc.edu/distance/learn-		0	File Response		
	tutorials/ for all videos on tests and		0	Hot spot		
	Respondus		0	Fill in Multiple Blanks		
	_		0	Short answer		

Gradecenter links mobile assessments. Innovation evaluations in large classes mitigate obstacles in three ways: broadening the learning area from the classroom to a virtual learning group that nurtures a sense of belonging, and using audio signal to expand the venue for teacher feedback into a virtual community (Savin-Baden, 2010). Literature review findings emphasise creating MCQs as part of lectures using electronic voting machines (EVS), creating MCQs for use in tests and using brainteasers for peer discussion using EVS (Draper, 2009), using technology in Assessment for Learning (Savin-Baden, 2010), the audio of responses in higher education through technologies and media (Snowball, 2014), and using interactive features and internet activities to satisfy uniqueness in a large first-year class (OECD, 2013).

#### CONCLUSION

We are in agreement that large classes are relative. Even in the best of circumstances, teaching, managing, learning, and evaluating students in smaller classes can be difficult. The instructors of large classes have to consider the subject matter from a variety of angles and come to terms with the fact that large classes, despite their challenges, provide a wealth of educational opportunities.

#### RECOMMENDATIONS

The researcher offers the following suggestions on the basis of the findings and results, which are in accordance with the sources cited, as well as their own experience and competence:

Teachers should integrate ICT in Assessment in the Teacher Development Curricula for large classes, formulating and putting in place both assessment framework and assessment policy, instituting and enforcing Education Institution Assessment Committee (EIAC), using e- Monitoring of attendance, applying e- Assessment,

scoring tools and platforms including feedback provision and educating the students on the dangers and possible sanctions for plagiarism.

Teachers should engage students; clearly aligning assessment tasks with course and programme learning outcomes, and ensuring that students understand the learning they will achieve by completing the tasks, engaging in a group project, developing a course wiki, proactive and responsive class polling/online discussion, online feedback with general comments about a class's performance on an assignment.

Formative assessment feedback should be done, managing workload, and making large courses simpler for students by integrating assessment assignments into learning activities, collaborative and group work for arduous tasks, and giving students opportunities to test their own progress and uncover learning gaps. Multiple-choice questions for large classrooms, extended writing for a range of learning outcomes, including inquiry and critical thinking, written communication skills group work, and project and assessment rubrics.

There should be the use of technology to organize duties in large classes to start engaging students in their learning, such as Moodle to assist computer-marked quizzes/self-tests, gradeable blogs, wikis, and journals, internet conversation for responses or assessment, group task tools, a Grade Centre/Gradebook for having to manage marks, and Turnitin, an online grading and feedback tool for GradeMark.

