Psychotherapy, (Il)Literacy, Information Communication and Technologies: Building Bridges to Literacy Excellence

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Abstract

This paper, using findings from a literacy intervention program, Early Grade Reading Instruction Curriculum (EGRIC), discusses theoretical probability and practical possibilities of psychotherapy and information and communication technology as a viable panacea for struggling readers. It emphasizes the importance of working on the psyche of a struggling reader to increase his/her sense of reading and future academic well-being if s/he has to make any real effort at improving his/her current reading abilities. If a reader is not motivated enough to value reading and to have a positive self-concept about reading, he/she will not make much attempt to read and sustain the reading habit. The paper highlights the essential ingredients of successful literacy intervention at the nexus of empowerment from a psychotherapeutic vantage point and incorporation of ICTs: Experiential relationship building with the client (dyslexic); dialogue and consensus building about the value of reading for the client; effective communication and formative feedback on the client's reading progress and consequent reading behavior change - driven by intrinsic motivation and reinforced further extrinsically through appropriate ICTs, rewards and recognition for progress made. Implications for better mental health and positive future outcomes and empowerment for struggling readers are made.

Keywords: Dyslexic(s), Literacy, Reading Motivation, Psychotherapy, Struggling Reader

Introduction

Dyslexia is a specific learning disability that is neurological [a difference in the brain] in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding [sounding words out] abilities. These difficulties typically result from a deficit in the phonological component of language [matching sound and letters] that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instructions. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge (International Dyslexia Association, 2002). Fifteen to twenty percent of the population has a language-based learning disability (LD) (International Dyslexia Association, 2002). That means about 3 million people in Kenya may have some form of LD. Of the students with specific learning disabilities receiving special education services, 70-80% have deficits in reading (International Dyslexia Association, 2002). That may mean also that about 2.4 million Kenyans may be dyslexic.

Dyslexia affects males and females nearly equally, and people from different ethnic and socio-economic backgrounds as well. Many people who are dyslexic are of average to above average intelligence.

Statement of the Problem

Reading is a skill. Learning to read is, however, a complex task (Cheung and Slavin, 2013). The National Reading Panel (National Institute of Child Health and Human Development, 2000) identified five elements that should be at the heart of any early reading approach: phonemic awareness, phonics, vocabulary, fluency and reading comprehension. All students need the five components of the reading skill, and successful readers are likely to develop them quite rapidly in the primary grades (Cheung and Slavin, 2013). For struggling readers however, the story is quite different. Different students may be failing to learn to read adequately for different reasons. One student may recognize every letter and sound but be slow and uncertain in blending them into words. Another may be proficient in reading words but does not comprehend them or the sentences in which they appear. Yet another may lack vocabulary needed to comprehend texts.

In general, struggling readers may have any of the following challenges singly or in combination with other challenges[1].A dyslexic may have trouble sounding out short or long words, learning to read (silently or aloud) and understanding what is read or written despite average intelligence and conventional teaching. They have trouble organizing and writing thoughts and ideas due, in part, to poor grammar and weak vocabulary. They also have poor handwriting, weak memory and possible difficulty with mathematics. They may have delayed spoken language in early childhood and their family members may experience similar problems. Additional diagnosis of Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity Disorder (ADHD) has been noted in some cases.

The lack of reading skills negatively impacts academic performance across subjects, retention, and repetition of grades, all of which have major implications for cost and for the achievement of Kenya's Vision 2030 goals (NASMLA, 2010; RTI, 2009; SACMEQ, 2011/2012; UWEZO 2011).Impact of dyslexia is different for each person and depends on the severity of the condition and the effectiveness of instruction or remediation being used. In general, there are likely to be challenges in word recognition, reading fluency, spelling, and writing. Later in life, such learners experience their most debilitating problems when more complex language skills are required, such as grammar, understanding textbook material, and writing essays. They may have problems with spoken language and find it difficult to express themselves clearly, or to fully comprehend what others mean when they speak. Such language problems are often difficult to recognize, but they can lead to major problems in school, in the workplace, and in relating to other people (Cheung and Slavin, 2013).

