

# Using Activity Theory to Explore the Possibilities of Integrating ICT in the Training of Literature in English teachers at Makerere University: A Literature Review

**Rebecca Nambi**  
Makerere University  
Kampala, Uganda

**Abstract.** Using the theoretical lenses of Activity Theory this paper reviews literature about the possibilities of integrating Information and Communication Technology (ICT) to develop teacher trainees' skills in collaborative and critical analysis of Literature in English texts. The review is based on the following arguments: 1) There are many affordances within the context of Uganda in general and Makerere University in particular to facilitate such integration. 2) Trainees can integrate ICT in their lessons if they themselves experience it during their training. 3) The study of Literature texts is inherently collaborative as readers interpret meaning and attempt to relate it to their own experiences. 4) ICT can provide the space and tools to develop pedagogical skills among teacher trainees of Literature. 5) Activity Theory provides the framework to explore the literature for the opportunities and gaps of using ICT to train Literature teachers.

**Keywords:** Literature in English; Information Communication Technology; Activity Theory.

## **Introduction**

The Ministry of Education and Sports (MoES) in Uganda promotes the integration of Information Communication Technology (ICT) in education as an academic subject, a teaching/learning tool and a tool for effective school management (Farrell, 2007; Ndawula, 2016). Different levels of education have adopted ICT for various purposes. However, research and several reports indicate that the adoption of ICT is still dogged by some challenges like inadequate power supply (Ndawula, Kahumba, Mwebembezi & Masagazi, 2013) poor ICT structures (Farrell, 2007) and weak ICT competence levels of teachers (Kintu & Zhu, 2015).

Higher institutions of learning in Uganda are at the forefront of implementing the integration of ICT in education. The Ministry of Information and Communications Technology (2014) policy charges universities with the responsibility of developing ICT human resource and establishing effective innovation centers. In addition, ICT has become an educational tool in most universities in Uganda (Bakkabulindi & Ndibuuza, 2015) and it has attracted multiple studies (Bakkabulindi, 2011, 2012; Ndawula, Ngobi, Namugenyi, & Nakawuki, 2012; Omona, Weide & Lubega, 2010; Sebbowa, Ng'ambi & Brown, 2014). These studies document how ICT has been adopted in higher education in Uganda and also provide the much-needed evidence to show the potential for ICT in education (Dede, 1998). However, most of these studies focus on users' attitudes towards ICT (Bakkabulindi & Ndibuuza, 2015; Ndawula et al., 2012) or general challenges (Bakkabulindi, 2012; Kintu & Zhu, 2015) and pay less attention to the teaching/learning of specific subjects such as English and Literature in English (LE).

The training of English and Literature teachers and the use of ICT deserve attention because English is not only the official language in Uganda, it is also the language of instruction starting from Primary Four (10 years of age) to tertiary institutions. LE is taught to support the teaching/learning of English language and all teachers of English must offer LE as their second teaching subject (NCDC, 2008a). The major tension surrounding English as a subject is that it is a second language to Ugandans and most of them first encounter it when they join formal education. English is a high-stakes subject in Uganda because failing it at secondary school leads to failure to join higher institutions of learning and automatically changes the affected student's grade three steps lower (NCDC, 2008a; NCDC, 2008b). That notwithstanding, English is one of the most failed subjects at secondary school level and teacher-training institutions such as Makerere University are usually called upon to receive part of the responsibility (UNEB, 2017).

Using the lens of Activity Theory (AT) this presentation explores what literature says about the possibilities of integrating ICT in the training of LE teachers at Makerere University. In the next section I present an overview of the context of higher education at Makerere University before I introduce the principles of AT and its potential to guide this review. Literature on LE teaching for adolescents is presented next alongside the main tenets of AT. Before the conclusion I look at ICT as a possible pedagogical tool to support the teaching/learning of LE.

### **Context: School of Education, Makerere University**

School of Education (SoE) is a faculty within the College of Education and External Studies (CEES) of Makerere University. ICT is visible in SoE in form of Internet services and more than 100 computers provided by the University (Makerere University, 2008), personal computers for lecturers and some students, the availability of smart boards in some lecture rooms, portable projectors and smart phones. Some lecturers in SoE have embraced these opportunities to utilize ICT as a pedagogical tool (Bakkabulindi, 2011) albeit without following any particular framework of implementation (Bakkabulindi &

Oyabade, 2011; Omona et al., 2010). Although the CEES strategic framework advocates for the use of ICT resources by lecturers and students, it is silent on the peculiarities of actual adoption of ICT during preparation and delivery of lectures (CEES, 2011).

