

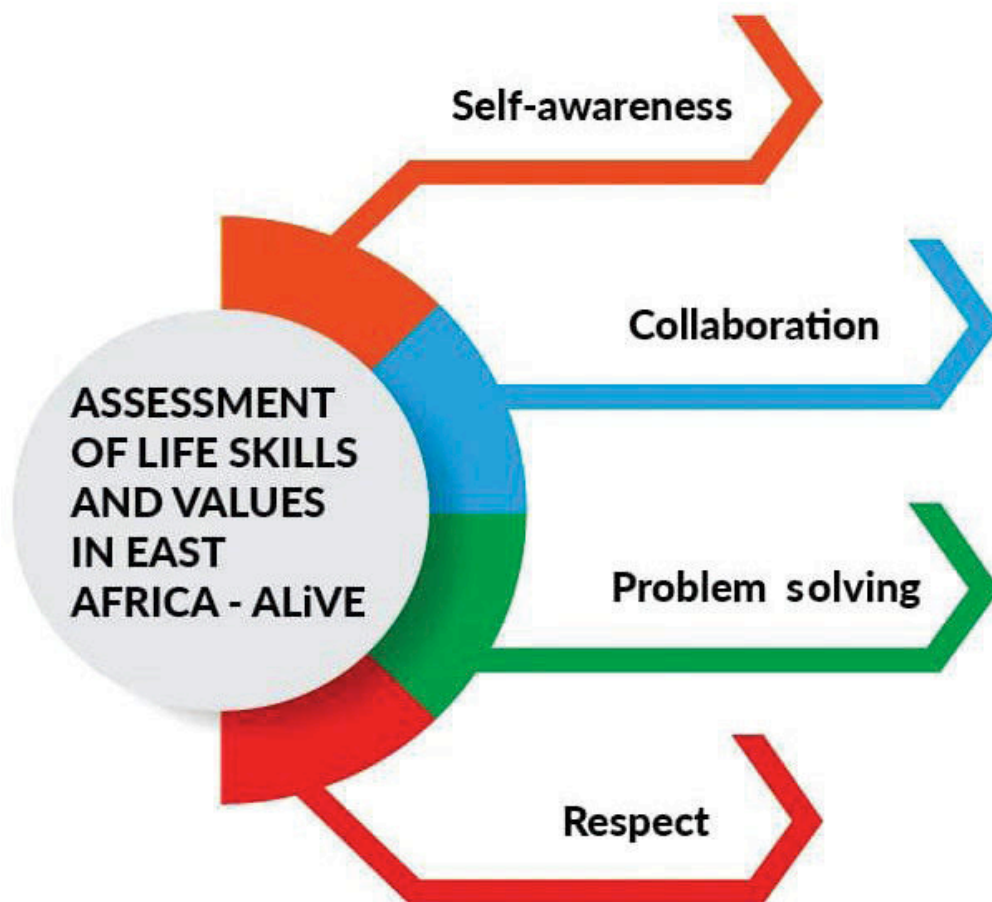
Assessment of Life Skills and Values in East Africa (ALiVE)

*Proficiency Levels of Adolescents in Life Skills and Values
in Kenya, Tanzania, and Uganda*



REGIONAL REPORT

JUNE, 2023



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Contact

Zizi Afrique Foundation
Le Mac Building-1st Floor
P.O Box 6183-00100
Nairobi
Email: Info@ziziafrique.org
Website: www.reliafrica.org

Foreword

We are well on our way to the year 2040. Following the harmonization of education curricula in East Africa that was completed ten years ago, the teaching of life skills and values is routine in every classroom. Learning assessments indicate that more than 90% of our children read with fluency and comprehension by the end of grade three. This follows the massive investment in the training of teachers and the effective application of technology to improve learning everywhere. We no longer have crowded classrooms because children alternate between learning at school and connecting virtually from home and the satellite learning centres constructed by the government.

The scenario described above is the future we envisage. It gets us out of bed every morning. Our vision is that the schooling generation acquires the needed competencies to navigate the complexities of the 21st century. The Assessment of Life Skills and Values in East Africa (ALiVE) is a journey of hope. When we started in 2020, there were only a few assessments of these competencies in East Africa. A study commissioned by Echidna Giving and completed in 2019 established that 75% of the traced assessment tools available were standardized questionnaires, mostly self-rating scales and ratings by others. Most of these had been developed in the global north context. Eighty-three percent (83%) of the people interviewed expressed the thirst to participate in a collective impact initiative, to learn how to develop these tools for the East African context.

ALiVE has risen to this challenge. This report is a product of collaborative work among more than 2,000 people across Kenya, Tanzania, and Uganda. A contextualized tool developed via a learning-through-doing approach by 47 people, advisory teams of more than 25 local experts, more than 100 trainers, and close to 800 assessors. This work is evidence of fortitude and our

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Evidence shows that high levels of life skills support adolescents' abilities to cope with emotional, educational, and behavioural challenges in all aspects of their lives (UNICEF, 2020). But despite the global concern for life-skills education (UNICEF, 2012), coupled with the introduction of competency-based curricula in Kenya, Tanzania, and Uganda that emphasize the teaching and learning of life skills and values, it is unclear how these have been assessed. Therefore, in order to generate large scale data on life skills and values among young people, the Regional Education Learning Initiative (RELI) commissioned an initiative called Assessment of Life Skills and Values in East Africa (ALiVE), which purposed to collaborate with local leaders to create and develop contextualized assessments in East Africa.

Over the three years (2020–2023), the objectives of the ALiVE initiative were the following:

- a. To develop contextualized, open-source tools for assessment of life skills and values in the East African context;
- b. To generate large-scale data on life skills and values across the three countries;
- c. To use the evidence to inform change and build capacities within the values and life skills member organizations.

The goal of the initiative is to support the four national education systems in their focus on these competencies, inform regional policy throughout the East African Community, and contribute to global knowledge on the measurement of life skills and values in context.

To achieve the stated objectives, the ALiVE initiative focused on developing an assessment of three life skills (collaboration, problem solving, and self-awareness) and one value (respect) which were prioritized through a series of consultative meetings with organizations implementing interventions on life skills and values in East Africa. The assessment targets both in-school and out-of-school adolescent boys and girls between 13 and 17 years of age. Embracing the Sustainable Development Goals (SDG) spirit of leaving no one behind, the initiative conducted the assessment at the household level. The aspiration was to use a simple and easy-to-use tool, making it feasible and affordable to conduct such an assessment on a national scale.

The ALiVE tool was developed through a participatory process that started with a contextualisation

Several factors influenced the design of the ALiVE tool:

- a. The ALiVE tool was designed to get a glimpse of functioning across life skills and values, as aspired to by ministries of education in the respective educational jurisdictions. The assessments were not designed for diagnosis of individual functioning but rather to establish a basis upon which countries might evaluate their educational goals given their embrace of life skills and values in recent years, and to inform their curricular planning.
- b. The ALiVE tool was concerned with a representative sample of the participating countries' adolescents who might be in or out of school. This interest, therefore, required household-based assessment. This medium for assessment, in turn, requires manageable interactions in the field that are distinct from interactions that can be managed at the group level in a formal education environment. Manageability in the field implies assessment forms that can be communicated orally, in time-efficient ways, and through content such as daily life scenarios that are not reliant on school-based learning.
- c. The ALiVE team committed considerable effort to defining and describing the target constructs. This was undertaken both due to observance of a well-established test and scale development model and due to the combination of two relatively recent innovations: first, the assessment of 21st century skills remains in its early days; and second, household-based assessment at large scale has emerged in the past decade

Table 1: Sampling across Districts, Enumeration Areas, and Households

Variables	Kenya	Tanzania	Uganda	Zanzibar	Total
Districts/counties	20	34	20	11	85
Enumeration areas	798	673	400	120	1,991
Households	14,161	11,802	7,815	1,942	35,720
Adolescents (problem solving, self-awareness, and respect)	17,276	14,645	11,074	2,447	45,442
Adolescents (collaboration)	7,494	6,827	4,476	1,319	20,116

The distribution of the assessed adolescents across countries, genders, ages, and education levels, is shown in Table 2.

Table 2: Gender, Age Distribution, and Education Status of Adolescents

[illegible]

Adolescents' Disability Status

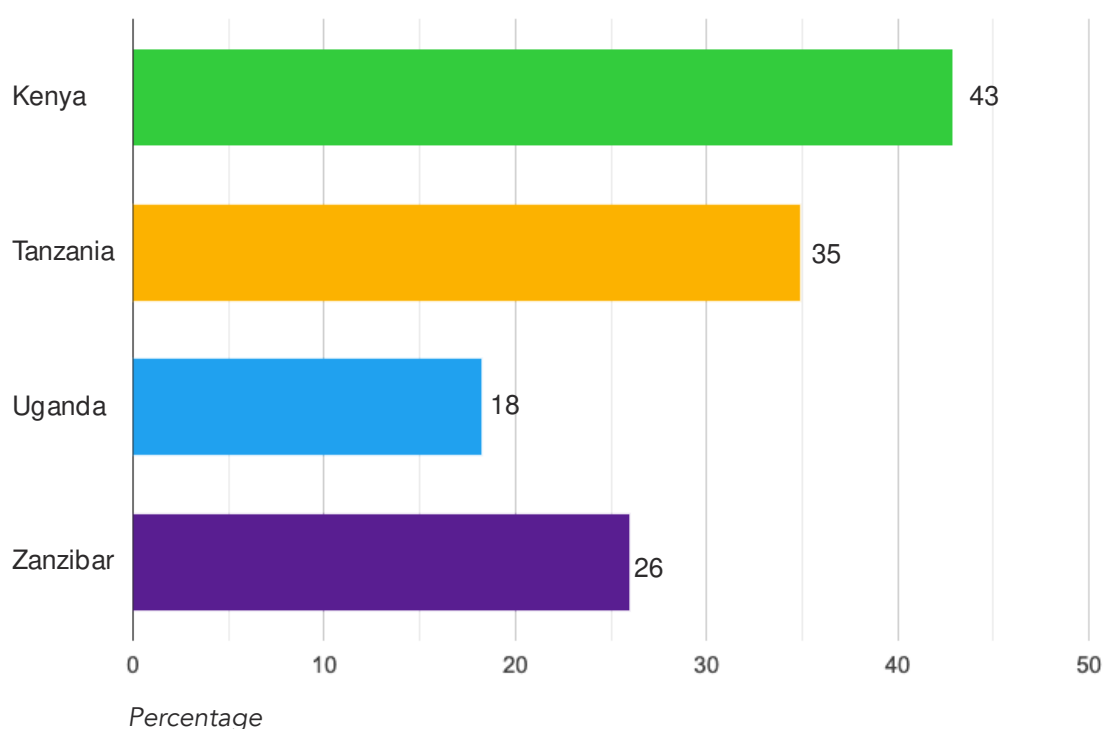
Disability status of the adolescents was determined using the Washington Group Short Set of Questions. Parents were asked whether their children had any difficulty in vision, hearing, walking, memory, self-care, and language/communication and how severe such a difficulty was. Across the four jurisdictions, parents reported about 12% of the adolescents (11.5% males and 12.3% females) aged 13 to 17 years had at least one form of difficulty. Table 3 provides the occurrence of the identified difficulties.

