A Case Study of the *Takalani Sesame* Program in South Africa

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Introduction

The impact of Takalani Sesame and its Muppet characters on the education of South African children stands as a prime example for the application of the 21st century competency framework. This South African adaptation of Sesame Street not only broadcasts educational material for literacy and numeracy, but also provides content that addresses intra- and interpersonal competencies important for South African children to learn. The program is built by a team of early childhood education experts from South Africa, in order to fit the unique country context (UNAIDS, 2005). For instance, Takalani reflects the multilingual society of South Africa by airing its programs in nine of the 11 recognized mother tongues (Coertze, 2011). Takalani is also known for the character Kami, an HIV-positive Muppet. She has been widely recognized for her role in addressing the HIV/AIDS epidemic by teaching resilience, empathy, and affection, while humanizing people living with the disease (UNAIDS, 2005).

The paper is structured as follows. First, Pellegrino and Hiltons’ conception of 21st century competencies will provide the theoretical background and definitions necessary for discussion. The second section will provide a brief history of the Sesame Workshop and Takalani Sesame with particular attention to the process of contextualization and inter-organizational cooperation. The next section will present the impacts of Takalani Sesame while highlighting the factors contributing to and constraining its success. The impact of various mediums and program activities will be described, particularly as these items relate to the development of 21st century skills. Finally, this paper will describe research and evaluation processes already utilized by Takalani Sesame, and propose a monitoring and evaluation framework to evaluate the program’s effects on behavior change.
21st Century Skills Framework

Education has long been recognized as a key component for national prosperity and the promotion of stable societies. Truly, public education is one of the hallmarks and fundamental building blocks of the modern nation-state. Its function is not limited to providing individuals with the skills and knowledge necessary to actively participate in the labor force and civic society, but in its ideal form, public education imparts the practices and values necessary for individuals to effectively meet new challenges. We assume the universal applicability of this ideal-type. More recently, the critical importance of education is again being affirmed as more businesses and political leaders identify the need to teach our students 21st century skills. These are the skills, such as communication, critical thinking, and collaboration, which are increasingly being recognized as necessities for today’s students to effectively tackle the challenges of today and the future.

However, the phrase ‘21st century skills’ seems to have equally as many definitions as it has cheerleaders. To clear the theoretical space for the sake of substantive dialogue regarding the application of these skills, James Pellegrino and Margaret Hilton have developed an inclusive framework to classify and operationalize the constituent parts of what they call “21st century competencies” (Pellegrino & Hilton, 2012, p.23).

Pellegrino and Hilton use the OECD definition of ‘competency.’ Rather than being limited to knowledge and skills, ‘competency’ deals with the “ability to meet complex demands, by drawing on and mobilizing psychosocial resources in a particular context” (OECD, 2005, p.4). Pellegrino and Hilton then approach 21st century competencies with the view that it refers to “knowledge that can be transferred or applied in new situations” (Pellegrino & Hilton, 2012, p. 23). This knowledge includes both content knowledge in a particular domain, as well as the
procedural knowledge of “how, why, and when” to utilize content knowledge (Pellegrino & Hilton, 2014, p. 23).

Then what are the skills and knowledge that constitute Pellegrino and Hilton’s conception of 21st century competencies? They break their framework down into three domains of competencies: cognitive, intra-personal, and inter-personal. The cognitive domain involves thinking and “other related abilities, such as reasoning, problem solving, and memory” (Pellegrino & Hilton, 2014, p. 21). The intra-personal domain involves emotions and feeling, as well as the ability to personally set and achieve goals. Finally, the inter-personal domain deals with how to express information to others, how to interpret information received from others, and how to respond appropriately. These three competency domains are made up of subordinate clusters. Through content analysis of several lists of 21st century skills, Pellegrino and Hilton aligned the different proposed skills into the taxonomies of the three competencies. [See taxonomy of 21st century competencies in the appendix].

Pellegrino & Hilton’s conception of 21st century competencies has important implications for education and instruction because their framework assumes that the three competency domains are interlinked and malleable. For instance, how well an individual performs in a test is not solely influenced by that individual’s cognitive abilities (e.g. critical thinking, problem solving, content knowledge), but also by their intra-personal competencies (e.g. grit, responsibility, intellectual interest). Furthermore, while cognitive abilities and personality traits have been traditionally believed to be static, more recent research has shown that they are “subject to change in response to life experience, education, and interventions” (Pellegrino & Hilton, 2013, p. 23). Their paper cites an intervention by Yaeger and Walton (2010) designed to increase a learner’s motivation, which found that those who find intelligence to be changeable by
effort were more likely to put in effort towards studying (Pellegrino & Hilton, 2012). If, therefore, an individual’s cognitive abilities and personality traits are malleable, then 21st century competencies provide an actionable framework through which education – including informal education – can provide students with the knowledge and skills necessary to confront the challenges of today and the future.