The teaching of English and LE for teacher trainees is partly housed in SoE and students receive limited time attending pedagogical courses despite the importance attached to English as noted earlier. Although teacher trainees at Makerere University cover an extensive load ranging from 10 to 13 courses per semester during their final year, the pedagogical courses are allocated limited time. For instance, a course on methods of teaching poetry is allocated only 30 hours in the entire three-year span of the BA ED programme (SoE, 2009). It is true that the trainees are taught about poetry in other courses like 'the changing patterns in poetry', however their exposure to teaching methods is lacking especially with the current pedagogical trends that emphasize learner-centeredness and collaboration as students learn from and with each other (Vygotsky, 1978). The time of 30 hours barely affords trainees to practice the teaching/learning of LE which is regarded as a social activity that brings into play communal shared experiences, critical analysis and dialogue (Cliff Hodges, 2016; Moje, 2008; Nystrand, 1997; Janks, 2010). Consequently, the challenge of teacher centeredness is likely to manifest in the trainees' future practice after they qualify as secondary school teachers. ICT can help us address some of the contextual challenges identified above and the purpose of this review is to craft a framework to this effect.

### **Activity Theory**

AT presupposes that any human activity is a collective undertaking that involves the use of tools to solve a specific tension or contradiction (Engeström, 1987). Vygotsky (1978) lays the foundation for AT in his theory about how children learn. Vygotsky (1978) argues that: "human learning presupposes a specific social nature and a process by which children grow into intellectual life of those around them" (p.88). He adds: "Thought development is determined by language, i.e., by the linguistic tools of thought and the sociocultural experience of the child" (Vygotsky, 1986, p. 94). Vygotsky's work provides interconnected lynchpins to explain the learning/teaching process, for example, 1) interaction 2) mediation 3) language is a tool for teaching/learning and 4) thought or intellectual development. However, Vygotsky mainly accounts for how a child can develop cognitively as an individual but there is need to consider the actual processes of interaction. For instance, how does the individual contribute to the activity during interaction and what do they take away from it?

Leontiev (1981) addresses some of these gaps by introducing the concept of division of labour indicating the different layers of hierarchy that an individual goes through to attain intellectual growth (Hardman & Amory, 2015). According to Leontiev (1981) operation, action and activity consciously work together to achieve the desired motive. If extended to the classroom setting, division of labour would imply assigning different roles to students and teachers in relation to how they work with tools such as ICT, textbooks or pictures to achieve the

lesson objectives. Engestrom develops Vygotsky and Leontiev's work further by including rules and community to explain the context collective activity (Hardman, 2008). According to Engestrom (1987) the relationship among the six components of subject, object, tool/artefacts, community, rules and division of labour defines the activity system of a group of people towards a target object.

Hardman (2008) makes direct linkages between AT and pedagogy by providing a checklist of possible questions one can ask when analyzing teaching/learning episodes. Although Hardman's (2008) work was part of a study investigating pedagogical practices of primary school teachers of mathematics in the Western Cape of South Africa, it nevertheless offers a useful analytical framework and language harnessed within AT in any educational context. Within this review I often come back to this article as I make meaning of the literature in my own context of using ICT to train teachers of LE at Makerere University.

### **Literature in English (LE)**

Research about the teaching/learning of LE is mostly incorporated within literacy or English studies because the two disciplines aim at similar learning outcomes. Thus the term literacy in the literature I review here is used concomitantly with LE as I explore how the six pedagogical dimensions of subject, mediating artefact, object, rules, community and division of labour can be addressed in the training of LE teachers.

### ***Object***

Moje (2008) argues that studying LE among adolescents "revolves around interpreting figurative language and recognising symbols, irony, and satire in texts that are situated in historical contexts, contexts of different social, cultural, and political systems...teachers must also identify literacy devices that signal emotions, motives and goals" (p.65). She advises LE teachers to guide learners to use the skills responsively even in other contexts beyond the classroom. This statement sits well within the AT pedagogical dimension of 'object' (Hardman, 2008) in the sense that the study of a literary text is seen beyond the text itself to include the sociocultural and political events confined in and outside the text. The contradiction that arises here is that the curriculum and examinations in Uganda mainly emphasize the literal meaning of a poem, play or novel by focusing on aspects such as use of language, stylistic devices and characterization (NCDC, 2013). However the context of teacher training in courses such as 'ELE 3201: Methods of Teaching Literature (Novels, Plays)' can provide space for integrating the sociocultural context behind the text with that of learners especially in the areas of theoretical approaches. Historical criticism and critical literacy (Janks, 2010; Dixon 2011) theoretical approaches can offer learning space (Hardman, 2008) to guide trainees to engage with texts in a wider context. In this way the trainees can be stimulated to question and analyze Literature texts with the aim of transforming the interpretation of the content in relation to the realities in their context (Engestrom & Sannino, 2016).