Table 3: Identified Difficulties across the Countries

Adolescents' Proficiencies Beyond Basics Literacy

Adolescents were asked to read as fluently as they could from a short text that was extracted from the Uwezo Beyond Basics Literacy Assessment, targeted towards the Primary 4 standard. Thereafter, adolescents who managed to read the text were asked three comprehension questions related to the text. About 23% of the adolescents (17.5% males and 16.0% females) were completely unable to read the text. For adolescents who were able to read the text, the assessors followed their reading process in order to ascertain whether they were reading sentences as a string of words, stopping or hesitating while reading, omitting or skipping the reading of some words or sounds, or replacing words or sounds that they were unable to read. Adolescents who did not demonstrate any of these behaviours are categorized as fluent readers. Based on these parameters, 34% of the adolescents (31% males and 36% females) are regarded as fluent readers.

Figure 1 shows the percentage of adolescents regarded as fluent readers by jurisdiction. Kenya has the highest number of adolescents regarded as fluent readers, while Uganda counts the lowest number.



The reading task was followed by comprehension questions. Analysis of this data shows that 3 in 10 adolescents (29% males and 31% females) responded correctly to all three questions from the text. A third of the adolescents (36% males and 31% females) did not respond correctly to any of the three questions.

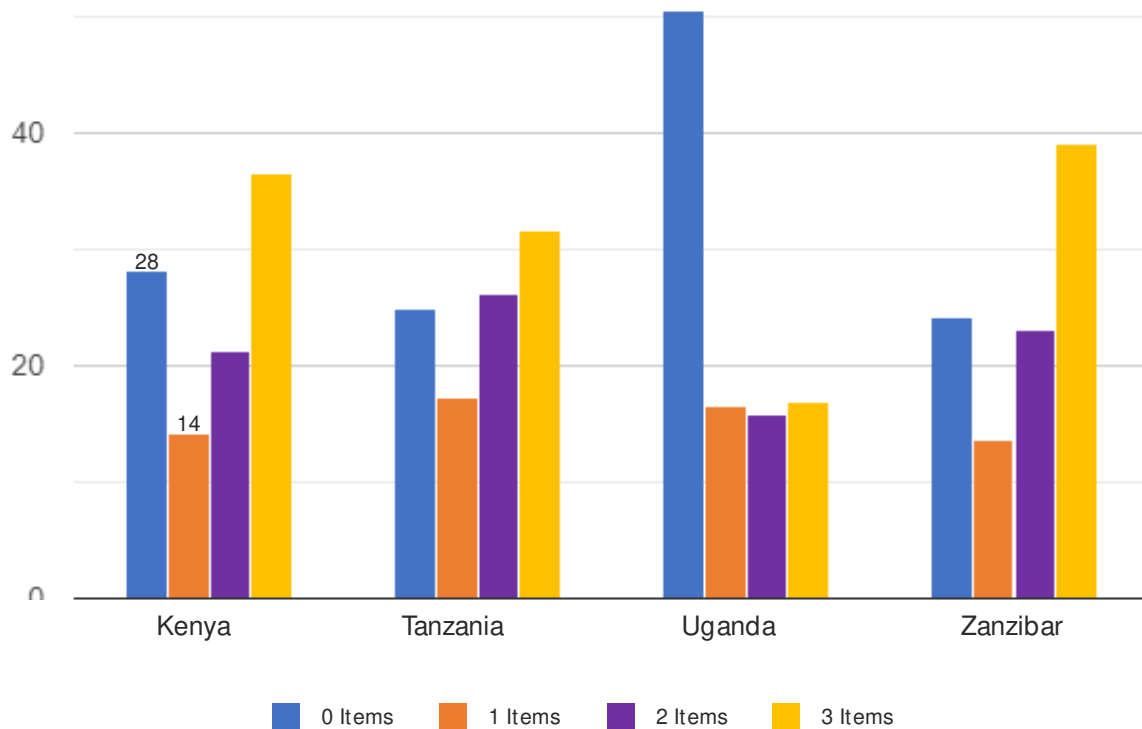


Figure 2: Beyond Basics Literacy Comprehension Items by Country

Adolescents' Digital Literacy

In order to understand the digital literacy of adolescents, researchers asked them how often they use devices such as computer or tablet, feature phone, television, and radio. Adolescents who use the devices either every day or at least once a week but not every day, are considered to be regular users of technology. With this benchmark, about 19% of adolescents (20% males and 17% females) are regular users of computers or tablets; 36% are regular users of feature phones (38% males and 34% females); 51% are regular users of radio (52% males and 49% females); and 43% are regular users of television (43% males and 43% females). Adolescents who have not reached this benchmark, have either never used the technological device, used it less than once a month, or have used it at least once a month but not every week.

¹ The three comprehension questions were (i) What was Musa's grandmother doing when Musa visited the farm? (ii) How can you tell that the farm is big? and (iii) What two animal products are you likely to get from this farm?

² A feature phone, also known as a basic phone or "dumb phone," is a type of mobile phone that provides basic calling and messaging functionality but lacks the advanced capabilities and features found in smartphones. Unlike smartphones, feature phones typically have limited internet access, smaller screens, physical keypads, and basic operating systems.

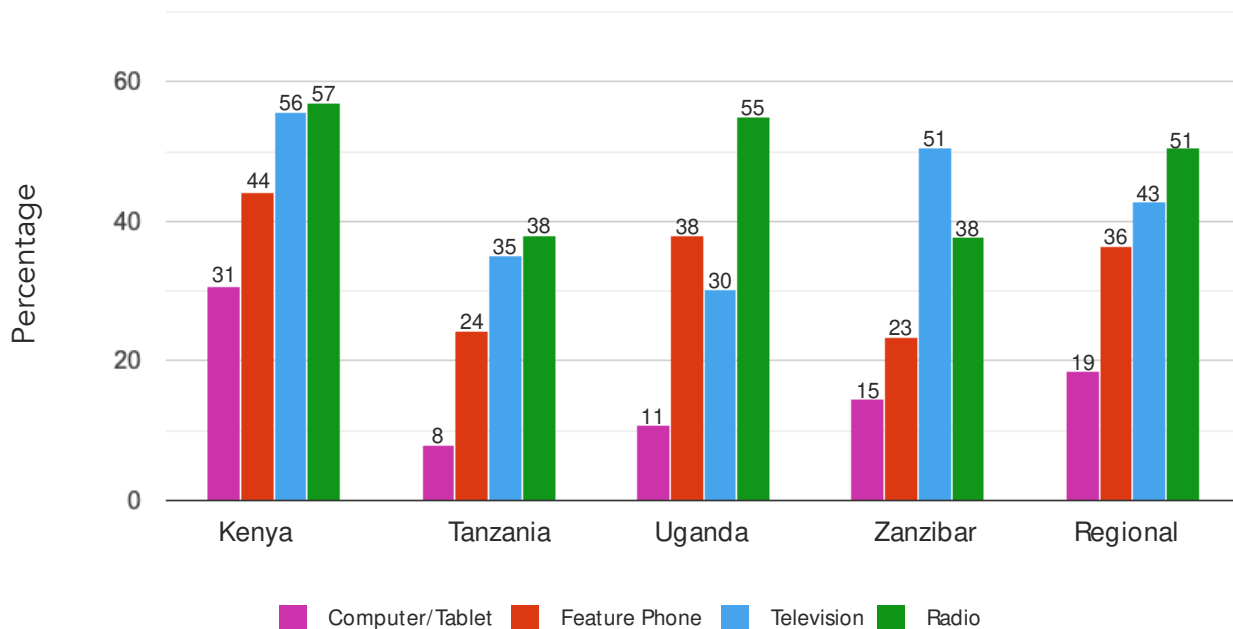


Figure 3: Regular Users of Selected Technological Devices

It is noticeable that use of a computer/tablet is least frequent, and that use of radios is the most frequent. Overall, devices are most frequently used in Kenya. As reported by the adolescents, televisions are most frequently used in Kenya and Zanzibar, while radios are most frequently used in Kenya and Uganda.

Adolescents' ability to use technology was also explored. Each adolescent was given a smartphone or tablet in the assessment session and was asked to access the internet and visit their favourite website. In case of no connectivity, assessors observed and noted whether the adolescent was able to locate an app or click on it. About 31% (32% males and 29% females) of the adolescents were able to do the task with ease. About 48% of the adolescents (47% males and 49% females) were unable to use the technology. The rest were able to locate an app or click on it, but with some difficulty.