#### REFERENCES

- Abdulwahed, M., & Nagy, Z. K. (2009). Applying Kolb's Experiential Learning Cycle for Laboratory Education. Journal of Engineering Education, 98(3), 283-294. https://doi.org/10.1002/j.2168-9830.2009.tb01025.x
- Absolum, M., et al. (2009). *Directions for Assessment in New Zealand: Developing Students' Assessment Capabilities*. Ministry of Education. Wellington.
- Airasian, P. W (2005). Classroom Conditions That Best Facilitate Learning MITCH REID (2006)
- Ajjan, M. and Smith, R. F. (2012). In 53 Problems with Large Classes. Ely, Cambs: The Professional and Higher Partnership.
- Anderson and Krathwohl (2001). Revised Bloom's Taxonomy. Retrieved from http://www.celt.iastate.edu/teaching/effective-teaching-practices/revised-blooms-taxonomy
- Assessment Reform Group (ARG) (2002). Assessment for learning: Ten Principles. (London Assessment Group). London. Retrieved from <a href="http://arg.educ.cam.ac.uk/CIE3.pdf">http://arg.educ.cam.ac.uk/CIE3.pdf</a>
- Baker, J. & Westrap, H. (2000). The English language teacher's handbook: How to teach large classes with few resources. London: Continuum.
- Ballantyne, R., Hughes, K., & Mylonas, A. (2002). *Developing procedures for implementing peer assessment in large classes using an action research process*. Assessment and Evaluation in Higher Education, 27(5), 427–441.
- Bass Hanna, G.S. & Dettmer, P.A. (2004). Assessment for Effective Teaching; Using context adoptive planning: Boston, Published by MA; Pearson A&B.
- Berry, R. (2011). Assessment trends in Hong Kong: Seeking to establish formative assessment in an examination culture. Assessment in Education: Principles, Policy & Practice, 18(2), 199–211.
- Biggs, J. (1997). Demythologising the Teaching of International Students. Learning and Development Guide No.5. University of Newcastle.
- Biggs, J. (1999). *Teaching for quality learning at university*: Buckingham: Society for research into higher education. Open University Press.
- Biggs, J. (2014). Constructive alignment in university teaching. HERDSA Review of Higher Education, 1, 5-22.
- Biggs, J. (2020). Teaching for Quality Learning at University, Assessment. First Year Principles, Threshold Learning Outcomes,
- Biggs and Tang's (2007). *Constructive alignment:* SOLO Taxonomy (Structure of the Observed Learning Outcome) (2007)
- Black, P. & William, D. (1998). Inside the black box: Raising standards through classroom assessment. Phi Delta Kappan, 80(2), 139–148.
- Black, P. & Wiliam, D. (1998). Assessment and classroom learning. Assessment in Education. Phi Delta Kappan, 5(1), 7–74.

- Black, P. & Wiliam, D. (2006). *Inside the black box: Raising standards through classroom assessment.*Granada. King's College London School of Education
- Blaich, C. & Wise, K. (2011). From gathering to using assessment results: Lessons from the Wabash national study. National Institute for Learning Outcomes Assessment. University of Illinois at Urbana Champaign: Champaign, IL.
- Board of governors (2013). Missouri State University: <a href="https://www.missouristate.edu/assessment/the-assessment-process.htm">https://www.missouristate.edu/assessment/the-assessment-process.htm</a>
- Bonfield, T. & Horgan, K. (2016). Learning to teach. Teaching to learn: a core text for primary student teachers in Ireland. Limerick. Paperback.
- Boud, D. (2010). Assessment 2020: seven propositions for assessment reform in higher education.