Beyond the classroom dyslexia can affect a person's self-image. One often ends up feeling "dumb" and less capable than they actually are. After experiencing a great deal of stress due to academic problems, a student may become discouraged about continuing in school. Cheung and Slavin (2013) and Lesnick, George, Smithgall and Gwynne (2010) state that students who cannot read well in the early grades tend to be at higher risk of performing poorly in later grades and other subjects, have emotional and behavioral problems and at a higher risk of dropping out of school. Internationally, concerted efforts have been made over the past 20 years among practitioners, researchers and policy makers to develop policy and identify effective interventions to help struggling readers succeed in reading (Cheung and Slavin, 2013). Approaches such as improved initial teaching of reading, one-on-one tutoring, small-group tutorials, comprehensive school reform and technology applications have been used for struggling readers in many schools. Among these approaches, educational technology applications have become one of the most popular (Cheung and Slavin, 2013, 2012; Kulik, 2003; Roblyer and Doering, 2013). Kenya has not been left behind in these efforts. Over the past five years or so literacy interventions have leveraged the use of technologies (including kindles, tablets and mobile phones) in their programs.

Challenges outlined above are associated with dyslexia if they are unexpected for the individual's age, educational level, or cognitive abilities. However, "Common Signs" are indicators, not proof of dyslexia. The only way to verify that an individual is truly dyslexic is through testing by a qualified examiner/s or diagnostician. An individual can have more than one learning or behavioral disability. In various studies as many as 50% of those diagnosed with a learning or reading difference have also been diagnosed with ADHD (Cheung and Slavin, 2013). Although disabilities may co-occur, one is not the cause of the other.

The government of Kenya has recognized the importance of technology to leapfrog the country's younger generation towards achieving Vision 2030 - meant to make Kenya a knowledge economy- by their one-laptop per Standard 1 child beginning January 2014. The cost of the technology notwithstanding, it seems important to know if technology does hold real promise. With more struggling readers being integrated into general classrooms and increasingly prevalent use of (and in Kenya's case urgent push for use of) educational technology in today's classrooms, it is important that teachers, schools and education sector players understand the effectiveness of various types of educational technology applications that are available to help improve reading skills of struggling readers, hence the present study. From the a foregoing discussions reading is, indeed, intimately related to affect and motivation. If a reader is not motivated enough to value reading and to have a positive self-concept about reading, they will not make much attempt to read and sustain the reading habit. As posited by Lesnick et al. (2010), such learners are at a higher risk of developing emotional and behavioral problems. This, combined with a possible low self-concept, can result in additional psychological problems over and above the reading challenge itself.

Rogers (2004) observes that people often know what is causing the psychological imbalance in their lives and that deep down they know what they need to do to regain their balance or self-actualization to become fully functioning persons. Rogers, based on his background as a psychotherapist, surmised that psychotherapy is a powerful change agent that assists individuals in making personal changes to regain balance and achieve their potential or self-actualization. Psychotherapy can facilitate a reintegration of the self-concept.

In spite of the observations made above, there is a dearth of research directly linking (il)literacy, psychotherapy and information and communication technology to determine the combined effect of both. Psychotherapy does offer promise based on its key tenets which involve experiential relationship building with the client (dyslexic); dialogue and consensus building with the client; effective communication and formative feedback on the client's progress and consequent behavior change. Could this approach be the much needed panacea to help struggling readers?

Purpose of the Study

The purpose of this research study was thus to explore the theoretical probability and practical possibilities of psychotherapy and information and communication technology as a viable panacea for struggling readers. Specifically, the paper emphasizes the importance of working on the psyche of a struggling reader to increase their sense of reading and, more importantly perhaps, future academic well-being if they have to make any real effort at improving their current reading abilities.

Research Question

The study was guided by the following central research question: What is the theoretical probability and practical possibilities of the combined use of psychotherapy and information and communication technology to provide intervention for struggling readers in Kenya?

Research Methodology

To answer the central research question, reference was made to aliteracy intervention program that was implemented at The University of Nairobi in the Department of Educational Communication and Technology dubbed: Early Grade Reading Instruction Curriculum (EGRIC). This program prepared pre-service teachers pursuing a Bachelor of Education Course in Early Childhood by equipping them with requisite reading instructional knowledge, skills, values and attitudes.