Table 4: Use of Technology to Access the Internet and Favourite Websites or Apps

Assessment of Collaboration, Problem Solving, Respect, and Self-Awareness

The four constructs, including three life skills and one value, are targeted through the use of scenario-based and performance-based tasks. Due to the nature of the planned assessment and the desired results structure, the overall tool that covers all four constructs was designed to be relatively easy to administer and score, and to gather indicators of the competencies in ways that would be simple to report. The assessment is therefore not designed to generate results that would comprehensively describe any one individual, but rather to produce more general indications of key competencies at population levels.

For administration of the tool for problem solving, respect and self-awareness, each task is read out loud to the adolescent. This is followed by asking a series of questions, the answers to which provide item-level data. The coding of responses is enacted in real time, with test administrators who are familiar with the coding rubrics, encoding the responses into the KoboCollect application installed on handheld devices. Note that the quality of responses is determined by reference of these to the criteria set for identification across the levels of proficiency provided for each construct. The administration procedure is slightly different for collaboration. The assessment tasks are performance-based, and instructions for each step in a collaboration activity are provided. In this instance, the behaviours of the adolescents at each step are observed, and again encoded and compared to the criteria set for estimating levels of proficiency in KoboCollect.

The following sections provide information for each construct, in terms of structure of the tool, distribution of responses across factors of interest, and psychometric information that lends confidence to claims of validity. The most comprehensive explanatory narrative is provided for

Table 5: Tasks and Items Contributing to the Problem-Solving Scales

Constructs		Items	#
Problem solving		PS1b, PS1c, PS1d, PS1e, PS3b, PS3c, PS3d, PS3e, PS4b, PS4c, PS4d, PS4e	12
Skill Dimensions	Defining the problem [b, c]	PS1b, PS1c, PS3b, PS3c, PS4b, PS4c	6
	Finding the solution [d, e]	PS1d, PS1e, PS3d, PS3e, PS4d, PS4e	6
Subskills	Recognizing the problem [b]	PS1b, PS3b, PS4b	3
	Information gathering [c]	PS1c, PS3c, PS4c	3
	Exploring alternative solutions [d]	PS1d, PS3d, PS4d	3
	Selecting the solution [e]	PS1e, PS3e, PS4e	3

For the assessment, each task is read out loud to the adolescent. This is followed by asking questions,

Table 6: Recognizing the Problem – by Gender, Age, and Education Status

Subskill: Information Gathering

This subskill consists of three items: PS1c, PS3c, PS4c. *This subskill targets an individual's ability to think logically about what might have caused or contributed to a problem, and what therefore needs to be known in order to solve the problem.*

Table 7: Information Gathering – Item Responses by Gender, Age, and Education Status

Subskill: Exploring Solutions

This subskill consists of three items: PS1d, PS3d, and PS4d. This subskill targets an individual’s ability to link their knowledge of the problem with possible actions or solutions.

Table 8: Exploring Solutions – Item Responses by Gender, age, and Education Status

Subskill: Selecting the Solution

This subskill consists of three items: PS1e, PS3e, and PS4e. This subskill targets an individual’s ability to evaluate multiple possible solutions to a problem.

Table 9: Selecting Solutions – Item Responses by Gender, Age, and Education Status

Reliability Analysis of the Problem-Solving Subskills Scales

Each of the four subskill scales draws on items that contribute well to the subskills. In addition, review of how the items contribute to the overarching PS construct indicates high homogeneity of content, which is supported by the alpha reliability coefficients (Table 10).

Table 10: Summary of Reliability Coefficient of the Problem-Solving Constructs

	# items	Alpha
PS Recognition of problem	3	.7156
PS Information gathering	3	.7360
PS Exploring solutions	3	.7493
PS Selecting solutions	3	.7620
PS Overall	12	.9070

Psychometric Properties: The Item Fit Statistics

This section presents information on the item fit statistics generated using the Rasch partial credit model. Fit statistics are used to investigate how each data point (both at the item level and the

	Unweighted Fit			Weighted Fit		
Item	Fit value	t-stat	p-value	Fit value	t-stat	p-value

Problem Solving: Differential Item Functioning

Use of assessment tools across countries or cultures raises issues of validity of comparison between groups. Such issues may reside in matters of language, societal norms, religion, ethnicity, as well as age and gender. Test developers make efforts to design assessments in ways that will avoid differential bias among groups. Notwithstanding, it is also necessary to check whether such bias may have occurred after the fact. The results and information from Differential Item Functioning (DIF) analysis provide a rich source of information for exploring the possibility of bias of measurements across groups.

Analyses were conducted across the four jurisdictions to provide insights into whether items functioned differently or similarly across them. Detection of DIF was done through visual inspection of the results from scatterplots using item thresholds derived from the Rasch model. Item thresholds for each of the study jurisdictions were placed on the Y-axis, and the regional item thresholds – all four jurisdictions together—were placed on the X-axis. In addition, scatterplots for each of the study jurisdictions were contrasted with each other.

Overall, there is negligible DIF in problem solving across the four jurisdictions. In exploring the slight differences that do occur, it is clear that they are primarily due to group difference in performance rather than bias. It can be concluded that problem-solving items pattern very similarly across all four jurisdictions. Figure 4 provides an example that shows most differences obtained for a jurisdiction versus the region.



Problem Solving: Item Spread and Coding of Responses

In order to compare whether the three tasks were differentially difficult for the adolescents, and whether some subskills are more difficult to demonstrate than others, the Rasch partial credit model was used. Figure 5 illustrates how the tasks and items were experienced by the adolescents. The person-ability map based on the Rasch model provides a view of how well items are spread out to define increasing proficiencies, and whether the items are separated enough to measure the respondents' abilities. Rasch item difficulty is not dependent on sample. Rasch item difficulty is defined in terms of the abilities needed to obtain a 50 percent chance of getting an item correct (Wu & Adams, 2007) and allows for the placement of items and persons on the same scale. The actual positioning of an item on a scale in terms of its difficulty is defined by the person ability for which the probability of a correct answer to the item equals 0.5. Naturally, therefore, the higher the person's ability, the greater the probability of correctly answering an item.

Figure 5 shows that the coding of responses from low to higher performance levels accurately represents increasing proficiency. This finding validates the approach to item design which allowed for clearly identifiable differences in responses and their coding. For example, responding to Task 3's b item (*recognising the problem*) is the least difficult, calling for the lowest level of proficiency.

Problem Solving: Overall Distribution of Items across Persons

An ideal test would be characterised by items distributed right across the possible range of persons' abilities. Such an instance would allow for optimal differentiation of one person's abilities from another. This is somewhat but not totally the case for this set of items. Regardless, there is sufficient delineation between each coding level to justify the attribution of descriptive scoring statements to the four proficiency categories of PS. The unidimensional solution that treats all items as contributing only to the overarching PS construct is shown in Figure 5.

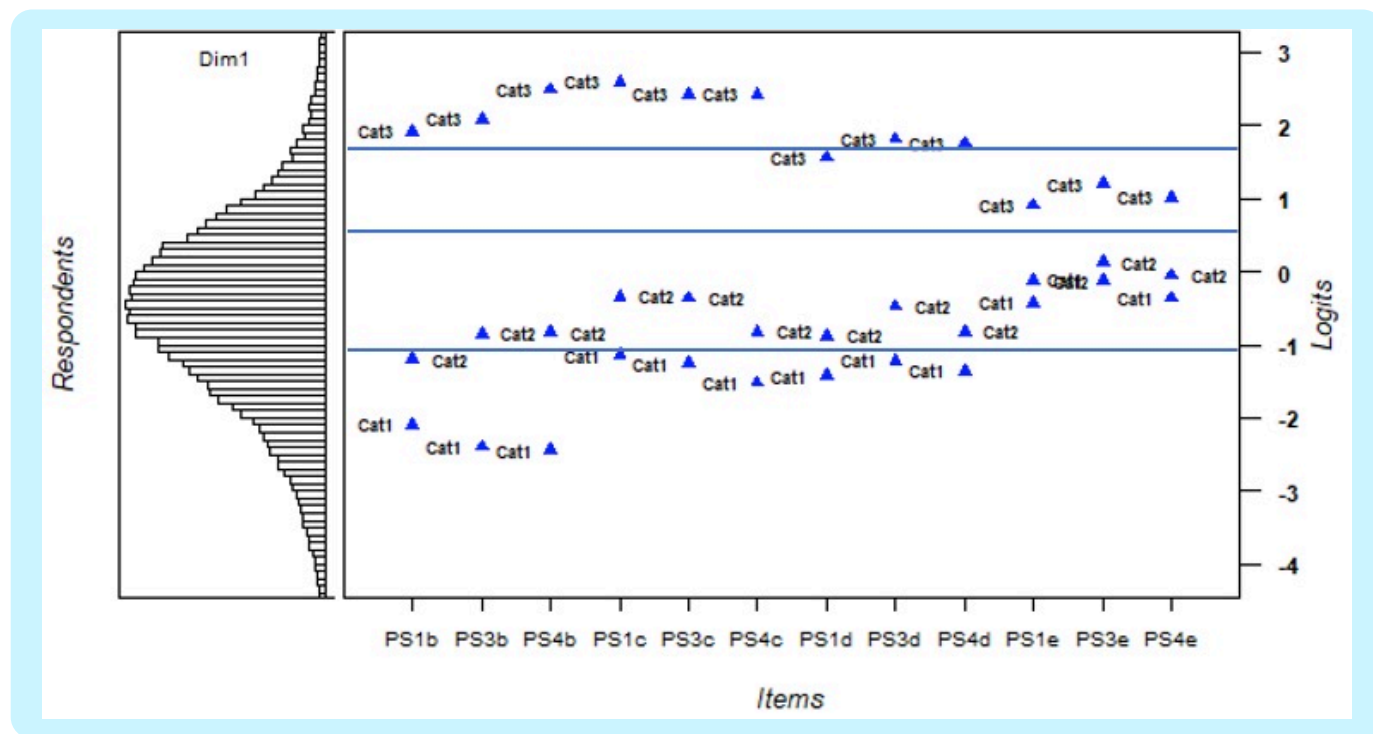


Figure 5: Person-Ability Map for Problem Solving (Unidimensional Scale)

Descriptive categories of performance were determined for the overarching problem-

PROBLEM-SOLVING PROFICIENCIES OF ADOLESCENTS

Descriptive Proficiency Statements for Problem Solving

The first step in checking for meaningfulness of the scales and their proficiency levels is to construct qualitative descriptors for the range of proficiencies based on the adolescent responses, and check these against the skills required to respond to the items. This is done based on the person-ability map, which places adolescents' abilities and items' difficulty parameters on the same scale. The descriptive proficiency statements derived for the PS construct are shown in Table 12.