  Australian Learning and Teaching Council, Sydney. Available from assessmentfutures.com.
- Boud, D. & Falchikov, N. (2006). Aligning assessment with long-term learning: Assessment and Evaluation in Higher Education 31(4), 399–413.
- Brad, C. B. (2007). Types of Classroom Assessments: published an online column for the "New York Braskamp, L.A. & Engberg, M. E. (2014). Guidelines for judging the effectiveness of assessing student learning. Loyola University Chicago: Chicago IL.
- Broadfoot, P., Daugherty, R., Gardner, J., Harlen, W., James, M., & Stobart, G. (2002). Assessment for learning: 10 principles.
- Brown, G.& Knight, P. (2001). Assessment: a guide for lecturers. Assessment series no. 3. Learning and Teaching Support Network, York. Available from: heacademy.ac.uk/
- Brown, H. D. (2000). Principle of language and teaching. Addision Wesley: Longman.
- \*Brown, S., Race, P. & Smith, B. (2005). 500 tips on assessment. Routledge, London.
- \*Brown S & Smith, B (1997). Getting to Grips with Assessment. SEDA, Birmingham.
- Bull, J. & Danson, M. (2004). Computer assisted assessment (CAA). York, Learning and Teaching Support Network.
- Burns, M. (2005). Looking at How Students Reason. Educational Leadership.
- Campbell, R.J. (2006) Assessing teacher effectiveness: developing a differentiated model. London: New York: Routledge Falmer.
- Carbone, E. L. (1998). Teaching Large Classes: Tools and Strategies. Thousand Oaks, CA. Sage Publications.
- Carless, D. (2011). From testing to productive student learning: Implementing formative assessment in Confucian-Heritage settings. London: Routledge
- .Carless, D. (2015). Excellence in university assessment: Learning from award-winning practice. London: Routledge.
- Centre for Education Innovation (2021). Assessment in Large Classes. CEI, HKUST(.
- Cheryl, A. J. (2005). Assessment for learning: Learning and skills Development Agency. New North Ltd London.
- City University of Hong Kong. (2011). What is Outcomes Based Teaching and Learning (OTBL)? Office of Education Development and General Education. Retrieved November 16, 2017, from <a href="http://www.cityu.edu.hk/edge/obtl/elearn\_tool/p3.htm">http://www.cityu.edu.hk/edge/obtl/elearn\_tool/p3.htm</a>
- Clancy, E., Quinn, P., & Miller, J. (2005). Assessment of a Case Study Laboratory to Increase Awareness of Ethical Issues in Engineering. IEEE Transactions on Education, 48(2), 313-317. https://doi.org/10.1109/TE.2004.842900
- Cooper, J. L & Robinson, P. (2000). The Argument for Making Large Classes Seem Small. New Directions for Teaching and Learning. 81: 5-16.
- Davies, A. (2004). Finding Proof of Learning in a One-to-One Computing Classroom: Courtenay. BC: Connections Publishing.
- Dawson, P. (2012). Constructive alignment and learning outcomes. Retrieved November 16, 2017, from <a href="https://www.youtube.com/watch?v=Xs4WLm0uC2k">https://www.youtube.com/watch?v=Xs4WLm0uC2k</a>
- DeLuca, C., Klinger, D., Pyper, J. & Woods, J. (2015). Instructional rounds as a professional learning model for systemic implementation of Assessment for Learning. Assessment in Education: Principles, Policy & Practice, 22(1), 122–139
- Draper, S.W. (2009.) Catalytic assessment: understanding how MCQs and EVS can foster deep learning. British Journal of Educational Technology, 40, 2, 285-293.
- Dufresne, R.J., Gerace, W.J., Leonard, W.J., Mestre, J.P. & Wenk, L. (1996). *Classtalk: a classroom communication system for active learning*. Journal of Computing in Higher Education, 7, 3-47.
- Dziob D., Kwiatkowski L. & Sokolowska, D. (2018). Class tournament as an assessment method in physics courses: A pilot study. Eurasia Journal of Mathematics, Science and Technology Education, 14(4), 1111-1132. https://doi.org/10.29333/ejmste/81807
- Earl, L. (2003). Assessment as learning; Using classroom assessment to maximize students learning: Thousand Oaks, CA; Corwin.
- Engberg, M.E. & Manderino, M. (2013). *Collecting dust or creating change: A multi-campus usability study of student survey results*. Manuscript submitted for publication.
- Fernandes, S., Flores, M. A. & Lima, R. M. (2012). Students' views of assessment in project-led engineering education: findings from a case study in Portugal. Assessment & Evaluation in Higher Education, 37(2), 163-178. https://doi.org/10.1080/02602938.2010.515015