Specific reference is made to one of four courses the students had to take - a clinic-based course: Children with reading (and writing) Challenges. Each student was expected to identify a child struggling with reading or at risk of reading failure (using several reading assessment tools and interviews with teachers and parents) and work with the child for a semester (three months) to address their specific reading challenge. The student conducted baseline survey on the child and documented progress made over a three-month period. The Tutor (pre-service teacher) met the Tutee (our client the struggling reader) at least once a week for an hour-long interaction around a book carefully chosen and matched to the child's reading level. Each session ended with an assessment to determine progress made since the previous session. Overall, the EGRIC program was conducted using several approaches including narrative study, ethnographic observations, and design research.

Design research is "a form of interventionist research that creates and evaluates novel conditions for learning" (Schwartz, Chang & Martin, 2008, p. 47). Cobb and Gravemeijer (2008) suggest that design research is a family of methodological approaches in which instructional design and research are interdependent. Desirable and potential outcomes of design research include new possibilities for educational practice and new insights on the process of learning, thus design researchers study the learning that occurs in the designed settings (Shwartz et al. 2008; Cobb & Gravemeijer, 2008). "On the one hand, the design of learning environments serves as the context for research, and on the other hand, ongoing and retrospective analyses are conducted in order to inform the improvement of the design (Cobb & Gravemeijer, 2008, p. 68). This paper was written with design research approach as its guiding principle.

Findings and Discussion

This paper presents and discusses findings under two sub-headings: theoretical probability and practical possibilities of psychotherapy and information and communication technology on dyslexics. This research paper and, indeed the whole EGRIC program, is informed by the following three theories: Carl Roger's theory of personality; Abraham Maslow's hierarchy of needs theory and Lev Vygotsky's socio-cultural theory. We discuss each of these theories in turn. Carl Rogers' theory of personality notes that humans are born with a desire to be the best they can be and that self-actualization is the motivating force to achieving their full potential. Rogers posited that if an individual attained self-actualization, they would be a fully functioning person living "the good life." By this, he meant that the individual would have a positive healthy psychological outlook, trust their own feelings and have congruence in their lives between self and experience (Rogers, 2004).Rogers (2004) isolated several steps needed towards self-actualization. He used the term *real self* to explain what a person is capable of becoming if they lived in an ideal world or environment of unconditional positive regard. Their parents would have accepted and loved them just as they are. Such individuals would be psychologically healthy with a positive unconditional self-regard and the potential to attain self-actualization. Rogers discussed also the idea of *self-concept* which is a person's perception of themselves often shaped by how others see them. The self is the central construct in this theory. It is based largely on life experiences, social evaluation and the attitude of the individual's Significant Other(s). If the individual experiences conditional positive regard from their parents, the individual develops their parent's values and conditions of worth. If self-concept is based on the values of the Significant Other(s) this can give rise to incongruence between self and experience. This is because people may value others' opinion of themselves above their own. This affects their decision making and can result in them doing things to please others rather than satisfying their own needs. Conditions of worth reduce people's self-confidence, trust in their own feelings and can dwarf their potential towards self-actualisation (Rogers, 1986).

Rogers (2004) argued that the need for self-regard or approval is enormous. Children are influenced by their parents and strive for their approval by doing things to please them which make them feel more loved. However, if their behaviour does not meet with their approval they feel less loved. They may then experience incongruence between self and experience and this may lead to psychological maladjustment hindering personal growth towards self-actualization (Rogers as cited in Patterson, 1977).If the individual experiences unconditional love and does not develop conditions of worth there is congruence between self and experience. They develop positive regard. "To feel that one is understood is to feel that one has made some kind of a positive difference in the experience of another" (Rogers, 2004 p 343).In EGRIC program, we ensured our clients(the struggling readers) experienced feelings of empathy, understanding and unconditional positive regard from Significant Others (parents, teachers and their tutors (our pre-service teachers). We worked with learners towards being their *real self*. The experiential relationship we built with them reduced conditions of worth (in them) and encouraged unconditional positive regard for us and other people they interacted with. The clients actually did increase self-regard and re-established congruence between themselves and experiences related to reading and the struggles therein. In Maltby, Day and Macaskill's(2010) words, this was the process of reintegration.