Table 12: Descriptive Proficiency Statements for Problem Solving

Construct	Beginning Adolescent is...	Emerging Adolescent is...	Consolidating Adolescent is...	Proficient Adolescent is...
Problem Solving	Struggling to recognise a problem or its nature and therefore unable to identify possible solutions	Able to recognise existence of a problem from one perspective, and act on that to identify a possible solution	Able to recognise existence of a problem from one perspective; Able to identify a main approach to solving the problem and can justify it	Able to recognise existence of a problem from multiple perspectives, understanding that there may be multiple solutions to evaluate and select from

Distribution of Problem-Solving Results

This section presents information about how problem-solving skills vary across factors that characterise the adolescents. The information is organised according to the descriptive statements presented in Table 12.

Distributions by Jurisdictions

The distributions of adolescents within each of the four jurisdictions across the proficiency levels are shown in Figure 7. As can be seen, most adolescents in all four jurisdictions perform within the Emerging level, and the least perform within the Proficient level, the highest functioning level. There is a slight skew in the distribution of the Zanzibar adolescents, with fewer than expected at the lowest level, and more than expected at the higher levels.

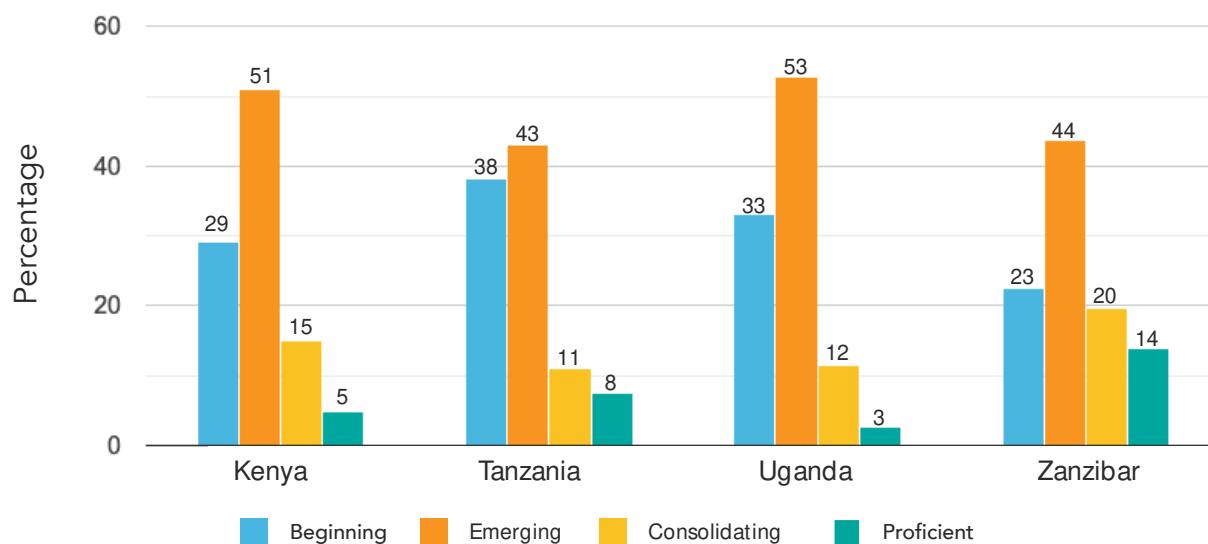


Figure 7: Problem-Solving Proficiency Levels by Jurisdiction

Distributions by Gender, Disability, Age, and Education

Gender had no impact on problem solving—in other words, males and females performed similarly to each other. Similarly, there are no associations between disability status of the adolescents and problem solving.

Table 13: Problem-Solving Proficiency Levels of Adolescents by Selected Characteristics

		Problem Solving Proficiency Level			
		Not Proficient	Proficient	Very Proficient	Extremely Proficient
		Percentage of Total Sample			
Gender	Male				
	Female				
Disability	Disability				
	No Disability				
Age	13-15				
	16-18				
Education	Grade 7-9				
	Grade 10-12				

Association between Problem Solving and Basic Literacy

The distribution of the adolescents' PS proficiencies by their basic literacy proficiencies presents some significant associations (Figure 8). Adolescents who are 'fluent' readers tended to demonstrate higher PS proficiencies compared to those who are 'not fluent' readers. For instance, 20.6% of the adolescents who are fluent readers, compared to 39.3% of those who are non-fluent readers, struggle to recognise a problem or its nature and are therefore unable to identify possible solutions (Beginning).

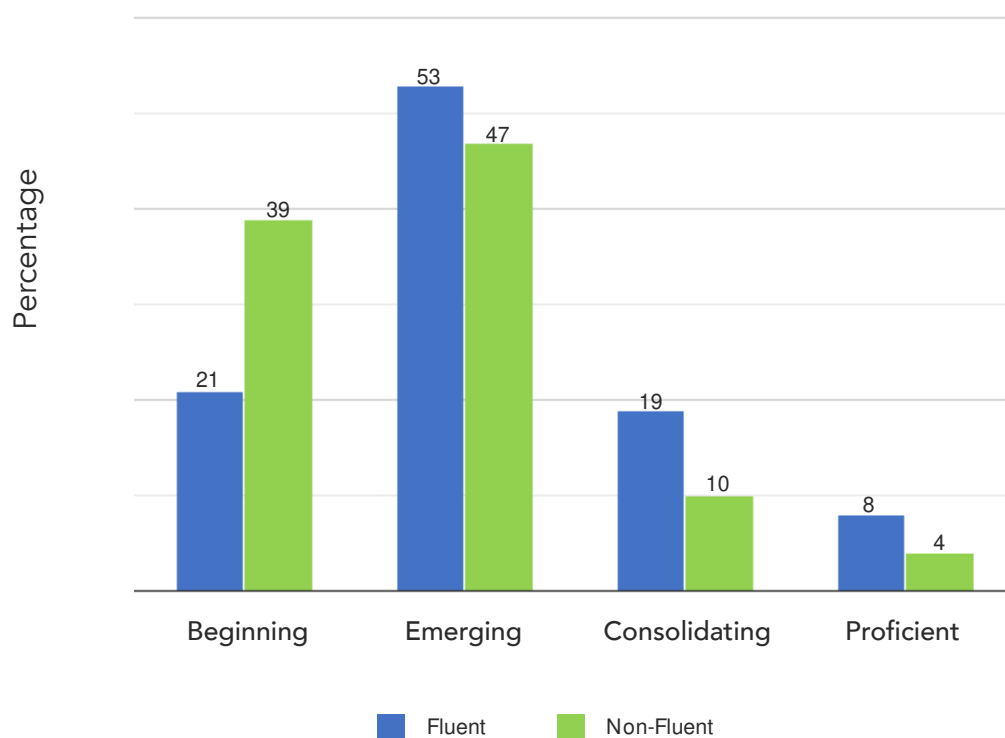


Figure 8: Problem-Solving Proficiencies of Adolescents by Fluency in Basic Literacy

Association between Problem Solving and Digital Literacy

The distribution of adolescents' PS proficiencies by their digital literacy presents some significant associations (Figure 9). Adolescents who are competent in digital literacy tend to demonstrate

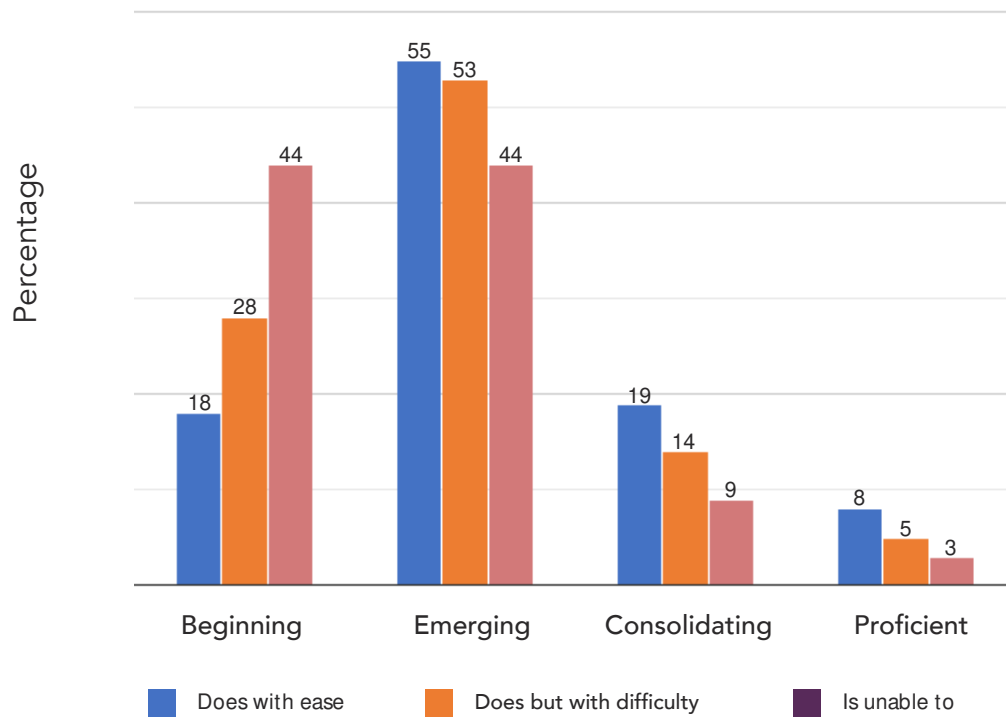


Figure 9: Problem-Solving Proficiencies of Adolescents by Digital Literacy Compet

The Measurement

The problem-solving tool comprises three tasks, each with a subset of four items. Each task consists of a brief description of a situation, using four items, each of which targets a different aspect of an adolescent's problem-solving proficiency. These subskills are *recognizing the problem*, *information gathering*, *exploring alternative solutions*, and *selecting the solution*.