### ***Division of labour and community***

AT also stipulates that teaching/learning is an activity system whereby different people, objects and events take on roles during the learning process (Hardman & Amory, 2015). Moje, Dillon and O'Brien (2000) argue that the LE text, the learner and the context take on different roles in class and that teachers need to understand this fact. The learner for instance, carries multiple identities from his/her background, while the text itself bears, performs (as) and reveals cultural tools and purposes. The context could include the classroom environment and the home or community settings of the learners. Moje et al. (2000) thus argue that "What one knows, does, or learns in one's family or church, for example, is not forgotten simply because one is situated in a classroom or school context. Moreover, contexts do not have neat boundaries and cannot easily be defined" (p.167). In these arguments, we see the AT pedagogical dimensions of community and a hint of division of labour. However, the division of labour here unlike the one focused on by Hardman (2008) extends beyond the classroom context to interrogate those sociocultural nuances that the learners carry from their personal backgrounds to the classroom in general and to the text. Moje et al. (2000) report a case of Khek a 12-year-old girl who was disengaged during the reading of the novel *The Cage*. Although Khek's teacher was convinced that Khek was simply one of those learners who could not be 'thrilled' by any text or event at school, the researchers established that several factors such as Khek's Bhuddhist religion, her limitations in spoken English and the fact that the teacher did not pick her to give answers combined to portray her as a disengaged student (Moje et al., 2000). To relate to the concept of division of labour, the teacher did not take the time to understand Khek and her unique interests in order to support her accordingly. However, there is a looming contradiction here because understanding individual differences among learners could be an uphill task especially in a context like Uganda where an LE classroom in some schools has over 120 students (Nambi, 2015).

Moje et al. (2000) stretch the dimension of community further when they suggest a consideration of the contextual factors that may influence the learners' engagement with the text. This is in contrast with Hardman (2008) whose community AT checklist is "What community is involved in this episode? What group of people work together on one object?" (p.76). The community seems to revolve around the teacher and the rules of the classroom with little regard to the contribution of the student. Moje et al. (2000) emphasise that "... secondary literacy educators and researchers need to consider how they explore, write about and teach to the multiple and complex identities that learners construct in various contexts both in school and out of school" (p.177). The rules and community within the bounds of the classroom are useful in creating order and can help the teacher address the requirements of the curriculum in a given period, however it is equally important to seek a framework that can enable teachers to understand how and why learners' respond to novels and plays in a given way.

### *Subject and mediating artefacts*

The two dimensions, subject and tools, are discussed together here because teachers usually determine the tools to use in the classroom. Tools can include books, ICT gadgets, language, textbooks and posters. Language/speech/talk/dialogue has been widely researched as a tool that generates interaction in the classroom (Alexander, 2008a & b; Littleton & Mercer, 2013; Mercer, 2000; Nystrand, 1997; Tudge, 1998).

In the teaching/learning of LE Nystrand's (1997) work is indispensable in guiding teachers on how they can use language as a mediation tool. Nystrand (1997) focuses on what he terms as the two extremes of instruction: recitation and discussion. He argues that the teacher can get learners to mention the events and characters in a play or novel under a recitation episode (they would still be using language as a tool) but this is not very useful if it does not lead to constructive conversation. Nystrand (1997) uses the examples of Ms. Lindsay's and Mr. Schmidt's lessons to illustrate that the types of questions the teacher asks contribute to the quality of talk. Probing and substantive questions which are fewer and involve turn taking between the teacher and learners as used by Ms. Lindsay lead to sustained and in-depth instruction. On the other hand, copious and unconnected questions as used by Mr. Schmidt tend to seek specific fixed information about LE texts without encouraging learners to engage deeply with the content.