Consistent with Carl Rogers, Abraham Maslow's hierarchy of needs theory lends credence to the importance of helping learners meet their needs if they are to self-actualize towards the *real self*. Apart from the deficiency needs (physiological and safety needs), Maslow discussed esteem needs which are more psychological in nature and closely linked with self-esteem, confidence in oneself, sense of achievement or the lack of as well as respect from and by others. As explained elsewhere, being dyslexic often erodes a learner's self-confidence and may reduce the respect such learners are accorded.

It was imperative that learners are helped to meet their self-esteem needs as a necessary pre-requisite to self-actualization. In line with Maslow's argument, EGRIC program worked at boosting children's self-esteem and confidence in themselves. Because the program was structured in such a way that there was incremental reading progress made with each tutoring session, it helped learners experience a sense of achievement each day.The clients were treated with respect and love. They were expected to reciprocate. Slowly but surely, the Tutor worked with the Tutee to help them to be the best they could be at that time – by for instance improving their reading speed or comprehending better than they did in the previous session. We encouraged parents and classroom teachers to continue working with the learners using similar approaches between sessions. What this means also is that if a child struggled to read, one could address their challenge by providing an audio-book for instance, to help them listen and by and by, build their confidence until they could read on their own. ICT-related affordances helped unlock the potential in dyslexics to develop a positive self-esteem and self-concept about reading. Vygotsky's socio-cultural theory emphasizes the importance of the social environment in learning. He singles out the role of the Significant Other operating within the Zone of Proximal Development (ZPD) to help a novice gain requisite knowledge, skills, values and attitudes. He posits that learners can perform more demanding tasks with guidance and encouragement from Significant (or Knowledgeable) Others. He calls this guidance scaffolding. Through scaffolding, learners who were unable to perform a certain reading task on their own for instance, could now undertake it until they achieved mastery. If the child needed to use technology, the Significant Other guided them until the learner was able to manipulate the appropriate technology on their own. Key tenets of Vygotsky's theory are linked with the setting of incremental goals and achieving them and then setting new ones. This ensures that key milestones are achieved at each step. Vygotsky's socio-cultural approach to learning has great potential in translating reading challenges into gains. We, the Significant Others (in EGRIC program, parents and teachers) collaboratively worked with our clients within their ZPDs to move them to the next level – self-actualization.

In sum tenets of the personality, hierarchy of needs and socio-cultural theories hold much promise for dyslexics because of their specific focus on personality and the need to validate an individual's capabilities or what they CAN DO. Collectively, they provide a viable roadmap on handling struggling readers' unique needs appropriately. The steps one could use include: Building an experiential relationship with the client (struggling reader); dialoguing and building consensus with the client about the value of reading; communicating and providing formative feedback on the client's reading progress; closely monitoring consequent reading behavior change to ensure they are driven by intrinsic motivation for sustainability; and provision of positive reinforcement extrinsically through ICT-related affordances, rewards and recognition to bolster learners' reading growth. Intervening for struggling readers is an imperative. That alone makes the proposals presented in this paper not only timely but urgent in implementing so that dyslexics benefit as soon as possible. Screening and diagnostic testing precede intervention. There exist assessment batteries and tools which can be used to diagnose struggling readers at different skill levels: Phonological Awareness; Letter-Sound Knowledge; Word Knowledge; Fluency in Reading; andReading Comprehension. An effective teacher must be aware also of their pupils' level of motivation to read. A learner's motivation to read can play a powerful role in their eventual success as readers and writers. Motivation to read has two important dimensions. One aspect is the learner's perception of the ***value of reading***. The other dimension is the leaner's ***self-concept*** or perception of himself or herself as a competent reader. Ideally, learners will both perceive literacy as important and that they are making good progress in developing as readers. Individuals must have a personal *intrinsic* motivation to read. Even the most enthusiastic teacher (or the most severe teacher) cannot provide enough *external* motivation to encourage individual learners to develop and sustain life-long habits of literacy.

There is a plethora of tools that assess motivation to read or the lack of. Bear in mind that motivation is tacit and can only be inferred from behavior. That means results from assessments must be triangulated with those from other assessments to have a better idea on the dyslexic's status. In the next section, we showcase some assessment tools for assessing motivation based on the focus of this paper. A composite score obtained from such assessments can be interpreted alongside those that inquire into struggling readers' levels of motivation for reading at two levels: their value of reading and their self-concept about reading. Also, they can be interpreted in terms of learners' response to reading.