- Fetterman, D.M., (2008). Empowerment evaluation: An introduction to process use. Retrieved from http://www.rri.pdx.edu/fetterman\_empowerment\_10-2008.pdf
- Florez, M.T. & Summons, P., (2013). Assessment for learning: effects and impact. Centre for British teachers. Oxford University.
- Freeman, S. et al. (2014). Active learning increases student performance in science, engineering, and mathematics. PNAS 111(23): 8410-8415.
- Gardner-Medwin, A.R., (2006). Confidence-Based Marking towards deeper learning and better exams in C. Bryan & K. Clegg (Eds.) Innovative assessment in higher education. London. Taylor, & Francis.
- Gibbs, A. & Jenkins, G. (1992). *Teaching Large Classes in Higher Education*: Kogan Page Limited. In Dealing with Large Classes: A Real Challenge
- Gibbs, G (1992). Assessing More Students. The Teaching More Students Project. Oxonion Rewley Press, Oxford.
- Gaertner, H. (2014). Effects of student feedback as a method of self-evaluating the quality of teaching. Studies in Educational Evaluation, 42, 91-99. https://doi.org/10.1016/j.stueduc.2014.04.003
- Gibbs, G. (2006). How assessment frames student learning. In C. Bryan & K. Clegg (Eds.), Innovative assessment in higher education (p. 23). London: Routledge.
- Gibbs, G. & Simpson, C. (2004). Conditions under which assessment supports students' learning. Learning and Teaching in Higher Education, 1(1), 3-31.
- Gibbs G., Simpson C. & Macdonald R., (2003). Improving student learning through changing assessment a conceptual and practical framework. In European Association for Research into Learning and Instruction (EARLI) Conference (pp. 1-10). Padova, Italy.
- Green, K. H. & Emerson, A. (2007). A new framework for grading. Assessment & Evaluation in Higher Education, 32(4), 495-511. https://doi.org/10.1080/02602930600896571
- Government of Uganda. (1992). Government White Paper on Education Policy Review Commissiom Report. Kampala. MoES.
- Green, M. F. (2012). Measuring and assessing internationalization. Association of International Educators. New York: NAFSA.
- Guardia. C. & Alsina, I., (2016). Trends And Challenges of e-Assessment to Enhance student learning in Higher Education. In E.Cano and G. Ion (Education). Innovative practices for Higher Education Assessment, And measurable. chapter3, section1. Global.Dol:10.4018/978-1-5225-0531-0
- Habeshaw, S, Gibbs, G & Habeshaw, T., (1993). 53 Interesting Ways to Assess your Students. Cromwell Press Ltd. Trowbridge.
- Hasan, M. F. n.d. *Effective teaching in large classes*. Online: http://www.uobabylon.edu.iq/uobcoleges/fileshare/articles/large%20classes.pdf
- Harfitt, G. J. (2013). Why 'small' can be better: An exploration of the relationships between class size and pedagogical practices. Research Papers in Education, 28(3), 330–345
- Hayes, D. (2010). *The seductive charms of a cross-curricular approach*. Education 3-13, 38(4), 381-387. http://dx.doi.org/10.1080/00958964.2011.621995
- Heppne.r F. (2007). Teaching the Large College Class: A Guidebook for Instructors with Multitudes. San Francisco: Jossey-Bass.
- Hodges, L. (2016). Three Common Demands from Students in Large Classes and What to Do About Them. The National Teaching and Learning Forum 25.5: 1-4.
- Holland, J & Campbell, J., (2005). Methods in development research: combining qualitative and quantitative approaches. London, United Kingdom: ITDG Publications.
- Hornsby, D., & Osman, R. (2014). Massification in higher education: Large classes and student learning. Higher Education, 67, 711–719
- Hornsby, D.J, Osman, R, De Matos-Ala, J (eds) 2013. Hornsby DJ, Osman R, De Matos-Ala J (eds) 2013. Large-Class Pedagogy. Stellenbosch: "SUN PRESS
- Sambell K., MacDowell, L & Brown, S. (1997). 'But is it fair?': An exploratory study of student perceptions of the consequential validity of assessment. Studies in Educational Evaluation 23, no. 4: 349–71.
- Black, P. & Wiliam, D. (1998). Assessment and classroom learning. Assessment in Education, Principles, Policy and Practice 5, no. 1: 7–74.
- Boud, D. (2000). Sustainable assessment: Rethinking assessment for the learning society. Studies in Continuing Education 22, no. 2: 151–67
- Savin-Baden, M. (2004). Understanding the impact of assessment on students' performance in problembased learning. Innovations in Education and Teaching International 41, no. 2:221–33.
- Fernandes, S. Assunção, M. F. & Lima, R. M., (2012). Students' views of assessment in project-led engineering education: findings from a case study in Portugal. Assessment & Evaluation in Higher Education, 37:2, 163-178, DOI: 10.1080/02602938.2010.515015
- Irons, A. (2008). Enhancing Learning through Formative Assessment and Feedback. New York: Routledge. https://doi.org/10.4324/9780203934333
- James, R., McInnis, C. and Devlin, M. (2002). Assessing Learning in Australian Universities. This section was prepared by Marcia Devlin. Responding to the Assessment Challenges of Large Classes 2021 Assessing learning in Australian Universities