Nystrand (1997) and Nystrand, Wu, Zeiser, Gamoran and Long (2003) propose some guidelines about the type of questions should that can help LE trainees achieve effective dialogic instruction during their lessons. Nystrand et al. (2003) argue that teachers can help learners to unfold knowledge about LE texts by: 1) asking questions that are authentic, questions which do not have prescribed answers; 2) integrating learners' responses into subsequent dialogue and questions; 3) evaluating learners' answers substantively by acknowledging, expanding or asking follow up questions of other learners; 4) asking questions that lead to higher cognitive levels through analysis, evaluation and application by relating current content to prior knowledge. For instance, Nystrand (1997) reports that in one of the lessons they observed, the teacher posed the following question to a class studying the novel *To Kill a Mocking Bird*: "How does Tom die?" (p. 41). He argues that this question provoked a simple recitation of events in the novel. Indeed such questions may indicate to the teacher the extent of learners' knowledge of the text but they limit talk to factual information and they encourage memorisation instead of discussion. Nystrand et al. (2003) suggest the scale below to determine the extent to which questions can lead to different cognitive levels when reading LE texts:

- *"Record of an on-going event: What's happening?"*
- *Recitation and report of old information: What happened?"*
- *Generalization: What happens?"*
- *Analysis: Why does it happen?"*
- *Speculation: What might happen?"*

(Nystrand et al., 2003, p. 148)

Nystrand et al. (2003) argue that the first two types of questions do not open up discussion and thus lead to lower cognitive levels in terms of text interpretation. While this scale is informative for this review because it provides a structure for tracking the types of questions used by teachers, it is also important to acknowledge that questions are only part of the larger classroom experience. For instance, if the teacher asks the 'right' question but the learners lack the linguistic skills to respond appropriately or lack copies of the novel to cross-reference the question with, then the discussion will not be effective.

It is clear that teachers are the driving force behind how language can be used as a tool as shown above but the pedagogical dimension of teachers-as-subject needs to be qualified further. Teachers' beliefs and attitudes can be manifested in the way teachers think about the curriculum, for example most teachers usually regard the curriculum as not compulsory because they view themselves as being independent in making decisions for their classes (Fullan & Pomfret, 1977; Fullan, 1994; Fullan, & Stiegelbauer, 1991). Teachers tend to focus more on the content to be taught than the teaching methods or the life skills that are usually recommended (Nambi, 2011). Thus, as we explore how ICT can be integrated in the LE classroom it is important to interrogate all the possible aspects that may influence teachers' decisions about the innovation.

### **Rules**

Rules in one way relate to the division of labour because they involve turn taking and this implies everyone in the classroom should have a slot when they talk or perform an activity. Rules also relate closely to the subject or the teacher because as an expert peer the teacher usually sets the rules though some of the rules may originate from the school ethos. This interconnectedness is what generally contributes to the activity system of the learning process. Rules stem from Engestrom's (1987) contribution to AT at the third generation stage though they can also be situated in the second generation at the operations level (Leontiev, 1981). Littleton and Mercer (2013) suggest that for exploratory talk to be effective during group work, ground rules should be set and everyone should have some responsibility such as "... teacher responsibility, joint responsibility and student responsibility..." (p. 103). They suggest that the teacher should provide regulatory support to help learners formulate and observe ground rules and later allow the students to co-regulate their own group work. For instance, in an attempt to maximise exploratory talk in one of their projects called 'interactive whiteboards', Warwick, Mercer and Kershner (2013) suggested rules that encourage cooperation during group work.

In the same way Lewis and Wray (2000) suggest strategies for group discussion during a LE lesson where "everyone must participate; everyone must cooperate; everyone must know the answer, that is, anyone in the group should be able to explain the group's thinking, and talk, acting as spokesperson" (p. 30). Yandell (2012) provides an example of how clear rules can lead to collaborative teaching/learning in an LE lesson. The 11-12 year old learners in his study were reading George Owerll's novel *Animal Farm*. The teacher assigned clear rules

and roles to learners in their groups: 1) to record the main events in the novel 2) to take on the role of one character 3) formulate questions directed towards Squealer, the spokesman and one of the leaders of the farm. During the presentation the learners used division of labour whereby each member got to play a role either to pose questions, or write on the sugar paper provided by the teacher, or present before the class or answer questions or take on the role of Squealer.

It is worth noting that these rules are not applicable in all classroom contexts. For instance, Littleton and Mercer (2013) state that their work was carried out in the UK where “It is an established practice in British primary education for children to work in small groups” (p. 64). Such a scenario is different from the Ugandan educational setting that is still relatively dominated by teacher-centered practice. Inversely, ICTs such as social media may offer an opportunity for more students to participate towards the lesson.

### **ICT as pedagogical tool to support LE teaching/learning**

ICT is an umbrella term used for different applications of technology in communication Turban, Rainer, & Potter (2005) and it includes tools such as computers, the Internet, socio media, Google Docs and video. Clearly ICT fits under the pedagogical dimension of mediating artefacts/tools. ICT in education is manifested in a wide range of aspects which could be as simple as the availability of a computer or as complex as designing online classrooms. Computer Assisted Language Learning (CALL) and multimodality in literacy help to delimit the relevant literature here.