All scales demonstrate high reliability, and each contributes robustly to the overarching skill of problem solving. Given the strength of the unidimensional model, reporting results

This section describes that part of the ALiVE tool ('the tool') used to gather data on the self-awareness (SA) proficiencies of the adolescents, and describes those proficiencies.

The SA assessment comprises five tasks with a set of 12 items. Each task includes a brief description of a situation, with items targeting different aspects of an adolescent's SA proficiency. The five tasks follow slightly different patterns. The items assess the adolescent's SA through two of its subskills: *self-management*—managing emotions and stress; and *perspective taking*—understanding views and actions of others, adjusting to others' views and actions, and recognizing one's identity and where one fits into one's family, society, and community. The tasks are numbered 1, 3, 4, 6, and 7 (a numbering convention derived from the development of the SA tool, which included 7 tasks in field testing). The final tool provides 12 data points from adolescents' completion of all five tasks (Table 14).

Constructs			

Table 15: Self-Management – Item Responses by Gender, Age, and Education Status

[illegible]

For all six items, similar patterns in the most items in this subskill, most adolescents to regulate negative emotions or responses of adolescents moving from lower to high responses of more educated adolescents

Subskill: Perspective Taking

This subskill consists of six items: SA1b, individual's ability to understand why people behave the way they do towards him or her, to accept feedback, and to recognise his or her impact on and place in family, society, and community.

For all six items, similar patterns in the performance levels of males and females can be seen. In terms of age, there is a pattern of responses of older adolescents moving from lower to higher performance levels. Similarly for education status, there is a pattern of responses of more educated adolescents moving from lower to higher performance levels. Most adolescents scored in the Consolidating range.

Reliability Analysis of the Self-Awareness Scales

Each of the two subskill scales draws on items that contribute well to the subskills. Review of how the items contribute to the overarching SA construct indicates high homogeneity of content, supported by the alpha reliability coefficients (Table 17).

Table 17: Summary of Reliability Indices for Self-Awareness Constructs

	# items	Alpha
SA Self-management	6	.7535
SA Perspective taking	6	.7375
SA Overall	12	.8374

Psychometric Properties: The Item Fit Statistics

This section presents information on the item fit statistics estimated based on the Rasch partial credit model. These fit statistics and spread provide evidence for construct and criterion validity.

Self-awareness: Differential Item Functioning

Overall, there is negligible DIF in SA across the four jurisdictions. In exploring the slight differences that do occur, it is clear that they are primarily due to group difference in performance rather than bias. It can therefore be concluded that items for SA pattern very similarly across all four jurisdictions. Figure 10 provides an example using the *self-management* subskill, which illustrates the greatest differences found from all SA subskill and overarching construct comparisons, between jurisdictions.

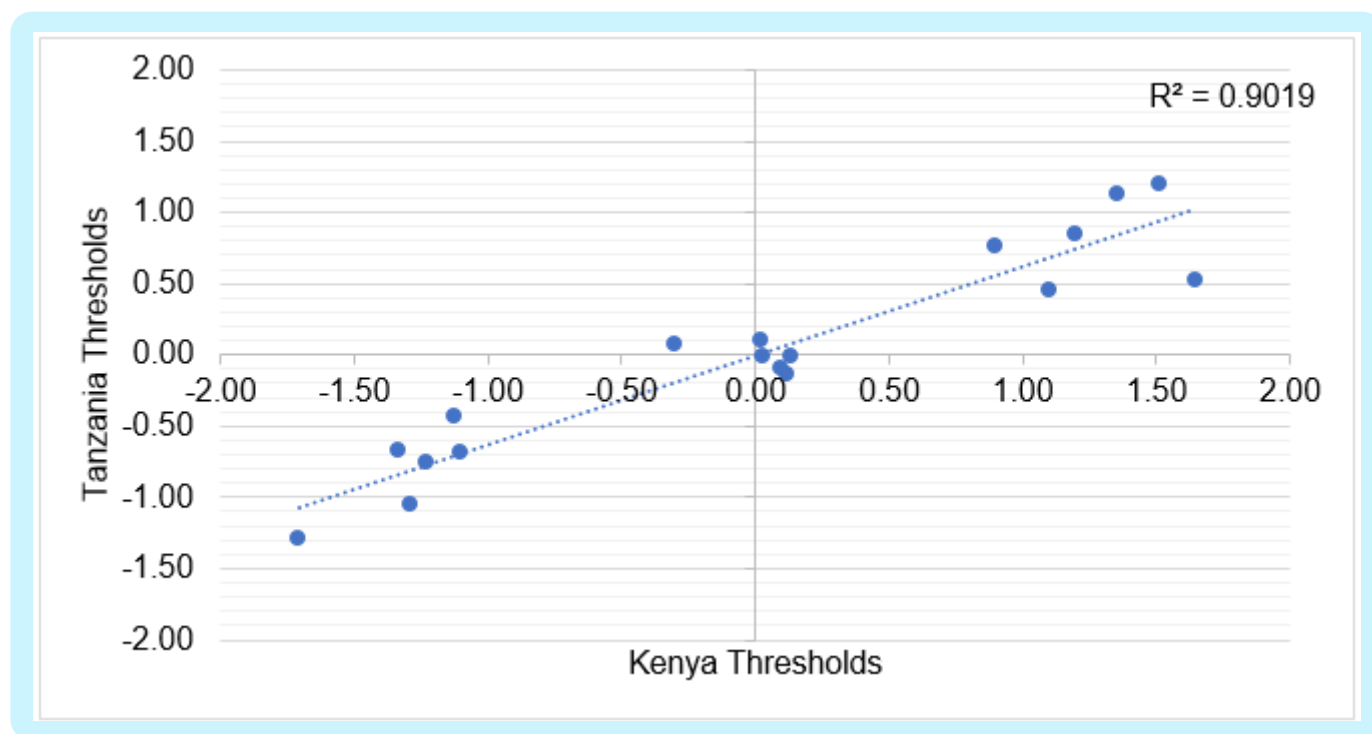


Figure 10: Scatterplot of Self-Management Item Thresholds: Tanzania Mainland versus Kenya

Self-Awareness: Item Spread and Coding of Responses

In order to evaluate how difficult the five tasks were for the adolescents, and whether one subskill is more difficult to demonstrate than the other, the Rasch partial credit model was used. Figure 11 illustrates how the five tasks and 12 items prompted adolescent responses. The person-ability map based on the Rasch model shows how the items are spread out to define increasing proficiencies.

Figure 11 shows that the coding of responses from low to higher levels accurately represents increasing proficiencies. In other words, Cat1 (the lowest level of coded response) items appear below Cat2, and thence below Cat3, which indicates that the underlying hypotheses about successively more difficult performance are confirmed by the data. This finding validates the approach to item design,

Self-Awareness: Relative Difficulty of Subskills

In order to examine whether the two subskills are similarly easy or difficult, items contributing to each of these are examined. The *self-management items* (SA1d to SA7c) and perspective taking items (SA1b to SA7d), are shown on the right- and left-hand side, respectively, of the blue dot line in Figure 11. The subskill *perspective taking* appears more difficult to demonstrate than does self-management.

Self-Awareness: Overall Distribution of Items across Persons

The set of items taps into a wide range of proficiencies, with individual items well distributed throughout the response space. The coding levels are reasonably well separated, although the slightly different difficulty demand of the two subskills complicates distribution. This difference in information derived from the subskills, compared to the overarching construct, justifies the attribution of descriptive scoring statements for four categories of proficiency for each of the subskills, and three for the overarching SA construct. The unidimensional solution that treats all items as contributing only to the overarching SA construct is shown in Figure 11.