While the concept for 21st century competencies is vulnerable to criticism that it is irrelevant in contexts where there is a problem with basic academic achievement and fundamental deficiencies in resources for education, we hypothesize that this is primarily due to the manner in which the issue is presented. Pellegrino & Hilton’s work, like others, frames the urgency and utility of teaching 21st century skills in terms of 21st century challenges in economy, society, and the labor force - challenges whose relevance varies depending on the context of economic development. It is therefore comprehensible that one would find little relevance in an argument couched in terms of the technology labor force, if the most pressing concern of a given context is attendance and basic literacy. However, as we initially framed the importance of education, we find that the utility and urgency of teaching 21st century skills is not limited to industrialized nations. On the contrary, competencies such as problem solving, goal setting, empathy, trust, and cooperation are all skills critical in any society and nation, regardless of economic development. The following examines the Sesame Workshop and Takalani Sesame as a case study of an organization and program that has successfully addressed this critical need in the context of South Africa.
History and Characteristics of *Takalani Sesame*

**History of the Sesame Workshop**

The Sesame Workshop was founded in the United States in 1969 to give disadvantaged children the same opportunities as middle-class children. Today the *Sesame Street* television program is popular with children and families from all walks of life, but still has the same commitment to addressing the needs of children through the combination of media and its unique and relatable Muppet characters. The mission of Sesame Workshop is to use the educational power of media to help all children reach their highest potential, and its programs make an impact, particularly in vulnerable communities. Sesame Workshop has become a leading expert in children’s programming across various media. Since launching on television, programming has expanded to multimedia models which include mediums such as radio, books, videos, and the latest in interactive media and technology (Sesame Workshop, n.d.).

Sesame Workshop programming is broadcast to millions of children worldwide in more than 150 countries, including in some of the poorest regions (Mares & Pan, 2013). Some countries air U.S. productions of *Sesame Street* dubbed in the local language, but many unique versions of Sesame Workshop programming have been created for specific country contexts. Such programming has been co-produced with companies in the host country (Mares & Pan, 2013). When programming is planned for a new location, Sesame Workshop will partner with broadcasters, governments, non-governmental organizations, and private sector corporations who share their goal of making a meaningful difference in children’s lives (Sesame Workshop, 2012). New local programs are created with Sesame Workshop’s essential ingredients: Muppets, media, and their research-intensive process (Sesame Workshop, n.d.). While co-productions in other countries are based on the original U.S. template, they are tailored in style and content to suit
local conditions. In 2011, the Sesame Workshop had 39 different international co-productions (Mares & Pan, 2013).

Across all programming, Sesame Workshop has an immediately identifiable style and targets the same pre-primary age groups. There are core learning goals identified across programming for that age group (Mares & Pan, 2013). Many Sesame projects have generalized curricula that cover objectives including cognitive skills (such as math, problem solving, and literacy), social skills (social interaction with others and learning about the family), and affective skills (such as pride in oneself, appreciating differences, and valuing commonalities) (Cole, 2009). The core curricula of Sesame Workshop programming notably aligns with the 21st century skills outlined by Pellegrino and Hilton. What the Sesame Workshop refers to as ‘social skills’ aligns with Pellegrino and Hilton’s inter-personal competencies, while ‘affective skills’ aligns with intra-personal competencies.

In addition to the core goals represented in Sesame programming, education goals specific to a country’s context are developed by early childhood specialists from that country in conjunction with the local production team. Production sets and Muppets are created specifically for that program, as vehicles to reach learning targets (Mares & Pan, 2013). Because Sesame curricula are adapted for the specific country context, one production may focus more on cognitive skills, while another focuses more on social skills (Cole, 2009). This flexibility enables Sesame programming to place more focus on the 21st century skills that will be of the greatest benefit to children in a given context. In this way, programming created for young children can prepare them for school life, as well as for the various roles they will be expected to fill throughout their lives.
History of *Takalani Sesame*

The Sesame Workshop began broadcasting in South Africa in 1996, when the U.S. *Sesame Street* programming was dubbed into several local languages (UNAIDS, 2005). There was a positive impact from U.S. programming, and the South African Department of Education (DoE) was eager to have programs created and produced locally (UNAIDS, 2005). In 1997, Sesame Workshop received a USAID grant to develop a new version of the program. Negotiations and planning began between the DoE, Sesame, and USAID for the production of *Takalani Sesame*. Programming designed specifically for South Africa has been reaching children since 2000, when *Takalani Sesame* launched on television (UNAIDS, 2005).