Assessing Motivation to Read: Motivation Survey

The motivation survey showcased below can be administered individually or in groups.

Instructions
Complete the survey below independently. There are no correct or best answers, but feel free to complete it with your honest opinion and attitudes.
1. Reading at home is something I (often) (never) do. 2. People who read are usually (lazy, (smart). 3. Most people would say I'm pretty (bad) (good) reader. 4. I almost (always) (never) understand what I'm reading. 5. If someone gave me a book as a gift I would be very (angry) (happy). 6. Its (easy) (difficult) for me to figure out new words when I read them.

Scoring and Interpreting the Motivation Survey

In the motivation survey above, some of the statements refer to the *value of reading* and some to *self-concept.* Each pair of responses has one extremely negative choice and one extremely positive choice.

 Score a positive choice *(often, smart, good, always, happy, easy)* with five (5) points and a negative response *(never, lazy, bad, angry, difficult)* with one (1) point.

Total your responses. This represents your Total Motivation Score.
Total your scores for items 1, 2, and 5. This represents your perceptions of the Value of Reading.
Total your score for items 3, 4 and 6. This score represents your Self-Concept – how you view yourself as a reader.

Table1 can be used.

Items	**Sub-Scale**	**Respondent's Score**
Items 1, 2, 5	Value of Reading	
Items 3, 4, 6	Concept of Self as a Reader	
		TOTAL MOTIVATION SCORE:_____

Assessing Motivation to Read: Open-Ended Interviews

Teachers can interview pupils to learn about their motivation to read. Interview questions are written out and read aloud to the learner. The learner responds orally. Interviews are designed to allow learners to express their opinions and attitudes in their words. So, interview questions for this purpose must be open-ended (that is, they cannot be answered by 'yes' or 'no'). Examples of open-ended questions include:

Why do you think people read?
How do you feel when you are called on to read in front of the class?
Who is a good reader that you know? Why do you think that person is a good reader?

Assessing Motivation to Read: Happy Face, Sad Face

Pupils who are just beginning to read and write may lack sufficient writing skills to respond to surveys. Teachers construct statements that can be answered with a smiling face (positive response) or a sad face (negative response.) For example, the teacher might say,

"Show me what your face would look like if I read a story aloud to you?"
"Show me what your face would look like if someone gave you a book as a gift?"

Using Assessment to Inform Reading Intervention

Being the Role Model

Effective teachers can play an important role in modeling a positive value for reading by sharing their own honest attitudes.
Teachers must share the notion that reading is not simply a school task; it is valuable in itself and a rewarding communication art.

Effective teachers explain why *they* read, what *they* enjoy about different stories or authors, how *they* feel when they read a letter, poem, or story on their own. Effective teachers also provide parents with information about how to model positive values for literacy in the home.

Teachers enhance learners' motivation to read by making reading and writing *positive*, *important*, and *pleasurable* activities. They select good literature to read aloud to learners. They create special times for writing and reading in the class. They organize areas of the room to display pupil writing, and they create spaces and opportunities for learners to read for pleasure. They also contribute to pupils' motivation to read when they provide pupils with feedback on their progress as readers and writers. Note that EGRIC program pre-service teachers were equipped with skill to assess motivation and also to be good role models of reading.

Guiding Response to Reading

How pupils respond to reading is closely related to motivation, and it is important to think about how response opportunities can impact motivation. We sometimes read to obtain information from text (as in reading a recipe or a set of directions to be carried out) and other times we read for "the sake of reading" primarily for the enjoyment of the experience. With both kinds of response, connections are often made. Three kinds of connections are frequently listed:

Text-To-Self Connections (when a reader relates something that is read to a personal experience that helps him/her to better understand the meaning of the text.) For example, "reading about this kind of snake reminds me of the conversation I had with my grandfather about snakes' venom."

Text-To-Text Connections (when a reader relates something in a text to a related idea, event or content from another text) For example, "This description of snake venom does not exactly match what I read last week in the newspaper about snake bites."

Text-To-World Connection (when a reader relates what is read to a broader idea or concept) For example: "This part about snake venom makes me think about the whole idea of how animals have to adapt to their environment to protect themselves."