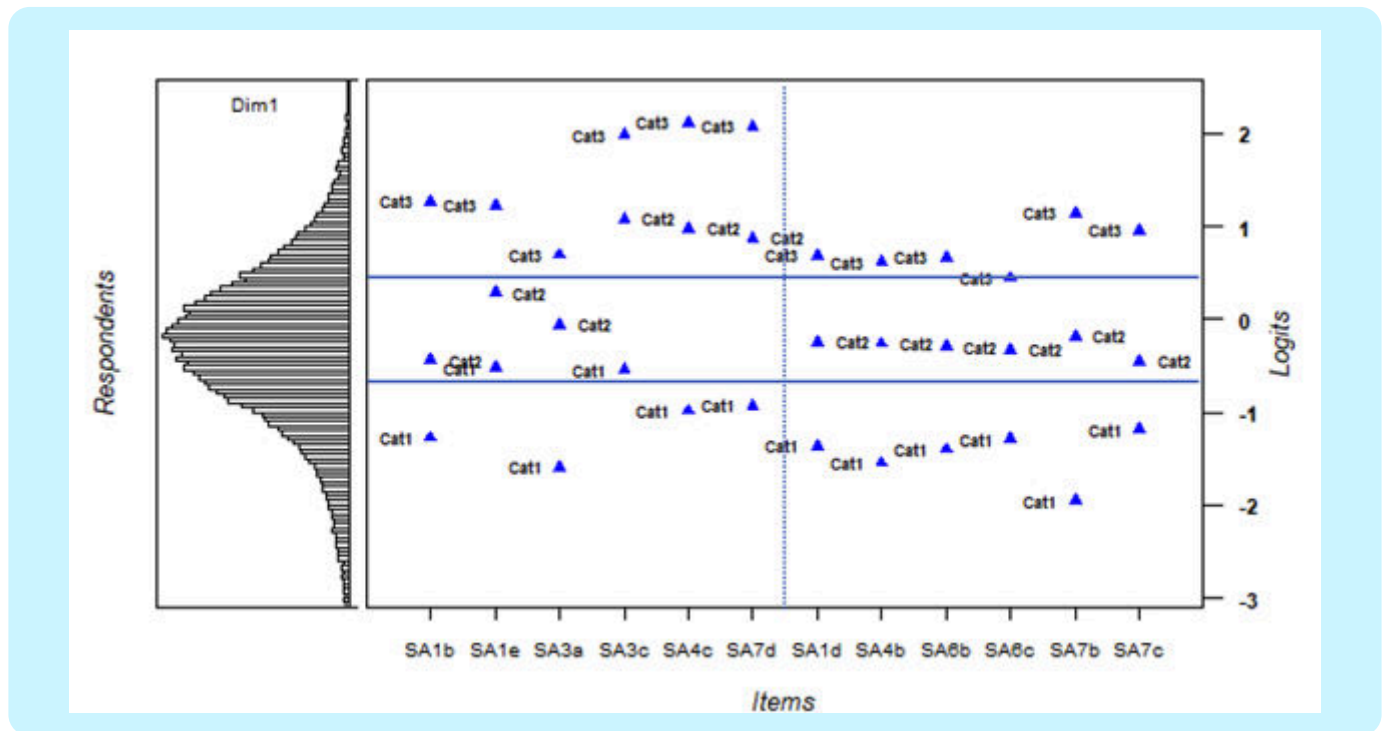


Figure 11: Person-Ability Map for Self-Awareness Scale (unidimensional scale)

Based on analyses of items in terms of their logit scores and locations relative to

Self-Awareness Proficiencies of Adolescents

Table 19 presents the descriptive proficiency statements for the overarching self-awareness scale as well as the two subskills, self-management and perspective taking. These descriptors are based on analysis of levels of quality of the responses as coded into category scores, and on how these are located in the person-map space (Figure 11).

Table 19: Descriptive Proficiency Statements for Self-Awareness

Construct	Beginning Adolescent is...	Emerging Adolescent is...	Consolidating Adolescent is...
Self-management: This subskill targets an individual's ability to recognize and express emotions, to assess self, to reflect, and to manage emotions.	Unable to regulate negative emotions or responses	Able to control self in a negative or stressful situation through repression of emotion or avoidance	

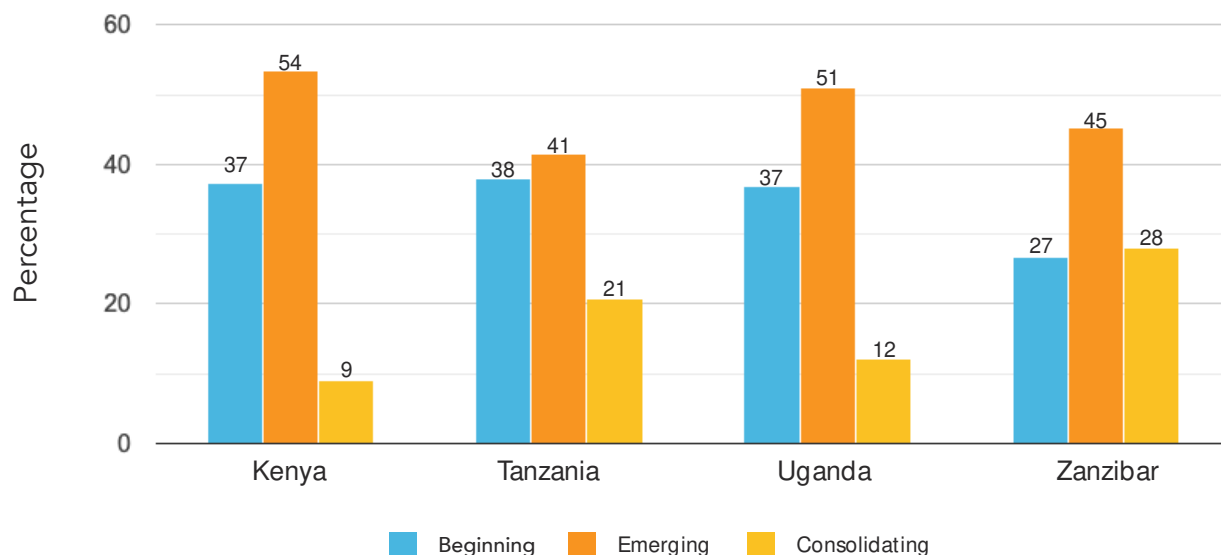


Figure 12: Self-Awareness Proficiency Levels by Jurisdiction

More information about adolescents' SA can be elicited from the subskills data. The two subskills, *self-management* and *perspective taking*, vary in terms of how difficult they are to demonstrate. In this population, adolescents are more able to control their reactions to difficult circumstances than they are able to recognise the impact of the same situations on others.

Self-Management Proficiency Levels

Overall, most (51%) of the adolescents were able to demonstrate self-control in a negative or stressful situation through repression of emotions, or through avoidance. They were less able to respond adaptively when presented with situations in which they might be directly confronted or attacked (Emerging). About 26% of the adolescents are unable to regulate negative emotions or responses (Beginning).

Self-Management Proficiencies by Jurisdiction

The distributions of adolescents within each of the four jurisdictions across the proficiency levels are shown in Figure 14. As can be seen, most adolescents in all four jurisdictions perform within the Consolidating range. There is a slight skew in the distribution of the Zanzibar adolescents, with fewer than expected at the lowest level, and more than expected at the higher levels.

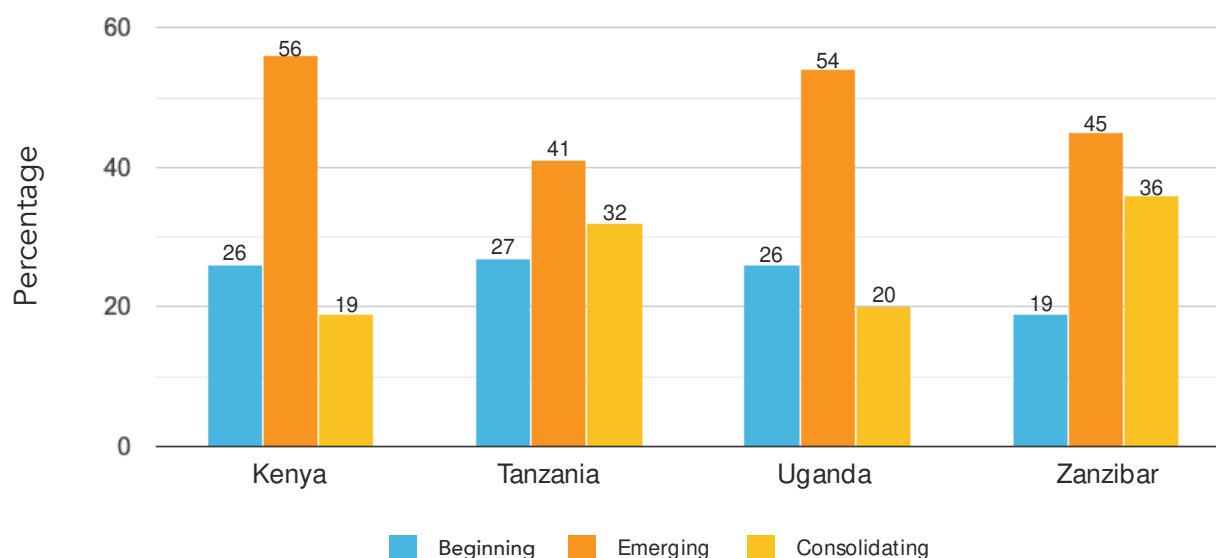


Figure 14: Self-Management Proficiency Levels by Jurisdiction

Self-Management Proficiencies by Selected Characteristics

Gender had no impact on *self-management*; in other words, males and females performed similarly to each other. Similarly, there are no associations between disability status of the adolescents and *self-management*. Information on age and education status is provided, since these two factors appear to be associated with performance levels.

Table 20: Self-Management Proficiency Levels of Adolescents by Selected Characteristics

Age has an influence on the demonstrated proficiencies of adolescents. Older adolescents demonstrate higher proficiencies compared to the younger adolescents. For instance, 26.1% of the adolescents from 15 to 17 years of age compared to 20% of the adolescents aged 13 to 14 years, are sufficiently self-aware and confident to respond adaptively even when directly confronted or attacked (Consolidating). At Beginning level, 22.7% of adolescents from 15 to 17 years of age compared to 29.9% of the adolescents aged 13 to 14 years, are unable to regulate negative emotions or responses.