From its inception, programming has been developed through a partnership between the South African Broadcasting Corporation (SABC Ltd), the DoE, and the Sesame Workshop (Sesame Workshop, 2005a). *Takalani Sesame*’s production team works out of SABC headquarters in Johannesburg and acts as liaison between partners, as well as overseeing the production process. At the time of inception, *Takalani Sesame* was unique among Sesame Workshop programs in having the DoE as a partner; typical partnerships in a new context would simply include a corporation and local broadcaster (UNAIDS, 2005). Programming was initially funded by USAID, but is currently being funded by the corporation Sanlam (Sesame Workshop, 2012).

*Takalani Sesame* provides educational messages on literacy, numeracy, and life skills through radio, television, and outreach initiatives (Sesame Workshop, 2005a). The target audience is pre-school children ages three to seven and their caregivers (UNAIDS, 2005). The programming supports South Africa’s first year curriculum by providing critical skills for early childhood development (Cole, 2009). Research focusing on literacy, mathematics, and social and
emotional health has shown that children’s exposure to programming is associated with gains in knowledge and changes in attitude (Sesame Workshop, 2012). Through various mechanisms and content areas, Takalani Sesame builds 21st century skills that are critical to success in school and society. These will be explored in detail in the following sections, which highlight the nature of programming and overall impact that Takalani Sesame has achieved in South Africa.

Unique Characteristics of Takalani Sesame

Takalani Sesame programming is targeted especially at children disadvantaged by the persisting effects of apartheid; those without access to other early childhood development services (UNAIDS, 2005). The Takalani Sesame production team is committed to fighting the AIDS epidemic, helping vulnerable children, and serving the specific needs of South African families with age- and context-appropriate content (Sesame Workshop, 2012). The programs of Takalani Sesame align with the cognitive, intra- and inter-personal competencies of the 21st century skills framework by enabling young children to excel within a context of post-apartheid inequality, and in the reality of the AIDS epidemic.

Takalani Sesame has adapted programming to the local context through the creation of new characters. Moishe is a Muppet who is tall like Big Bird of the U.S. programming, but is modeled on the meerkat, an animal indigenous to South Africa. Moishe lives in a marketplace that is the South African equivalent of the urban neighborhood in the U.S. production (Cole, 2009). The creation of characters with familiar characteristics, and living in familiar environments, provides Takalani Sesame viewers with relevant models of prosocial attitudes and behaviors.

Kami is an HIV-positive character, developed by Takalani Sesame as a vehicle for HIV/AIDS curriculum. As a five-year-old orphaned Muppet whose mother has recently died, she
discusses her feelings and models coping mechanisms (Sesame Workshop, 2005b). Kami is emotionally and intellectually intelligent. She is affectionate and has empathy for others. She has high self-esteem and is very resilient, due in part to having had a very loving and caring mother (UNAIDS, 2005). Kader Asmal, South Africa’s former Minister of Education, was present when Kami made her public debut at a hospital. He described the need for HIV/AIDS education in South Africa, which was embodied in the Muppet: “Education is the only socially acceptable vaccine available to our people and represents our only hope to save our nation. We can’t continue to have HIV-positive children isolated, demonized, victimized. We want to make sure all our children are comfortable” (UNAIDS, 2005, p. 38).

**Impact of Programming**

Mares & Pan (2013) conducted a meta-analysis of Sesame Workshop programs across 15 countries, which found significant positive effects of exposure to the program, aggregated across learning outcomes. These effects were observed in both low- and high-income countries. The analysis found that children who watched more performed better than those who watched less. Watching Sesame Street was associated with positive learning outcomes within three distinct categories (Mares & Pan, 2013): cognitive outcomes (including literacy and numeracy; recognizing letters and numbers), learning about the world (including health and safety knowledge such as hand washing, wearing a bike helmet), and prosocial reasoning and attitudes toward out-groups (including those associated with long-standing hostilities or stereotypes).

**Impact of Takalani Sesame**

Exposure to components of *Takalani Sesame*, including radio, television, and outreach, has been associated with changes in attitudes and knowledge. Studies of the first and second seasons of the program demonstrate that children between ages three and six experienced
significant gains in the area of life skills. Life skills included knowledge and attitudes regarding HIV/AIDS, nutrition, and safety and security (Coertze, 2011). Children under five years of age demonstrated some improvement in the areas of literacy and numeracy. Positive learning outcomes were found for consumers of both television and radio programming (Sesame Workshop, 2005a). The development of television and radio programming for Takalani Sesame, and the respective impact of each type of medium, is described below.