Connections are certainly not the only kind of response that pupils make to reading, however, so it is important to broaden the types of responses beyond those listed above. These response opportunities can take place before, during and after reading, and, for example, might include experiences such as the following.

Before Reading

➢ Predicting what might happen, or what might be learned.
➢ Discussing what the title could mean.
➢ Skimming the text and posing questions that the reader thinks will be answered.
➢ Discussing or writing what they already know about the topic and how it might connect with the text to be read.

During Reading

➢ Noting or marking places that the reader wants to talk about after reading.
➢ Making predictions based on what has been read so far.
➢ Finding evidence of a character's trait or quality.
➢ Making a judgment, forming an opinion, and noticing evidence for it.
➢ Finding parts that were surprising, or particularly interesting or important.
➢ Noticing parts that are confusing.
➢ Noticing connections made.

After Reading

➢ Discussing or writing about what you liked (or did not like)about the piece and why.
➢ Noticing the way an author used language to make his/her point.
➢ Responding to questions.
➢ Discussing or writing a reaction to the piece (open-ended)
➢ Writing a different ending.
➢ Writing a letter to the author.

Again, the kinds of experiences and opportunities that we provide for pupils for response can definitely affect their motivation, so it is important to think about them as we assess pupils' motivation to read.Note that EGRIC program pre-service teachers were equipped also will skills to guide readers in responding to texts they read with learners.

ICT Interventions

In the increasingly technological world it is being recognised that emerging and appropriate technologies could be the way forward for improving the quality of education delivery and outcomes, especially in disadvantaged, often remote and rural contexts in low-income developing countries (Cheung and Slavin, 2013; Roblyer and Doering, 2013; Stetter and Hughes, 2010). Alternative approaches include school-based continuing professional development that focus on the realities in the classrooms and utilize technology such as print, audio and pre-recorded video (Daniel, 2010; Moon, 2007). Information and communication technologies can have much to offer to those who have particular difficulties in reading which are not apparent in other areas of their abilities. All the technology needed is potentially there. In fact the range of technological solutions is vast. Both hardware and software can cater for most needs, but they do need to be in place and easy to implement. Now there is dyslexia software to make this possible; both by providing support for reading and giving opportunities for reinforcing and practising skills. For this to be effective, the learning activities have to be structured. In the section below, we discuss how we, in the EGRIC program, used the computer and other ICTs (including the Internet) for different reading activities tailored to dyslexics immediate needs in any of the five components of reading: phonemic awareness; phonic, word knowledge, fluency and reading comprehension.

Structured Learning Activities to Support for Phonemic Awareness, Phonics, Word Knowledge, Fluency and Reading Comprehension

Dyslexic children had access to a talking word-processor and /or screen reader which had difficult content read out to them. This was especially significant in different subject areas where there was specific technical content /vocabulary. Children also highlighted text on the screen, difficult individual words, phrases, even whole paragraphs and had them read aloud to them. Seeing and hearing text, plus visual support from graphics, made content more accessible and easier to understand. This, in turn, helped them to work more on their own and as they got a better chance of understanding the material, there was more likely to be focused work and less need to misbehave or cause disruption in lessons.The computer was an excellent way of providing word finding and spelling activities. With the use of pictures and the addition of high quality speech, the learner was provided with a multi-sensory approach. The programs chosen, including **Starspell** and **WordShark 4**, had all been carefully designed to allow the teacher to select suitable activities for the individual child.

Careful choice of colors was made too. This was because black text on bright white paper can be very hard to read for many dyslexics (and other 'normal' learners with some level of scotopic sensitivity). Providing cream, buff or pastel coloured paper for worksheets and printouts improved learning environment for all children and facilitated greater independence through reading. Sections of textbooks were scanned into a computer and converted to text-to-speech files that were 'read' on digital recorders, e-books or by a classmate. Using headphones allowed the child not only to follow the text but also listen to it without disrupting other learners. Read On (www.inclusive.co.uk) is an easy tool to use to prepare text before having the child read it. Texts, including those written by the dyslexics themselves and teachers, were loaded onto kindles and re-visited by children at their own leisure. Fluency was improved through talking books; talking textbooks; talking worksheets; and talking web pages. The materials provided models on how to read accurately at an appropriate rate and with prosody.