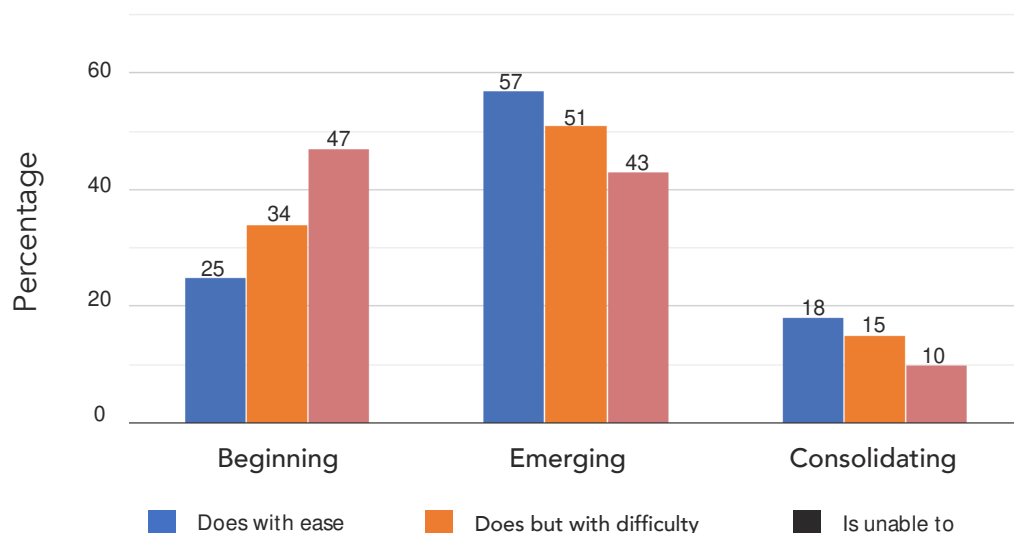
Education level is also associated with increasing proficiencies. More educated adolescents demonstrated higher proficiencies compared to the less educated adolescents. For instance, 34.5% of the adolescents who have reached the secondary level of education compared to 18.7% of those who have reached the primary level of education, are sufficiently self-aware and confident to respond adaptively even when directly confronted or attacked (Consolidating). At Beginning, 15.8% of the adolescents with a secondary level of education compared to 29.8% of the adolescents with a primary level of education are unable to regulate negative emotions or responses.

Association between Self-Management and Basic Literacy

The distribution of the adolescents' *self-management* proficiencies by their basic literacy proficiencies shows some meaningful associations (Figure 15). Adolescents who are 'fluent' readers tended to demonstrate higher *self-management* proficiencies compared to those who are 'not fluent' readers. For instance, 18.1% of the adolescents who are fluent readers, compared to 11.1% of those who are non-fluent readers, are sufficiently self-aware and confident to respond adaptively

Association between Self-Management and Digital Literacy

The distribution of the adolescents' *self-management* proficiencies by their digital literacy presents some meaningful associations (Figure 16). Adolescents who are competent in digital literacy tend to demonstrate higher *self-management* proficiencies compared to their less digitally literate counterparts. For instance, 18.3% of the adolescents who are able to use technology with ease, compared to 9.7% of the adolescents who are not able to use technology, are sufficiently self-aware and confident to respond adaptively even when directly confronted or attacked (Consolidating). At Beginning, 24.7% of the adolescents who are able to use technology with ease, compared to 47% of the adolescents who are not able to use technology, are unable to regulate negative emotions or responses.



Perspective Taking Proficiencies by Jurisdiction

The distributions across jurisdictions are comparatively similar to those for *self-management*. The lower proportion of adolescents performing at the highest level is a clear indication of the greater complexity of this skill, which perhaps requires more experience or maturation.

Figure 18: Perspective Taking Proficiencies of Adolescents by Digital Literacy Competence

Perspective Taking Proficiencies by Selected Characteristics

Gender had no impact on problem solving; in other words, males and females performed similarly to each other. Similarly, there are no associations between disability status of the adolescents and perspective taking. Information on age and education status is provided, since these two factors appear to be associated with performance levels.

Age has an influence on the demonstrated proficiencies of adolescents. Older adolescents demonstrate higher proficiencies compared to younger adolescents. For instance, 6.6% of the adolescents from 15 to 17 years of age compared to 3.9% of the adolescents aged 13 to 14 years, are aware that others act on the basis of multiple factors, both personal and communal (Proficient). On Emerging, 25.1% of adolescents from 15 to 17 years of age compared to 35.2% of the adolescents aged 13 to 14 years, are aware of others’ perspectives only in relation to oneself.

Education level is also associated with increasing proficiencies. More educated adolescents demonstrated higher proficiencies compared to the less educated adolescents. For instance, 9.8% of the adolescents who have reached secondary level of education compared to 3.5% of those who have reached primary level of education, are aware that others act on the basis of multiple factors, both personal and community (Proficient). On Emerging, 16.8% of the adolescents with a secondary level of education compared to 34.8% of the adolescents with a primary level of education, are aware of others’ perspectives only in relation to oneself.

Association between Perspective Taking and Basic Literacy

The distribution of the adolescents’ *perspective taking* proficiencies by their basic literacy presents some meaningful associations (Figure 19). Adolescents who are ‘fluent’ readers tended to demonstrate higher *perspective taking* proficiencies compared to those who are ‘not fluent’ readers.



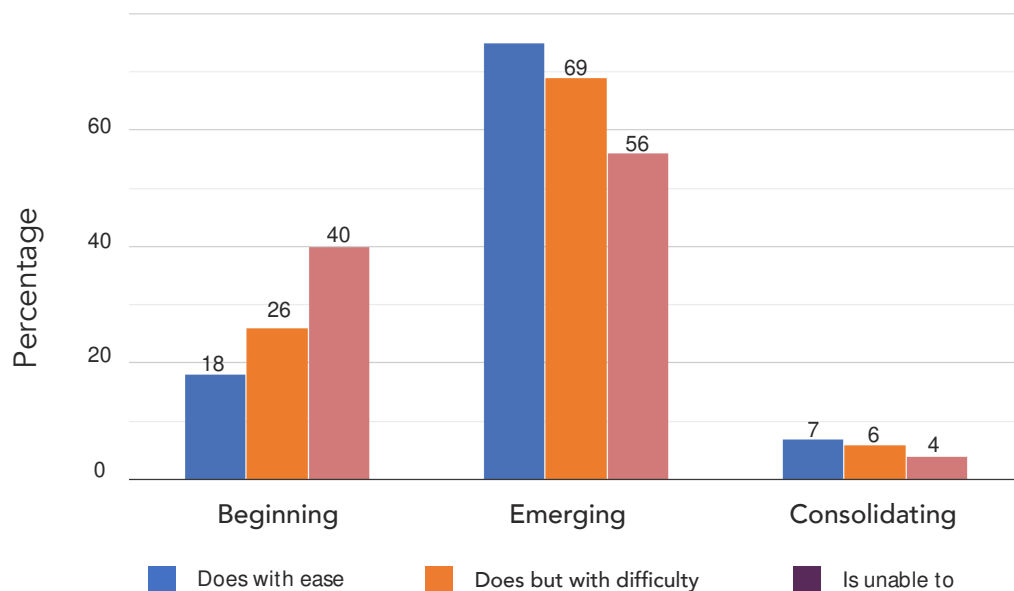


Figure 20: Perspective Taking Proficiencies of Adolescents by Digital Literacy Competence

The Measurement

The self-awareness tool consists of five tasks, which together generate twelve items. A task consists of a brief description of a situation, with items targeting different aspects of an adolescent's self-awareness proficiency. The five tasks follow slightly different patterns. The items assess the adolescent's self-awareness through two subskills, *self-management* and *perspective taking*.

The two scales demonstrate high reliability, and each contribute robustly to the overarching skill. Although the association between the two subskills is strong, *perspective taking* appears

This section describes that part of the ALiVE tool ('the tool') used to gather data on the respect (RT) proficiencies of the adolescents.

The RT assessment consists of four tasks, with a set of 10 items. Each task includes a brief description of a situation, with items targeting different aspects of this situation to serve as a sample of the concept of respect in terms of regard for others. Respect is seen as a value. All four tasks follow the same pattern, with their items targeting a 'step-by-step' approach to respect. The items assess the adolescent's regard for others—the awareness not to hurt another person physically, emotionally, spiritually, or psychologically. The tasks are numbered 1, 2, 3, and 6 (a numbering convention derived from the development of the Respect tool which included six tasks in field testing). The final tool provides 10 data points from the adolescent's completion of all four tasks, each with its items (Table 22).

Table 22: Tasks and Items Contributing to the Respect Scale

Constructs	Items	#
Respect – Regard for others	RT1a, RT1b, RT1d, RT2a, RT2b, RT3a, RT3e, RT6a, RT6b, RT6c	10

Each task is read aloud to the adolescent. This is followed by asking questions, the answers to which







Psychometric Properties: Item Fit Statistics

This section presents information on the item-fit statistics estimated based on the Rasch partial credit model. These fit statistics and this spread provide evidence for construct and criterion validity.

Table 24: Item Fit Statistics for Respect

Year	Percentage of population aged 65 and over
1970	10.0
1971	11.5
1972	13.0
1973	14.5
1974	16.0
1975	17.5
1976	17.8
1977	18.0
1978	18.2
1979	18.4
1980	18.6
1981	18.8
1982	19.0
1983	19.2
1984	19.4
1985	19.6
1986	19.8
1987	20.0
1988	20.2
1989	20.4
1990	20.6
1991	20.8
1992	21.0
1993	21.2
1994	21.4
1995	21.6
1996	21.8
1997	22.0
1998	22.2
1999	22.4
2000	22.6
2001	22.8
2002	23.0
2003	23.2
2004	23.4
2005	23.6
2006	23.8
2007	24.0
2008	24.2
2009	24.4
2010	24.6
2011	24.8
2012	25.0
2013	25.2
2014	25.4
2015	25.6
2016	25.8
2017	26.0
2018	26.2
2019	26.4
2020	26.6

Respect: Item Spread and Coding of Responses

In order to evaluate how difficult the items were for the adolescents, the Rasch partial credit model was used. Figure 23 illustrates how the 10 items prompted adolescents' responses. The person-ability map based on the Rasch model provides a look at how well items are spread out to define increasing proficiencies, and whether the items are separated enough to measure the respondents' abilities.