**Television**

Television was the first media format developed by Sesame Workshop in South Africa. *Takalani Sesame* television programming consists of 30-minute shows, broadcast daily on two SABC channels (UNAIDS, 2005). Research on the impact of *Takalani Sesame* programming revealed gains in the areas of literacy, numeracy, and life skills. Watching television programming was found to result in better literacy and numeracy outcomes when the experience was mediated, meaning that parents or educators were present to facilitate children’s learning (see Figure 1). Mediation during television programming had the opposite effect on knowledge of life skills, resulting in a lower percentage point increase than the unmediated group. Children without mediation experienced an average 40% increase in life skills knowledge between a pre- and post-test, while those with mediation experienced only a 21% increase. Treated groups outperformed control groups in all cases but one; in numeracy content the control group outperformed children who watched TV without mediation (Sesame Workshop, 2005a).
Figure 1. Percentage Point Gains in Average Scores from Pre- to Post-test in Literacy, Numeracy, and Life Skills for Experimental and Control Groups (Sesame Workshop, 2005a).

This study indicates the potential for Takalani Sesame television programming to build skills in the areas of numeracy, literacy, and life skills. Literacy and numeracy are an important piece of the cognitive skill set, and are instrumental in developing deeper cognitive skills that will contribute to a child’s development over time. Takalani Sesame programming builds life skills in content areas that are not only relevant to the South African context, but also encourage the development of 21st century skills. Figure 2 demonstrates the gains that consumers of Takalani Sesame programming experience in various content areas. Consumers of Takalani Sesame experience growth in the areas of memory, evaluation, and analysis, which are also important cognitive skills. Children experienced a thirty-two-percentage point gain in the content area of ‘attitudes’ (Sesame Workshop, 2005a). This may suggest the capability of Takalani Sesame to influence children’s attitudes toward others, a first step in laying the groundwork for building inter-personal skills.
Radio

Sesame Workshop is increasingly looking at ways to deliver programming through more traditional technologies, which have greater capability of reaching children with the highest need (Cole, 2009). Many projects around the world target vulnerable and disenfranchised children, and technology such as televisions and computers are precluded from use because they live in situations without access to electricity and other resources (Cole, 2009). In South Africa, 30% of homes still do not have television, a fact that influenced the decision to launch radio programming in this context (UNAIDS, 2005).

The Takalani Sesame team pushed the boundaries of the U.S. program model by pioneering the use of radio for Sesame programming. Radio programming consists of 12-minute programs that are broadcast three times a week in four different language versions. Based on
research that shows the value of repetition, programs are repeated twice a month, 6 times a year (UNAIDS, 2005). Radio programming continues to provide an effective way to access communities not serviced by access to television (Cole, 2009).

Listening to radio programming was found to result in outcomes in the area of life skills for both the group mediated by a parent or educator, and the unmediated group (see Figure 1). While children who listened to radio programming experienced improved numeracy scores, they did not experience as significant an increase as the control group (Sesame Workshop, 2005a). This suggests severe limits to the potential of radio programming to build numeracy skills, especially when compared to TV programming. In literacy, mediated groups showed more improvement than the control group, while unmediated groups experienced less improvement in test scores (Sesame Workshop, 2005a). Despite the limitations of radio programming, it shows clear potential facilitating the development of 21st century skills for children living in low-income communities. These twenty-first century skills are built through the demonstrated capability of radio programming in developing literacy and life skills.

**Activities and Evidence of Impact**

**Child/Caregiver Relationship-Building Activities**

Young children rely on their parents or caregivers as they form their sense of self, which is developed through modulation of emotion, formation and socialization of interpersonal relationships, and learning from exploration of the environment. Young children’s cognitive development is closely tied to their social and emotional functioning, and these processes are disrupted when children are exposed to traumatic or stressful situations (Lieberman & Van Horn, 2004). Due to the intricate relationship between these three domains, traumatic experiences that
affect a child’s social and emotional wellbeing could also potentially affect their cognitive
development and school readiness. A child’s caregiver is the most readily available resource to
promote emotional and social growth from a young age. A child’s relationship with the caregiver
has great potential to lay the groundwork for development of the twenty-first century skills
described by Pellegrino and Hilton.

The study described in the above sections on the impact of radio and television
programming evaluated the impact of a caregiver mediating *Takalani Sesame* radio and
television programming, and found that mediation was effective in developing most skill areas.
Mediation was most effective at building numeracy skills with television, and in building literacy
and life skills with radio (Sesame Workshop, 2005b). These findings indicate the effectiveness of
child-caregiver interaction as a supplement to viewing or listening to *Takalani Sesame*
programming, and in developing various skill areas.

Although *Takalani Sesame* programming targets young children, importance is placed on
family relationships and support throughout all media types and content areas. The whole-family
approach is evident in the “*Talk to Me*” television segments, a component that encourages
caregivers to discuss HIV/AIDS with young children in an age-appropriate way. The study on
mediation described above also found that caregivers exposed to “*Talk to Me*” programming
were more than two times as likely to talk with children in their households about HIV, even
after accounting for socio-demographic factors that could have influenced the effects of the
intervention (Sesame Workshop, 2005b). This finding suggests the potential of *Takalani Sesame*
programming to influence the interactions caregivers have with their children, particularly in
talking about difficult topics.
The Takalani Sesame website provides resources for both children and grown-ups. Materials produced by Sesame Workshop and made available online include publications for helping families to cope with grief, learning at home, and playing safe (Takalani Sesame, n.d.). These resources supplement Takalani Sesame’s radio and television programming, and emphasize the important role of a child’s caregiver in providing support during the early years of development. These resources support adults in helping children build emotional intelligence and resilience, cognitive skills, and social skills.