- Jens, S. (2005). Indirect and Direct Assessment Methods for continuous Assessment: Jacksonville State University
- Johnson, D. W. & Johnson, F. (2006). Joining together: Group theory and group skills (9th ed.). Boston: Allyn & Bacon.
- Bradley, K. (2018). New Trends in Classroom Authentic Assessment. Starnest Services Limited, Georgia
- Knight, P. (2001). A briefing on key concepts: Formative and summative, criterion and norm-referenced assessment. Assessment Series No. 7. York, UK: LTSN Generic Centre.
- Knight, J K, Wood W. B. (2005). Teaching More by Lecturing Less. Chudler E, ed. Cell Biology Education. 4(4):298-310. doi:10.1187/05-06-0082.
- Kristin, J. (2010). Formal & Informal Assessment Tools & Methods. Houston and New York City
- Krueger, R & Casey, M., (2000). Focus groups: a practical guide for applied research (3rd ed) Thousand Oaks (CA): Sage.
- Kominski, C. (2012). "Strategies to Assess Large Classes" (2012). *Test Item Writing*. 11. Assessment the UNTHSC Scholarly Repository
- Kuchah, K. and Smith, R. (2011). 'Pedagogy of autonomy for difficult circumstances: Principles from practice'. International Journal of Innovation in Language Learning and Teaching 5/2: 119-139. Online: http://www.tandfonline.com/doi/abs/10.1080/17501229.2011.577529
- Kusi, H., & Manful, H. O. (2019). Class Size and Academic Performance of Students In Selected Nursing And Midwifery Training Colleges in the Central Region, Ghana. Advances in Social Sciences Research Journal, 6(9), 224-246
- Lal, S. Lucey, A. D. Lindsay, E. D. Sarukkalige, P. R., Mocerino, M., Treagust, D. F., & Zadnik, M. G. (2017). An alternative approach to student assessment for engineering-laboratory learning. Australasian Journal of Engineering Education, 22(2), 81-94. https://doi.org/10.1080/22054952.2018.1435202
- Leask, B. (2006). Plagiarism, cultural diversity and metaphor—implications for academic staff development. Assessment and Evaluation in Higher Education 31(2), 183–199.
- Lewis, R. (2001). Classroom discipline and student responsibility: The students' view. Teaching and Teacher Education. 17, 307-319.
- Lizanne, D. James, G. Shriner, Claire A. L. (2001). Educating towards Inclusive Education: Teacher Decision Making in Participation of Students With Disabilities in Large-Scale Assessment Vol. 68, No. 1, pp. 7-22. University of Illinois at Urbana-Champaign ©2001 Council for Exceptional Children.
- McAlpine, M. (2002). *Principles of assessment*. Glasgow: University of Glasgow. Published by Robert Clark Center for Technological Education.
- McCormick, A. C. & McClenney, K. (2012). Will these trees ever bear fruit? A response to the special issue on student engagement. The Review of Higher Education, 35(2), 307-333.
- Mandinach, E.B., & Jackson, S.S. (2012). Transforming teaching and learning through data- driven decision making. Thousand Oaks: Corwin Press.
- Marshall, B. & Drummond, M. J. (2006). *How teachers engage with Assessment for Learning: Lessons from the classroom.* Research Papers in Education, 21(2), 133–149.
- Mayer, RE, Stull A, DeLeeuw, K. et al. (2008). Clickers in college classrooms: Fostering learning with questioning methods in large lecture classes. Department of Psychology, University of California, Santa Barbara, CA. <a href="http://dx.doi.org/10.1016/j.cedpsych.2008.04.002">http://dx.doi.org/10.1016/j.cedpsych.2008.04.002</a> (link is external)
- MoES (2010) Institutionalising continuous assessment in primary teacher education: Continuous handbook and guidelines for tutors in primary teacher education in Uganda. Kampala. MoES.
- MoES (2014). TISSA UNESCO teacher issues in Uganda. A shared vision for an effective teachers' policy. Kampala. MoES.
- Mostert, M., & Snowball, J. D. (2013). Where angels fear to tread: Online peer-assessment in a large first-year class. Assessment and Evaluation in Higher Education, 38(6), 674–686.
- Mulryan-Kyne, C. (2010). Teaching large classes at college and university level: Challenges and opportunities. Teaching in Higher Education, 15(2), 175–185.
- Museveni, Y. K. (2004). Enhancing UPE, A stake holders Handbook for Upper Primary: Kampala, Uganda. Published by Ministry of Education and Sports.
- Nguyen, M. T. T. (2015). Large Classes: Universal Teaching and Management Strategies. Binh Duong University. Vietnam
- Nico, David. (2007). E-assessment by design: using multiple choice test to good effect. Journal of Further and Higher Education, 31, 1, 53-64.
- Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: a model and seven principles of good feedback practice. Studies in Higher Education, 31(2), 199-218. https://doi.org/10.1080/03075070600572090
- Nicol, D. J., & Milligan, C. (2006). Rethinking technology-supported assessment practices in relation to the seven principles of good feedback practice. In Cordelia Bryan & K. Clegg (Eds.), Innovative assessment in higher education (pp. 64-77). London: Routlegde.
- OECD (2010). The Nature of Learning: Using Research to inspire Practice.