Often the dyslexic child's reading skills are patchy. If there are too many unrecognizable words, they lose the thread of the text they are reading and lose confidence and interest in the activity. ICTs used in EGRIC motivated learners by lifting the burden of decoding off the child and enabling them to focus on comprehension.

Improving Writing Skills of Dyslexics using Word Processors and Interactive White Boards

Dylexics who have challenges in writing had access to regular editing/re-editing on EGRIC laptops. Using ICTs helped them bypass handwriting problems. In addition they got speech feedback whilst writing. They had access to talking on-screen word-banks, spell-checking facility and dictionary and thesaurus to extend language and vocabulary.

Though it has limitation, auto-correction tools were helpful. These included those that: Changed the screen and text **colours;** customized **spelling** and **grammar support;** and put difficult words or long phrases into **Autocomplete.** Other software allowed the teacher to **highlight errors** in color and add **comments.** These included **track changes.** Teachers added commonly mis-spelt words to Autocorrect. Dyslexics usually have good ideas (lateral thinkers), but are poor at organizing them on paper. It helped when we encouraged them to use mind-maps or record their ideas or work in a group with a non-dyslexic scribe.

We used the interactive white board (IAB) to help dyslexic students because: of the strong visual element to a lesson and the fact that it encourages interaction of the whole class. In addition, notes can be downloaded to a child's computer or printed. Homework details can be accessed as file or digital image. The IAB stimulated teachers to produce interactive lessons, with graphic, videos and sounds. This stimulated dyslexic's learning style and encouraged oral interaction. Depending on how the lesson was set up, the dyslexic student was able to access the data or revisit information, as needed. Dyslexics also benefited from digital tools such as players and cameras. Digital recorders were used for: recording initial ideas; recording notes when reading an information book; recording homework details; (with permission) recording the teacher's input to a lesson; and recording planning of group work. Digital cameras were used to: record diagrams from the chalkboard or book; record practical activities in science and other subjects.

Customizing ICTs for Individual Children

Dyslexics at EGRIC benefited from a personal laptop/notebook set up with personal on-screen display preferences to support their individual needs. They included on screen reader/talking word processor and appropriate software; speech recognition (for older students), page, font, size and text color which was also customized as a template for an individual child. The chosen text color would print out, but colored paper is often used for printing. Most children found cream or buff paper acceptable and better than white.

ICT Support

The devil is in the detail. We ensured learners and their supporting teachers; duty bearers and careers knew how to use ICTs and how to manage its use. A short spurt of initial intensive training paid off in the long run. Just giving a laptop with no training and no support, is asking for it to be left in the cupboard! EGRIC program thus laid great emphasis on teacher capacity building to improve their IT skills and build their confidence in using technology with learners. When dyslexic students were using laptops, it was essential that they were robust and with a good battery life as it is not always easy to work near a mains plug. One solution we had was to have a second battery. There was need to have a contingency plan if the machine had to spend some time being repaired if it had become the 'normal way of working.' Overall, EGRIC laptops were networked near power outlets in case they needed to be plugged in.

Benefits of ICT for Dyslexics

ICTs provided multisensory feedback to dyslexics. The text-to-speech facility provided by a talking word processor or screen reader, especially when also supported by visuals or animated actions, allowed poor readers to access information. ICTs were helpful for developing strategies to provide individual support tools such as talking worksheets or textbook pages via a talking word processor, a recorder, camera etc and provide the dyslexic alternative means of accessing and recording work (Chueng and Slavin, 2013).ICTs facilitated a more independent way of working. The child could hear written text and re-visit it as frequently as needed, they began to work alone, without constantly needing a teacher or carer (Lever-Duffy and McDonald, 2008).

ICTs motivated dyslexics (Kamil, Intractor and Kim, 2000; Leu, 2000) and raised their confidence, self-esteem and improved their attitude and behaviour. A lot of disruption in class is caused when a child cannot read intended work or write down their own ideas leads to calling out / acting the clown for attention (known ploys to mask low self-esteem). Once these children felt they could do some work and had a positive contribution to make, behavior tended to improve. This, in turn, built the struggling reader' perceived (intrinsic) value of reading. It enhanced their willingness to persevere in becoming literate. It created, in them, habits and familiarity with books therefore a culture of reading developed in them. It developed in them a liking of literature where there were opportunities for choice. Text- and ICT-rich classroom environments motivated reading as they reflected the value of reading as important.