**HIV/AIDS Content in Programming**

As of 2012, South Africa had a 17.9% HIV prevalence rate among adults aged 15 to 49 (WHO, n.d.). The country has one of the world’s largest numbers of people living with HIV, resulting in an estimated 3.7 million orphans. Nearly half of these orphans have lost one or both of their parents to AIDS-related illnesses, and 150,000 children are believed to be living in child-headed households (UNICEF, n.d.). These stark numbers illustrate the devastating effects that the virus has had on the country, and indicate the importance of implementing programs and curriculum to address the unique challenges posed by the epidemic.

In 2002, Takalani Sesame introduced a special HIV/AIDS orientation to the project, developing the first early childhood HIV/AIDS curriculum in South Africa (Sesame Workshop, 2005a). The curriculum addresses challenges associated with the disease through content that addresses knowledge of the disease, attitudes regarding the disease, humanization and destigmatization of those affected, and coping with death and dying (Sesame Workshop, 2005b).

The character Kami has been a major vehicle for delivering positive messages on HIV/AIDS, promoting the humanization of people living with the disease. She acts as a role model for young viewers and listeners by portraying positive traits such as intelligence,
resilience, affection, and empathy. Kami expresses her feelings openly and articulately, and models coping mechanisms for children affected by the virus (Sesame Workshop, 2005b).

In one study, children exposed to Takalani Sesame on radio and television showed substantial gains in four areas of HIV/AIDS education: basic knowledge, blood safety, discrimination, and coping with illness. Parents and educators reported improvement in HIV/AIDS knowledge among children, especially those who listened to Takalani Sesame radio programing with mediation (Sesame Workshop, 2005a). As described in the above section on child/caregiver relationships, caregivers exposed to the “Talk to Me” TV segment were more than two times as likely to talk with their children about the disease (Sesame Workshop, 2005a).

Curriculum content on HIV/AIDS promotes 21st century skills that are of particular importance in the South African context. Through explicit lessons as well as implicit content such as Kami’s attitude and behavior, programming encourages competencies such as acceptance and positive attitudes toward others. In the study described above, the treatment group experienced a gain of 29 percentage points on the topic of discrimination in particular, while the control group experienced a gain of only five percentage points (Sesame Workshop, 2005a). An understanding of discrimination and positive attitudes toward disadvantaged or marginalized people is an essential inter-personal skill. This skill is especially valuable in countries with a high HIV/AIDS prevalence and stigmatization.

**Mother Tongue Programming**

Takalani Sesame faces an additional layer of challenges due to the fact that South Africa has 11 official national languages. As such, the South African Constitution allows learners to choose the language of instruction in which they will receive their education (Coertze, 2011). However, this does not specifically refer to mother tongue instruction. Thus, in 1997, the
Department of Education adopted the 1997 Language in Education Policy (LiEP) “which makes specific allowance for mother tongue languages, encouraging learners to learn in their mother tongue as long as it is practical” (Coertze, 2011, p. 60).

Within this context, early seasons of Takalani tried to handle the need for using the 11 official South African languages by interspersing them in different segments of the show (Coertze, 2011). However, following an impact evaluation, it was determined that this method was ineffective due to the fact that children were not able to pay attention during the segments that were not in their own language. Thus, in 2007, Takalani Sesame announced that it would follow the DoE’s policy on mother tongue learning and changed its language strategy (Coertze, 2011). This was a bold move, as it was the first time in South African television history that an applied language approach has successfully been introduced. This language shift was done in seasons four and five, in which each episode broadcasted on different days in different languages from start to finish. This strategy allowed for nine of the 11 official languages to be broadcast in such a way that children could follow an entire episode (Coertze, 2011).

Mother tongue language and culture are recognized as being linked to a person, cognitively, linguistically, and emotionally. Thus, in addition to being the means through which cultures and heritages survive, mother tongue education has been found to be a key predictor in academic performance. In 2006, the DoE came out with a study stating that children taught in their mother tongues, in South Africa, have a “49% greater chance of performing and achieving at a better level than their counterparts.” (Coertze, 2011, p. 62). Additionally, according to UNESCO, mother tongue instruction is also related to the 21st century intra-personal skills of self-esteem, gender equality, and the promotion of social inclusion (Coertze, 2011). Of equal importance, mother tongue knowledge allows multiple generations to interact with each other,
and allows for parents to become more involved in their child's school and home activities. Bi/multilingualism is beneficial to all, and allows for people to become more active in their own education, in their own communities, and hopefully later, globally.