- OECD (2013). Synergies for Better Learning: An International Perspective on Evaluation and Assessment, OECD Reviews of Evaluation and Assessment in Education, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264190658-en.
- Ontario. Ministry of Education. (2010a). *Collaborative teacher inquiry*. Capacity Building Series –
  Secretariat Special Edition #16. Toronto: Author. Available at
  <a href="https://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS\_Collaborative\_Teacher\_Inquiry.pdf">www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS\_Collaborative\_Teacher\_Inquiry.pdf</a>.
- Pane, D. (2010). Viewing classroom discipline as negotiable social interaction: A communities of practice perspective. Teaching and Teacher Education, 26, 87-97.
- Patton, M.Q. (2002). Qualitative evaluation and research methods. Newbury Park (CA): Sage.
- Patton, M.Q. (2008). Utilization focused evaluation (4th ed) Saint Paul (MN): Sage.
- Patton, M.Q. (2012). Essentials of utilization-focused evaluation. Los Angeles, CA: Sage Publications.
- Pickford, R. and Brown, S. (2006). Assessing skills and practice. London and New York: Routledge.
- Pike, G. R. (2013). NSSE benchmarks and institutional outcomes: A note on the importance of considering the intended uses of a measure in validity studies. Research in Higher Education, 54, 149 – 170
- Prone, D. (2010). Viewing classroom discipline as negotiable social interaction. A community's of practice respective, teachers and teacher education. 26,87-97
- Pauline Carolyne Fortes & Abdellatif Tchantchane (2010). Dealing with Large Classes: A Real Challenge. International Conference on Mathematics Education Research (ICMER 2010)

  Dubai
- Quality Assurance Agency (2005). Enhancing practice. Reflection on assessment. Volumes I and II.

  Quality assurance Agency for Higher Education, Gloucester. Available from: enhancementthemes.ac.uk/resources
- Quality Assurance Agency (2013). UK Quality Code for Higher Education: Chapter B4: enabling student development and achievement. Chapter B6: assessment of students and recognition of prior learning. Quality Assurance Agency for Higher Education, Gloucester.
- Rajapriyah, A. & Smith, R. (2012). *Large Class Teaching Challenges and Possible Responses*. Coventry. United Kingdom.
- Rajapriyah, A. & Smith, R. (2018). Large Class Teaching Challenges and Possible Responses.