#### ***Computer Assisted Language Learning (CALL)***

Levy (1997) defines CALL as “the search for and study of applications of the computer in language teaching and learning” (p.1). Generally, CALL can be regarded as a sub-discipline in the study of language especially English as a second language (Chapelle, 2001) and it involves using computer technologies such as guided drill, collaborative writing and spell checkers. Warschauer (1996) explains that CALL can be used in language learning as: a tutor, a stimulus or a tool under the communicative model. If CALL is used as a tool then “... the programs do not necessarily provide any language material at all, but rather empower the learner to use or understand language” (p.5). Some of the software that can be used by CALL as a tool include spelling and grammar checkers, publishing programmes and word-processors (Bax, 2003; Warschauer, 1996). However Bax (2003) argues that despite its long history CALL has failed to be fully integrated in the language classroom and she calls for normalisation whereby CALL “... ceases to exist as a separate concept and field for discussion” (p.23).

Bax (2003) suggests a diffusion of factors such as paying attention to technology, language teachers’ attitude and available software if the implementation of CALL is to be successful. Karlstrom and Lundin (2013) in their study investigated the application of CALL within the zone of proximal development with students learning Swedish as a second language. They used the word-



processor to display grammatical aspects such as parts of speech and observed how students responded to them and developed them further in real time. Their findings reveal that out of the three sessions they conducted with students, the on-task activities were much less in session one and they attributed this to the fact that students were not yet familiar with 'Grim' the specialized Swedish word-processor. They argue that availability of ICT is not synonymous with better cognitive development, but rather teachers need to constantly guide students within the zone of proximal development as they integrate CALL.

These snapshots of what CALL is and how it can be used in LE teaching/learning are relevant because they indicate that some ICT programmes have been particularly designed for language teaching/learning whereas others can be adapted to serve the purpose (Levy, 1997; Warschauer, 1996). CALL applications are suitable to LE instruction as well because vocabulary build up and syntactical awareness are valid topics when interpreting poetry, novels and plays.

### ***Multimodal literacy***

Multimodality in LE teaching/learning is mainly associated with the writings of Kress and Van Leeuwen (1996), Lankshear and Knobel, (2011), Pahl and Rowsell (2012) and Sanders and Albers (2010). Multimodality broadens the study of LE to include other modes of communication that a text may present such as images, animations, sounds, music, gestures and movement. Thus teaching/learning LE necessarily requires "using signs, signals, codes, graphic images" (Lankshear & Knobel, 2011, p. 21). Sanders and Albers (2010) similarly argue that LE teachers/students must "... be able to read and create a range of online texts, ... [using] Web 2.0 tools, and critically analyze multimodal texts that integrate visual, musical, dramatic, digital, and new literacies" (p.2). Such arguments have useful insights into the possible ways of integrating ICT in LE teaching/learning however the major contradiction is that: "As literacy and language arts teacher educators, we continually struggle with the tension between the restrictive culture of political mandates that value traditional approaches to literacy..." (Sanders & Albers, 2010, p.2). Still, the important lesson from multimodal literacy is the argument that the study of LE is innately supported with possibilities of integrating ICT as students respond to and produce texts.

Jewitt (2006) uses AT lens to think about learning and expand on how ICT can work as a multimodal conduit in the LE classroom. Jewitt (2006) presents an example in her research when students used a CD-ROM to study character and characterisation in Steinbeck's novel *Of Mice and Men* and the change they underwent as they got to appreciate even the minor character (Curly's wife) with a sense of empathy "... through voice, music, gesture, movement and image" (p.78). The main idea here is that technology adds value to the reading experience by bringing the characters to life hence enhancing students' understanding of the same. Jewitt (2006) argues that students are involved in joint activity as they "... point, gesture, gaze at the screen, move the mouse (or joystick), click on icons and sometimes ...talk" (p.76). This literature therefore

suggests that it is imperative to choose the appropriate ICT for particular LE texts. It also suggests that the simple activities of 'pointing', 'gesturing' and 'gazing at the screen' are potential guidelines for monitoring students' engagement levels with ICT.