**Takalani Sesame Monitoring and Evaluation Processes**

Monitoring and evaluation procedures and implementation must exist for any sort of program – especially when said program has scaled globally and is being diffused to millions of people. Today, the Sesame Workshop has been scaled to contexts across the globe, due to its successful research, monitoring, and evaluation processes. In fact, the Sesame Workshop is the most researched television series in media history (Cole, 2009).

The Sesame Workshop uses the language of research to describe the evaluation process that it undertakes before creating and implementing new programs, and also to describe the monitoring and evaluation of the impact of existing programs. Because Sesame Workshop has so many programs internationally, it is critical that research be continuously conducted to ensure that programming in each country is specifically tailored to the complexity of that context.

Every Sesame Workshop program, including *Takalani Sesame*, is based in a research foundation. *Takalani Sesame* is based on the foundation of meticulous research that has been conducted to assess local needs and to test materials that are developed, as well as to assess the impact of programs after they have been launched (UNAIDS, 2005). In this sense Sesame Workshop participates in evaluation as defined by Weiss as, “the *systematic assessment* of the *operation* and/or the *outcomes* of a program or policy, compared to a set of *explicit* or *implicit* standards, as a means of contributing to the *improvement* of the program or policy” (Weiss, 1998, p. 4). The Sesame Workshop is active in developing the research instruments that will be
used throughout the evaluation process because they are aware that the novel use of media often requires specialized research tools.

As with all Sesame Workshop programs, a specialized Project Research Committee drives the process of research, monitoring, and evaluation of the Takalani Sesame program (Cole, 2009). The research process for Takalani Sesame started once the Committee had decided on the topics for the season: for example, HIV/AIDS. Following the creation of a research brief, groups bid for the opportunity to design research instruments in accordance with the brief. Once a group wins the bid, the research instruments have been proposed, and the Committee approves them, the research instruments are translated into the appropriate languages, are tested in the field, and fieldworkers are trained to use them. Additionally, the Takalani Project Committee works closely with partners and the local service provider during the design and development of research instruments, the planning of fieldwork, and the analysis, in order to ensure quality, contextual appropriateness, and buy-in from the partners.

Takalani Sesame has both summative and formative evaluations. The formative evaluation is that the program is under almost constant review and evaluation, from the onset of programming and throughout each season. A summative evaluation of the program was done in six separate studies in 2004, which were commissioned to give an understanding of the performance of Takalani Sesame from different perspectives. The research for Takalani Sesame, in addition to being formative and summative, has ranged from quantitative to qualitative studies, to surveys, to literature reviews and expert panel reviews (UNAIDS, 2005).

**Behavioral Change**

The large body of research on Takalani Sesame has found that the program has impacted knowledge and perceptions; however, it is unclear whether the program has caused behavioral
change (Cole, 2009). Some forms of impact, such as the amount of viewers reached and understanding of curricular content, are easy to measure; others, such as socio-emotional range and behavioral change, are not. Thus, it is important that the Sesame Workshop work to evaluate behavioral change, as it is an intended impact of the program, and a thorough evaluation process is essential to determining whether or not the intended outcome is being reached.

The Sesame Workshop conducted a study, similar to the *Takalani Sesame* analysis of the HIV/AIDS programming, to evaluate behavioral change in Egypt as an impact of the *Alam SimSim* program. In Egypt, the Social Planning, Analysis, and Administration Consultants conducted a community outreach project and analyzed the results of the surveys of children and parents on their knowledge of health practices, hygiene and nutrition. Although the evaluation showed that those who participated in the intervention demonstrated significantly greater gains than those in the control group, knowledge is not an indicator of practice (Cole, 2009). Thus, in a further attempt to investigate behavioral change, an anthropologist conducted an investigation which showed that after exposure to *Alam Simsim*, families had begun incorporating specific aspects of the program into their home routines, including eating more vegetables and engaging in specific hygienic practices (Cole, 2009). Furthermore, in Egypt, the study discovered that the program was advocating for some practices that were difficult for families with modest incomes to implement – such as buying a toothbrush to brush teeth (Cole, 2009). Thus, some research suggests that, at least in Egypt, the Sesame program is causing behavioral change; however, further research must be conducted in regards to *Takalani Sesame*’s impact on behavior.
Program Theory and Implementation Theory for Monitoring and Evaluating Behavioral Change

Although Sesame Workshop and Takalani Sesame, in general, have a very extensive monitoring, evaluation and research foundation, there are still areas where evaluation lacking. In particular, the impact of programming on behavioral change should be thoroughly evaluated to ensure that programming is implemented in an impactful way.