  University of Warwick, Coventry, CV4 7AL, United Kingdom
- Race, P. Brown, S., & Smith, B. (2005). 50 tips on assessment (2<sup>nd</sup> edition). London. Newyork: Routledge Falmer.
- Reilly, A.L. and Denny, P. (2010) Constructive evaluation: a pedagogy of student-contributed assessment. Computer Science Education, 20, 2, 145-167.
- Renaud, S., Tannenbaum, E. and Stantial, P. (2007). Student-centered teaching in large classes with limited resource. ELT Forum 2007/3: 12-17, 34. Available online: http://americanenglish.state.gov/files/ae/resource\_files/07-45-3-c.pdf
- Robert, J, Lewis, S.E., Oueini, R. & Mapugay A. (2016). Coordinated Implementation and Evaluation of Flipped Classes and Peer-Led Team Learning in General Chemistry. Journal of Chemical Education. 93(12): 1993-1998. doi: 10.1021/acs.jchemed.6b00395
- Rossi, P. Lipsey, M.. (2004). Evaluation: a systemic approach (7th ed) Thousand Oaks (CA): Sage.
- Rouse, M. Shriner, J. & Danielson, L. (2000). National assessment and special education in the United States and England and Wales. In M. McLaughlin & M. Rouse (Eds.), Special education and school reform in the United States and Britain (pp. 66-97). London: Routledge.
- Rule, A. C. (2006). The Components of Authentic Learning. Journal of Authentic Learning 3(1), 1–10.
- Ryan, J. (2005). Improving teaching and learning practices for international students: implications for curriculum, pedagogy and assessment. In Jude, C. and Ryan, J. (eds). Teaching International Students: Improving learning for all, 92–100. Abingdon: Routledge.
- Sambell, K. McDowell, L. & Montgomery, C. (2013). Assessment for learning in higher education. London: Routledge
- Savin-Baden, M. (2010). The sound of feedback in higher education. Learning, Media and Technology, 35(1), 53–64.
- Shamim, F. Negash, N. Chuku, C. and Demewoz, N. 2007. *Maximizing Learning in Large Classes: Issues and Options*. Addis Abbaba: The British Council. Available online: http://www.teachingenglish.org.uk/sites/teacheng/files/ELT-16-screen.pdf
- Schreiner, E. (2008). *Indirect and Direct Assessment Methods*: Bowling Green State University London-based freelance firm. London.
- Sethy, S. S. (2018a). Academic Ethics: Teaching Profession and Teacher Professionalism in Higher Education Settings. Journal of Academic Ethics, 16(4), 287-299. https://doi.org/10.1007/s10805-018-9313-6
- Sethy, S. S. (2018b). Professionalism in assessing students' performance: Roles and responsibilities of higher education teachers. In S. S. Sethy (Ed.), Higher Education and Professional Ethics (pp. 99-123). London: Routledge India. https://doi.org/10.4324/9781351173803-6
- Smith, K. (2011). Professional development of teachers—A prerequisite for AfL to be successfully implemented in the classroom. Studies in Educational Evaluation, 37, 55–61.