## Conclusion

The literature suggests numerous possibilities for the integration of ICT in the training of LE teachers at Makerere University. The general political and educational context in Uganda and the fundamental importance attached to LE are pointers to an enabling environment. The reviewed literature using AT lenses has demonstrated that the teaching/learning of LE has advanced to levels of having sub-disciplines such as CALL whose guidelines researchers or practitioners can adjust according to the affordances in their contexts. For instance, the course outline for 'ELE 3201: Methods of Teaching Literature (Novels, Plays)' indicates 'Using textbooks, web resources, journals for the Literature class' as one of the topics to be taught and it is a valid entry point to train teachers practically in integrating ICT in their future classrooms. Several writers provide useful guidelines on how talk/language can lead to cognitive development through interaction.

Additionally, potential gaps have also been identified. For instance most of the success stories of integration of ICT in LE studies are from different contexts with innumerable affordances. However as the discussion above has revealed at several points the integration of ICT in education is a fluid process and pedagogical dimensions such as rules are adjustable depending on the context. Moreover, the literature shows that the study could mainly be restricted to the first generation level of AT but there are hints of crossing to the second and third generation levels to cater for the pedagogical dimensions of community, division of labour and rules.

AT is a valuable framework to research education because it readily accounts for the important pillars in the learning process: the content, the rules, teachers and their beliefs, the roles of teachers and learners, the dynamics in the classroom community and the relevant classroom tools or artefacts. All these work together to lead to better learning outcomes and for educational practitioners, AT can be used as a checklist as they prepare to implement change. However, AT appears to pay less attention to the sociocultural subtleties that influence learners' responses to LE texts. Perhaps this aspect can be catered for under the community dimension but it is a dimension that for which further explication may be sought.

## References

- Alexander, R. (2008a). *Towards dialogic teaching: rethinking classroom talk*. (4th ed.). Osgoodby: Dialogos.
- Alexander, R. (2008b). *Essays on pedagogy*. New York: Routledge.
- Bakkabulindi, F. E. K. (2011). Individual characteristics as correlates of use of ICT in Makerere University. *International Journal of Computing and ICT Research*, 5(2), 38-45. Retrieved June 19, 2018 from <http://www.ijcir.org/volume5-number2/article4.pdf>

- Bakkabulindi, F. E. K. (2012). Does use of ICT relate with the way it is perceived? Evidence from Makerere University. *International Journal of Computing & ICT Research*, 6(2), 75-94. Retrieved June 10, 2018 from <http://www.ijcir.org/volume6-number2/article7.pdf>
- Bakkabulindi, F. E. K., & Ndibuuza, F. (2015). Scholars of the dotcom era? The use of ICT by undergraduate students in Uganda Martyrs University, Uganda. Retrieved June 1, 2018, from <http://cees.mak.ac.ug/sites/default/files/SAICET-2015-Proceedings.pdf>
- Bakkabulindi, F.E.K., & Oyebade S. A. (2011). Organizational characteristics and use of personal computer software by graduates in Makerere University. *Journal of US-China Education Review*, A3, 331-338. Retrieved June 10, 2018 from [https://www.coe.unt.edu/sites/default/files/1229/AHER\\_Vol9.pdf](https://www.coe.unt.edu/sites/default/files/1229/AHER_Vol9.pdf)
- Bax, S. (2003). CALL – past, present and future. *System*, 31(1), 13-28. doi:PII: S0346-251X(02)00071-4
- Chapelle, C. (2001). *Computer applications in second language acquisition*. Cambridge: Cambridge University Press.
- Cliff Hodges, G. (2016). *Researching and teaching reading: developing pedagogy through critical enquiry*. Routledge: New York.
- College of Education and External Studies (CEES). (2011). *Strategic plan 2011/12 – 2018/19*. Kampala: Makerere University Printery.
- Dede, C. (1998). Six challenges for educational technology. Retrieved June 10, 2018, from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.24.9345&rep=rep1&type>
- Dixon, K. (2011). *Literacy, power, and the schooled body: learning in time and space*. New York: Routledge.
- Engeström, Y. (1987). *Learning by expanding an activity – theoretic approach to developmental research*. Helsinki: Orienta-Konsultit Oy.
- Engestrom, Y., & Sannino, A. (2016). Expansive learning on the move: insights from ongoing research. *Journal for the Study of Education and Development*, 39(3), 401-435. <https://doi.org/10.1080/02103702.2016.1189119>
- Farrell, G. (2007). ICT in education in Uganda. Retrieved June 1, 2018, from [http://www.infodev.org/infodev-files/resource/InfodevDocuments\\_435.pdf](http://www.infodev.org/infodev-files/resource/InfodevDocuments_435.pdf)
- Fullan, M. (1994). Implementation of Innovations. In: T. Husen, & T. N. Postlethwaite (Eds.), *The International Encyclopedia of Education* (2nd ed.). (pp. 2839 – 2847). Oxford: Pergamon Press.
- Fullan, M., & Pomfret, A. (1977). Research on curriculum and instruction implementation. *Review of Educational Research*, 47(2), 335-397.
- Fullan, M., & Stiegelbauer, S. (1991). *The new meaning of educational change*. London: Cassell.
- Hardman, J. (2008). Researching pedagogy: An activity theory approach. *Journal of Education*, 45(1), 65-95. Retrieved June 1, 2018 from [http://joe.ukzn.ac.za/Libraries/No\\_45\\_Dec\\_2008/Researching\\_pedagogy\\_an\\_Activity\\_Theory\\_approach.sflb.ashx](http://joe.ukzn.ac.za/Libraries/No_45_Dec_2008/Researching_pedagogy_an_Activity_Theory_approach.sflb.ashx)
- Hardman, J. & Amory, A. (2015). Introduction to cultural-historical activity theory and tool mediation. In V. Bozalek., D, Ng'ambi., D, Wood., J, Herrington., J, Hardman., A, Amory (Eds.). *Activity Theory, Authentic Learning* (pp. 1-21). Oxon: Routledge.
- Janks, H. (2010). *Literacy and power*. London: Routledge.
- Jewitt, C. (2006). *Technology, literacy and learning: A multimodal approach*. London: Routledge.
- Karlstrom, P., & Lundin, E. (2013). CALL in the zone of proximal development: novelty effects and teacher guidance. *Computer Assisted Language Learning*. 26(5), 412-429. doi:10.1080/09588221.2012.663760