Program Theory

Takalani Sesame’s mission statement is to use the educational power of media to help all children reach their highest potential (Sesame Workshop, n.d.). In order to strategically achieve this mission, Takalani must have a theory of change. Weiss explains that a theory of change must contain at least four parts: program inputs, program activities, interim outcomes, and desired end results (Weiss, 1998). Behavioral change in the case of Takalani Sesame is considered an interim outcome. The theory of change within this logic model would be: if children have access to culturally relevant educational media programming, and if they learn from this programming, and if that knowledge leads to changes in behavior, then students will reach their highest potential. Although Takalani Sesame has successfully evaluated its viewership, the knowledge that children are gaining from the programming, and the cultural relevancy of its programs, a gap in evaluation exists on the impact of the programming on behavioral change.

The repercussions of not evaluating behavioral change, according to Weiss, can be quite severe. Formative evaluations “produces information that is fed back during the development of a[program] to help improve it” (Weiss, 1998, p. 31). This type of evaluation exists for the purpose of knowing early on what changes must be made and knowing whether the program is reaching its goals (Weiss, 1998). Thus, if the interim goal of behavioral change is not evaluated,
and if that goal is in fact not being met, then this could indicate several things that the program would need to consider. One possible indication would be that there is, in fact, no activity planned for the attainment of this goal. Another possible indication may be that the activity intended has not been correctly implemented and thus implementation theory must be changed. Lastly, a possible indication would be that the program is simply not successful at inducing behavioral change. Whatever the case may be, it is imperative that the program’s impact on behavior be understood sooner rather than later, because lives of students, stakeholder buy-in, and funding depend on these outcomes.

In the case of Takalani Sesame, an evaluation of activities intended to cause behavioral change and the actual impact on behavioral change is critical to determining if the outcome is being met, and if not, where the problem lies within the process.

**Implementation Theory**

Implementation Theory, according to Weiss (1998), is the assumption “that if activities are conducted as planned, with sufficient quality, intensity, and fidelity to plan, the desired results will be forthcoming” (p. 58). Implementation Theory and the Logic Model, or Program Theory, are intertwined and are critical to the success of the mission. The implementation theory of Takalani Sesame, in terms of changing behavior surrounding HIV/AIDS, nutrition, and health, should be that: if media programming is culturally relevant, and if the content of the programming on these issues is accurate, and if the programming is aired in a way that will reach children and connect to them, and if children listen to the programing, then the children will transfer that knowledge to proper behaviors and change or adapt their behaviors fittingly.

Because no successful evaluation of behavioral change has been conducted on Takalani Sesame, it cannot be determined if the program theory and implementation theory are aligned. A
possible activity that can be implemented to gather qualitative data on the impact of
programming on behavioral change of children who watch Takalani Sesame would be to
introduce household observations into Takalani Sesame research protocol, as one option for
documenting behavior (similarly to what was done in Egypt). In the case of HIV/AIDS content
and Takalani Sesame, behavioral change could be measured in the frequency and safe disposal of
objects containing bodily fluids, safe and positive interaction with and social acceptance of HIV-
positive community members, modeling of coping mechanisms for those affected by the
epidemic, and proper medical treatment, care, and nutrition for family members living with HIV.

Researchers can use qualitative, quantitative, or mixed methods to gather evidence of
impact. In the case of gathering qualitative data describing positive changes in behavior, the
analysis of that data will take the shape of a narrative (Weiss, 1998). If this data stood alone, it
would not be possible to determine whether or not the data indicates success or failure of
programs in producing positive outcomes. However, the value of a theory of change and a theory
of implementation is the underlying assumption that if the activities are properly implemented
and effective, and if the interim goals are met, then it must indicate that the mission is being
achieved. Another possible evaluation study would be a quantitative analysis (frequency). The
value of a quantitative analysis of the collection of information through standardized instruments
is that it allows the investigator to reach conclusions with a high degree of confidence (Weiss,
1998).

Regardless of which approach is taken, or if a mixed-methods approach is used, it is
essential that a comparison group be established so that it can be determined that “events that
come after the program are due to the program” (Weiss, 1998, p. 87). In the case of evaluating
behavioral change, the treatment group would be a randomly selected sample of participants who
regularly watch *Takalani Sesame* programming, whereas the comparison group would be a randomly selected group of people with the same characteristics as the people in the treatment group, except for the fact that they do not watch *Takalani Sesame*. This counterfactual will allow investigators to determine whether the behavioral changes seen in the treatment group are a result of *Takalani Sesame*—and will allow them to rule out “plausible rival explanations for the changes that appear” (Weiss, 1998, p. 88).