7. Implications of the Study

Implications for better mental health and positive future outcomes and empowerment for struggling readers are made. Psychotherapy should be used first on a pilot basis before scale-up to larger populations of struggling readers. Lessons learned can then be used to modify reading intervention procedures. Sample tools for reading assessment showcased in this research paper can be modified to suit different groups of struggling readers. Significant others must provide dyslexics unconditional positive regard with little criticism by any and all around them.

This calls for teachers to use positive language and to focus more on what learners CAN DO not their limitations and to validate and celebrate those. That means also eliminating derogatory terms used to learners with reading challenges. What that means also is that the school environment and the academic experiences learners go through must be pleasurable and uplifting to learners and be as close as possible to the ideal classroom. Ideally, classrooms should be psychological safety nets for learners where their funds of knowledge are valued and included in the teaching and learning process.

8. Recommendations of the Study

Have an advocacy arm to the intervention to share with others on effective ways of providing unconditional positive regard to dyslexics by accepting such learners just as they are if they are to develop a positive unconditional self-regard as they work towards the best they can be, the *real self,* in their reading and academic achievement.

- Teachers and Significant Others to eliminate negative comments about dyslexics and to desist from using derogatory labels to refer to such learners so that they boost the learners' self-concepts. They must strive to love ALL learners unconditionally even as they acknowledge that this is easier said than done. Simply put, there must be empathy, understanding and unconditional positive regard from a significant other(s).
- Provide a stimulating multisensory learning environment that caters for different learning styles and provides for ALL learners.
- Have dyslexia-friendly schools which assess and review individual needs of each dyslexic pupil, so that suitable support is provided and its needs regularly reviewed, so that it stays appropriate.
- ALL staff must be aware of needs of dyslexics and strategies for supporting them, so they can build on the support, not 'fight' it.
- Both ICT hardware and software need to be in place and easy to implement.
- Learners must have technological knowhow. Efficient keyboarding should be seen as an essential life skill for all pupils.
- The child's expertise in using ICT should be recognized and praised, which will improve confidence and self esteem.
- Institutions should foster ethos that intervening for dyslexics is ok. If it is to work, it should be seen as essential for the particular child, as glasses or a hearing aid are for sensory support. Any teasing or bullying by other children or teachers should be nipped in the bud.

Focused in-house training and support should be given to support teachers, duty bearers and carers so that they know how to use it and how to manage its use. A short spurt of initial intensive training pays off in the long run. New teachers can be guided on how to adapt their classrooms for the technology. Many new teachers enjoy the responsibility of being the technical guru and it pays to invest some time and effort in training them to fulfill this role. Things do go wrong with technology, so it is essential the child knows where to go to get help.

9. Conclusion

The combined use of psychotherapy and information and communication technologies seems to have potential for intervening for struggling readers. This research paper, using examples from EGRIC program, has highlighted the essential ingredients of what a successful literacy intervention and empowerment can look like from a psychotherapeutic vantage point: Building an experiential relationship with the client (dyslexic); dialogue and consensus building about the value of reading for the client; effective communication and formative feedback on the client's reading progress and consequent reading behavior change-driven by intrinsic motivation and reinforced further extrinsically through leveraging the use of ICTs as incentives. Rewards and recognition of dyslexics. This

may include dyslexia-friendly worksheets; using a word processor; their own choice screen displays; planning with mind-maps; technical wordlists before a new topic and a printout of homework details. Carl Rogers' theory of personality provides us the justification that **ALL** individuals, including dyslexics, should become fully functioning persons who are psychologically healthy, open to new experiences and aware of their own feelings and those of others. They must live in the now, fully immersed in their experience and not restricted by conditions of worth or self-concepts. They must not be afraid to make decisions based on their own experiences, and they trust their own feelings of doing what is right and accept the consequences. They must accept that life changes and they welcome the opportunity to use their creativity in adapting to the new changes. If it's right for the dyslexic student, it's right for all students! With proper screening, diagnosis, appropriate instruction, hard work and support from family, teachers, friends, and Significant Others, individuals who are dyslexic can, and often do, succeed in school and later as working adults.

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