- Kintu, J. M., & Zhu, C. (2015). Computer competences among academic staff and students in relation to the use of blended learning: The case of Mountains of the Moon University in Western Uganda. Retrieved June 1, 2018, from <https://www.researchgate.net/publication/286932898>
- Kress, G., & Van Leeuwen, T. (1996). *Reading images: the grammar of visual design*. London: Routledge.
- Lankshear, C., & Knobel, M. (2011). *New Literacies: everyday practices and social learning* (3rd ed.). Maidenhead: Open University Press.
- Leontiev, A. N. (1981). The problem of activity in psychology. In J. V. Wertsch (Ed.), *The concept of activity in Soviet psychology* (pp. 37-71). Armonk, New York: Sharpe.
- Levy, M. (1997). *Computer-assisted language learning: Context and conceptualization*. Oxford: Oxford University Press.
- Lewis, M., & Wray, D. (2000). Theory into practice: strategies to support literacy development. In M. Lewis & D. Wray (Eds.), *Literacy in the secondary school* (pp. 29-50). London: David Fulton Publishers Ltd.
- Littleton, K., & Mercer, N. (2013). *Interthinking: putting talk to work*. London: Routledge.
- Makerere University. (2008). *Strategic plan 2008/09 - 2018/19*. Kampala: Makerere University Printery.
- Mercer, N. (2000). *Words and minds: How we use language to think together*. London: Routledge.
- Ministry of Information and Communications Technology. (2014). *National Information and communications technology policy for Uganda*. Kampala: Government Printers.
- Moje, E. B., Dillon, D., & O'Brien, D. (2000). Reexamining the roles of learner, text, and context in secondary literacy. *The Journal of Educational Research*, 93(3), 165-180. <https://doi.org/10.1080/00220670009598705>
- Moje, E.B. (2008). Responsive literacy teaching in secondary school content areas. In M. W. Conley., J. R. Freidhoff., M. B. Sherry., & S. F. Turckey (Eds.), *Meeting the challenges of adolescent literacy: research we have, research we need* (58-87). New York: The Guilford Press.
- Nambi, R. (2011). An exploration of the implementation of the secondary school Literature in English curriculum in Uganda. Unpublished Master of Philosophy thesis. University of Cambridge, Cambridge, United Kingdom.
- Nambi, R. (2015). Exploring the challenges and possibilities of using learner-centred pedagogy to teach literacy in secondary education in Uganda: a case study. Unpublished Doctor of Philosophy thesis. University of Cambridge, Cambridge, United Kingdom.
- National Curriculum Development Centre (NCDC). (2008a). *Literature teaching syllabus: Uganda Certificate of Education, senior 1-4*. Kampala: NCDC.
- National Curriculum Development Centre (NCDC). (2008b). *The integrated English teaching syllabus: Uganda Certificate of Education, senior 1-4*. Kampala: NCDC.
- National Curriculum Development Centre (NCDC). (2013). Uganda Advanced Certificate of Education teaching syllabus for Art and Design, English Literature, Local Language, General Paper (Volume 6). Kampala: Government Printers.
- Ndawula, S., Kahumba, B.J., Mwebembezi, J., & Masagazi, J. Y. (2013). Getting schools ready for integration of pedagogical ICT: the experience of secondary schools in Uganda. Retrieved June 1, 2018, from <https://www.researchgate.net/publication/259178959>
- Ndawula, S. (2016). Information and communication technology in secondary schools of Uganda: Examining the trends and hurdles. Retrieved March 19, 2018, from <http://home.hiroshima-u.ac.jp/cice/wp-content/uploads/Seminar/HandOut/135>
- Ndawula, S., Ngobi, H. D., Namugenyi., & Nakawuki, C. R. (2012). A study of end-users' attitudes towards digital media approach: The experience of a public