**Monitoring and Evaluation Conclusion**

The Sesame Workshop has established a rich research tradition, as seen in the discussions of *Takalani Sesame*, which must continue to be expanded and developed. Monitoring and evaluation is necessary for all functions of Sesame Workshop programs. According to Weiss (1998), good reasons for evaluations are to conduct midcourse corrections; to continue, expand or institutionalize the program; to cut or end the program; to test a new program or activity; to choose the best of several programs or activities; and to decide whether to continue funding. Its strong tradition of research and monitoring and evaluation indicate that in most areas *Takalani Sesame* has been successful in achieving its interim goals. However, monitoring and evaluation of some additional activities and interim outcomes needs to be conducted to ensure that the program’s intended outcomes are truly being met, so that it can be determined whether the mission is being accomplished. Well-executed impact evaluation studies of *Takalani Sesame* are essential to ensure the continued positive impact and reputation of the program.

**Conclusion**

*Takalani Sesame* has thus far successfully provided education programming in line with the 21st century skills framework described by Pellegrino and Hilton. This success has been due
to the close collaboration between local and international organizations during the development process, the relevance of the content to the South African context, and that the program has used a variety of mediums and languages to reach a wide audience.

To ensure continued success and improvement it is necessary for Takalani Sesame to continuously develop their monitoring and evaluation framework. This paper proposes a monitoring and evaluation program that includes household observations to better measure behavioral changes related to viewing and listening of Takalani broadcasts. In the case of HIV/AIDS education, household observations can measure behaviors such as the frequency at which households safely discard bodily fluids, and more importantly which bodily fluids and why. Observations can be also made of the attitudinal and affective responses to individuals with HIV/AIDS.

The impact of Takalani Sesame, especially the collaboration of the Sesame Workshop with the South African Department of Education, reflects the successful synthesis of international methods and an understanding of local contexts to promote 21st century skills. Further mechanisms for improvement may ensure that Takalani Sesame will be able to provide the cognitive, intra- and inter-personal competencies necessary for South African children to function in society and tackle the challenges of today and tomorrow, both in South Africa and beyond.
References


### Appendix A

#### TABLE 2-2 Clusters of 21st Century Competencies

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Terms Used for 21st Century Skills</th>
<th>O*NET Skills</th>
<th>Main Ability/Personality Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cognitive Processes and Strategies</strong></td>
<td>Critical thinking, problem solving, analysis, reasoning/argumentation, interpretation, decision making, adaptive learning, executive function</td>
<td>System skills, process skills, complex problem-solving skills</td>
<td>Main ability factor: fluid intelligence (Gf)</td>
</tr>
<tr>
<td><strong>Knowledge</strong></td>
<td>Information literacy (research using evidence and recognizing bias in sources); information and communications technology literacy; oral and written communication; active listening</td>
<td>Content skills</td>
<td>Main ability factor: crystallized intelligence (Gc)</td>
</tr>
<tr>
<td><strong>Creativity</strong></td>
<td>Creativity, innovation</td>
<td>Complex problem-solving skills (idea generation)</td>
<td>Main ability factor: general retrieval ability (Gr)</td>
</tr>
<tr>
<td><strong>Intellectual Openness</strong></td>
<td>Flexibility, adaptability, artistic and cultural appreciation, personal and social responsibility (including cultural awareness and competence), appreciation for diversity, adaptability, continuous learning, intellectual interest and curiosity</td>
<td>[none]</td>
<td>Main personality factor: openness</td>
</tr>
<tr>
<td><strong>INTRA-PERSONAL COMPETENCIES</strong></td>
<td>Initiative, self-direction, responsibility, perseverance, productivity, grit, Type 1 self-regulation (metacognitive skills, including forethought, performance, and self-reflection), professionalism/ethics, integrity, citizenship, career orientation</td>
<td>[none]</td>
<td>Main personality factor: conscientiousness</td>
</tr>
<tr>
<td><strong>Positive Core Self-Evaluation</strong></td>
<td>Type 2 self-regulation (self-monitoring, self-evaluation, self-reinforcement), physical and psychological health</td>
<td>[none]</td>
<td>Main personality factor: emotional stability (opposite end of the continuum from neuroticism)</td>
</tr>
<tr>
<td>Cluster</td>
<td>Terms Used for 21st Century Skills</td>
<td>O*NET Skills</td>
<td>Main Ability/Personality Factor</td>
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<tr>
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<tr>
<td>Teamwork and Collaboration</td>
<td>Communication, collaboration, teamwork, cooperation, coordination, interpersonal skills, empathy/perspective taking, trust, service orientation, conflict resolution, negotiation</td>
<td>Social skills</td>
<td>Main personality factor: agreeableness</td>
</tr>
<tr>
<td>Interpersonal Competencies</td>
<td>Leadership, responsibility, assertive communication, self-presentation, social influence with others</td>
<td>Social skills (persuasion)</td>
<td>Main personality factor: extroversion</td>
</tr>
</tbody>
</table>