- Smith, M, Wood, W. B. & Adams, W. K. (2009). Why Peer Discussion Improves Student Performance on In-Class Concept Questions. Science. 323(5910): 122-124. doi: 10.1126/science.1165919
- Smith, R. (2008). Taking the bull by its horns: Zakia Sarwar's pro-autonomy approach to large classes in Pakistan (Part I)'. Independence 44: 7-13.
- Snowball, J. D. (2014). Using interactive content and online activities to accommodate diversity in a large first year class. Higher Education, 67(6), 823–838.
- Stanley, C.A. Porter, M.E. (2002). Engaging Large Classes: Strategies and Techniques for College Faculty. Boston: Anker Publishing Company, Inc.
- Stiggins, R. J. et al. (2004). Classroom Assessment for Student Learning: Portland, Published by Assessment Training Institute.
- Strong, P. (2018.) Assessing Large Classes. Teaching at UNSW, Sydney NSW 2052, Australia UNSW CRICOS Provider Code: 00098G, TEOSA Provider ID: PRV12055, ABN: 57 195 873 17
- Strong, P. (2018). Teaching and Assessing Large Classes. Teaching at UNSW. Sydney. Australia
- Subheesh, N. P. & Sethy S. S. (2019). Learning through Assessment and Feedback Practices: A Critical Review of Engineering Education Settings Chennai, INDIA
- Subheesh, N. P., & Sethy, S. S. (2018). Assessment and Evaluation Practices in Engineering Education:

  A Global Perspective. In 3rd International Conference of the Portuguese Society for
  Engineering Education (CISPEE) (pp. 1-5). IEEE.
  https://doi.org/10.1109/CISPEE.2018.8593451
- Suskie, L. (2010). Assessing Student Learning: A Common-Sense Guide. San Francisco, CA: John Wiley & Sons.
- The Republic of Uganda (2019). The National Teachers' Policy (NPT). MoES, Kampala. Uganda.
- Trahar, S. (2007). Teaching and learning: The international higher education landscape—some theories and working practices. ESCALATE Education Subject Centre Discussion Series. Bristol: ESC
- TEQSA. (2012). Higher education standards framework. Retrieved November 16, 2017, from Department of Education: <a href="http://www.teqsa.gov.au/regulatory-approach/higher-education-standards-framework">http://www.teqsa.gov.au/regulatory-approach/higher-education-standards-framework</a>
- UNESCO (2005). Guidelines for Quality Assurance in Basic Education in Uganda, A Guide foer Managers, Teachers, Inspectors and Community Leaders. Kampala. Uganda National Commission for UNESCO.
- United Kingdom Department for Education (2016). Standards for teachers' professional development. UK: Crown.
- University of Ulster (2015). Assessment handbook. University of Ulster, Coleraine
- Valerien, J. (1991). Innovations 'for large classes: A guide for teachers and administrators. UNESCO France.
- Weeden, P. et al. (2000). The Learn Project: guidance for schools on assessment for learning. (available on the QCA website-assessment for learning).as part of class room activities is a fundamental process which is required to promote learning and ultimate achievement
- Western and Northern Canadian Protocol for Collaboration in Education (WNCP). (2006). *Rethinking classroom assessment with purpose in mind: Assessment for learning, assessment as learning, assessment of learning*. Retrieved June 04, 2021, from www.wncp.ca/media/40539/rethink.pdf.
- Wiggins, G. (2001). Educative assessment. San Francisco: Jossey-Bass.
- Wiliam, D. (2011). What is assessment for learning? Embedded Formative assessment: Studies in Educational Evaluation. Bloomington.
  - Wiliam, D., & Thompson, M. (2008). *Integrating assessment with learning: What will it take to make it work?* In C. Dwyer (Ed.), *The future of assessment: Shaping teaching and learning* (pp. 54–84). New York: Lawrence Erlbaum Associates.
- Xie, H. (Ed.). (2014). Education statitics yearbook of China. Beijing: People's Education Publishing House
- Yueting Xu & Gary Harfitt (2018). Is assessment for learning feasible in large classes? Challenges and coping strategies from three case studies: Published online: 11 Dec 2018
- Yueting Xu & Gary Harfitt (2019). Is assessment for learning feasible in large classes? Challenges and coping strategies from three case studies, Asia-Pacific Journal of Teacher Education, 47:5, 472-486, DOI: 10.1080/1359866X.2018.1555790
- Yeh, S. S. (2009). Class size reduction or rapid formative assessment? A comparison of costeffectiveness. Educational Research Review, 4, 7-15
- Yorke, M. (2008). Grading Student Achievement in Higher Education. London: Routledge. https://doi.org/10.4324/9780203939413