- university in Uganda. *International Journal of Higher Education*, 1(2), 150-170.  
doi:10.5430/ijhe.v1n2p150
- Nystrand, M. (1997). *Opening dialogue: Understanding the dynamics of language and learning in the English classroom*. New York: Teachers College.
- Nystrand, M., Wu, L. L., Gamoran, A., Zeiser, S., & Long, D. A. (2003). Questions in time: investigating the structure and dynamics of unfolding classroom discourse'. *Discourse Processes*, 35(2), 135-198.  
[http://dx.doi.org/10.1207/S15326950DP3502\\_3](http://dx.doi.org/10.1207/S15326950DP3502_3)
- Omona, W., Weide, T. V. D., & Lubega, J. (2010). Using ICT to enhance knowledge management in higher education: A conceptual framework and research agenda. *International Journal of Education and Development using information and communication Technology*, 6(4), 83-101.
- Pahl, K., & Rowsell, J. (2012). *Literacy and education: understanding the new literacy studies in the classroom* (2nd ed.). London: Sage.
- Sanders, J., & Albers, P. (2010). Multimodal literacies: an introduction. In P. Albers, & J. Sanders. (Eds.), *Literacies, the arts & multimodalities* (pp. 1-24). Urbana, IL: National Council of Teachers of English.
- School of Education (SoE). (2009). *BA with education programme (BA/ED)*. Kampala: Makerere University Printery.
- Sebbowa, D., Ng'ambi, D., & Brown, C. (2014). Using wikis to teach history education to 21st century learners: A hermeneutic perspective. *Critical Studies in Teaching & Learning*, 2(2), 24-48. DOI: 10.14426/cristal.v2i2.34
- Tudge, J. (1998). Vygotsky, the zone of proximal development, and peer collaboration: implications for classroom practice. In L. C. Moll (Ed.), *Vygotsky and education: instructional implications and applications of sociohistorical psychology* (155-172). New York: Cambridge University Press.
- Turban, E., Rainer, R. K., & Potter, R. E. (2005). *Introduction to information technology*. New York: John Wiley & Sons, Inc.
- Uganda National Examination Board. (2017). UNEB examinations release report 2016. Kampala: Ministry of Education and Sports.
- Vygotsky, L. S. (1978). *Mind in society: the development of higher psychological processes*. Boston: Harvard University Press.
- Vygotsky, L. S. (1986). *Thought and language*. Cambridge, MA: MIT Press.
- Warschauer, M. (1996). Computer-assisted language learning: an introduction. In: S. Fotos (Ed.), *Multimedia Language Teaching* (pp. 3-20). Tokyo: Logos International.
- Warwick, P., Mercer, N., & Kershner, R. (2013). 'Wait, let's just think about this': Using the interactive whiteboard and talk rules to scaffold learning for co-regulation in collaborative science activities. *Learning, Culture and Social Interaction*, 2(1) 42-51.  
<https://doi.org/10.1016/j.lcsi.2012.12.004>
- Yandell, J. (2012). The social construction of meaning: reading *Animal Farm* in the classroom. *Literacy*, 47(1), 50-55. <https://doi.org/10.1111/j.1741-4369.2012.00676.x>

### **Declarations**

#### **Availability of data and material**

Not applicable

#### **Competing interests**

Not applicable

**Funding**

This paper was a result of a Post Graduate Diploma in Educational Technology at the University of Cape Town. The Carnegie Scholarship 2018-2019 funded the course.

**Authors' contributions**

The article was written and submitted by one author.

**Acknowledgements**

Not applicable

**Author's information**

Department of Humanities and Language Education, School of Education,  
Makerere University, Kampala, Uganda