The person-ability map shows that the coding of responses from low to higher levels accurately represents increasing levels of respect for others. In other words, Cat1 (the lowest coded response) items appear below Cat2 (the highest coded response). This finding validates the approach to item design, which allowed for clearly identifiable different levels of responses and their coding.

Respect: Overall Distribution of Items across Persons

The set of items taps into a wide range of proficiencies, with individual items well distributed throughout the response space. The coding levels are reasonably well separated, to justify the attribution of descriptive scoring statements for four levels of the RT scale.

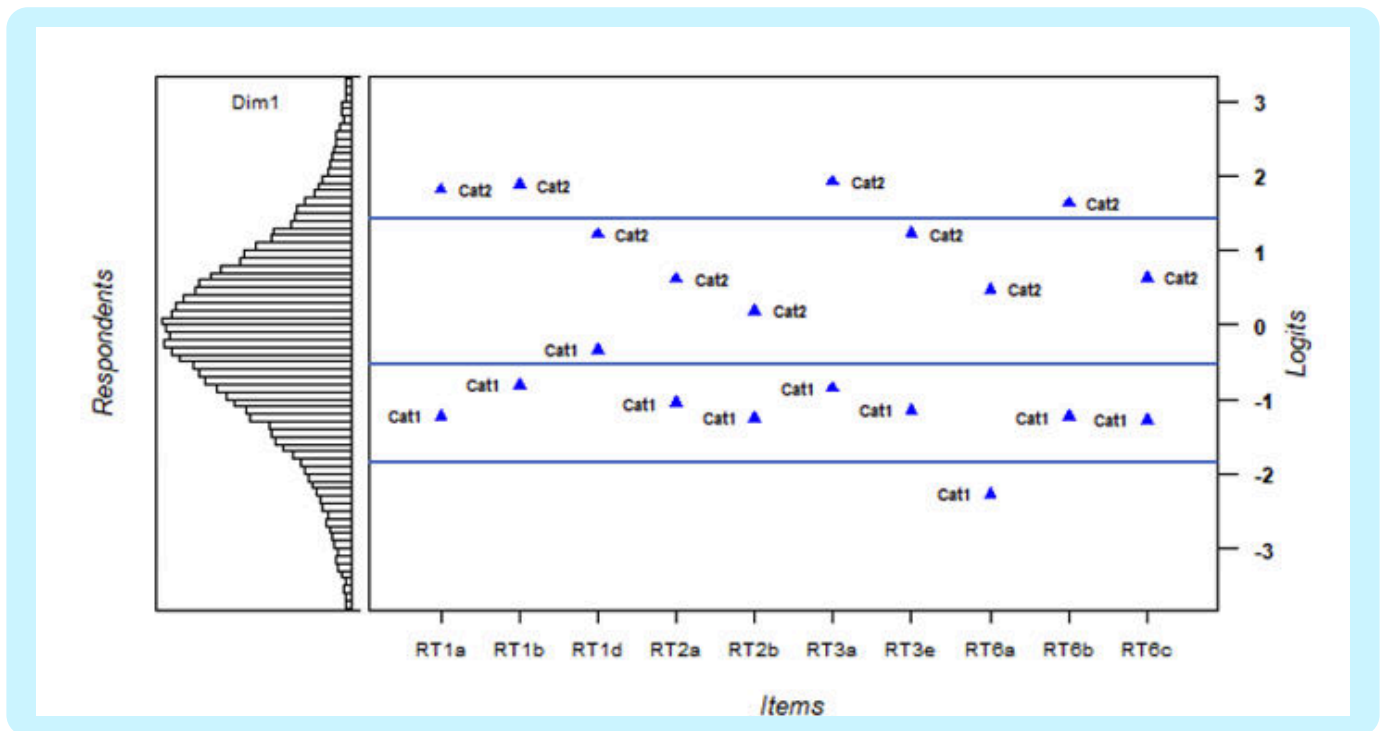


Figure 22: Person-Ability Map for Respect Scale

Based on the analyses of items in terms of their logit scores and locations relative to each other, descriptive categories of performance were determined as follows:
(Lowest thru -2.20 logit = Emerging); (-2.19 thru -0.500 logit = Consolidating);

RESPECT PROFICIENCIES OF ADOLESCENTS

Descriptive Proficiency Statements for Respect

The descriptors presented in Table 25 are based on analysis of levels of quality of the responses as coded into category scores, and on how these are located in the person-map space (Figure 23).

Construct	Beginning Adolescent is...	Emerging Adolescent is...	Consolidating Adolescent is...	Proficient Adolescent is...
Respect	Unable to respond in a relevant way.	Aware of infringement of rights, or of bad behaviour by one person towards another but does not 'call it out'.	Able to interpret bad behaviour as lack of respect for others or self, and may take conciliatory steps to resolve situations.	Aware of links between respect for property and respect for person, and will act in a respectful way towards others and in defence of others and self.

Respect Proficiencies by Jurisdiction

The distributions of adolescents within each of the four jurisdictions across the proficiency levels are shown in Figure 24. As can be seen, most adolescents in all four jurisdictions perform within the Proficient range: *able to interpret bad behaviour as lack of respect for others or self, and may take conciliatory steps to resolve situations*. There is a slight skew in the distribution of the Zanzibar adolescents, with more than expected at the higher level.

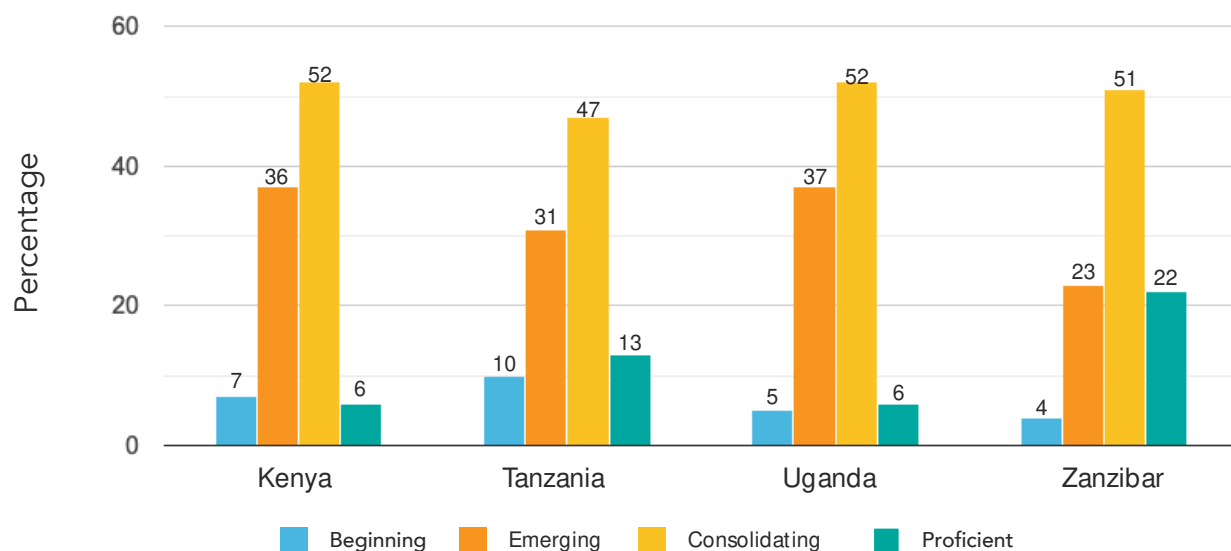


Figure 24: Respect proficiency levels by jurisdiction

Respect Proficiencies by Selected Characteristics

Age has an influence on the demonstrated proficiencies of adolescents. Older adolescents demonstrated higher expression for respect in terms of regard for others compared to the younger adolescents. For instance, 9.8% of the adolescents from 15 to 17 years of age compared to the 6.2% of the adolescents aged 13 to 14 years, are aware of links between respect for property and respect for person and will act in a respectful way towards others and in defence of others and self (Proficient). On Consolidating, 30.5% of adolescents from 15 to 17 years of age compared to 38.5% of the adolescents aged 13 to 14 years, are aware of infringement of rights, or of bad behaviour by one person towards another, but will not 'call it out'.

The education level is also associated with increasing proficiencies. More educated adolescents demonstrated higher expression of respect in terms of regard compared to the less educated adolescents. For instance, 13.7% of the adolescents who have reached the secondary level of education compared to 5.8% of those who have reached the primary level of education, are aware of links between respect for property and respect for person, and will act in a respectful way towards others and in defence of others and self. On Emerging, 2.8% of the adolescents with a secondary level of education compared to 8.6% of the adolescents with a primary level of education are unable to respond in a relevant way.

Association between Respect and Basic Literacy

The distribution of the adolescents' expression of respect proficiencies by their basic literacy proficiencies shows some meaningful associations (Figure 25). Adolescents who are 'fluent' readers tended to demonstrate higher expression of respect compared to those who are 'not fluent' readers. For instance, 59.3% of the adolescents who are fluent readers, compared to 45.6% of those who are non-fluent readers, are able to interpret bad behaviour as lack of respect for others or self, and

Association between Respect and Digital Literacy

The distribution of the adolescents' expression of respect proficiencies by their digital literacy presents some meaningful associations (Figure 26). Adolescents who are competent in digital literacy tend to demonstrate higher expression of respect compared to their less digitally literate counterparts. For instance, 59.8% of the adolescents who are able to use technology with ease, compared to 42.4% of the adolescents who are not able to use technology, are able to interpret bad behaviour as lack of respect for others or self, and may take conciliatory steps to resolve situations (Proficient). On Emerging, 2.3% of the adolescents who are able to use technology with ease, compared to 11.9% of the adolescents who are not able to use technology, are unable to respond in a relevant way.

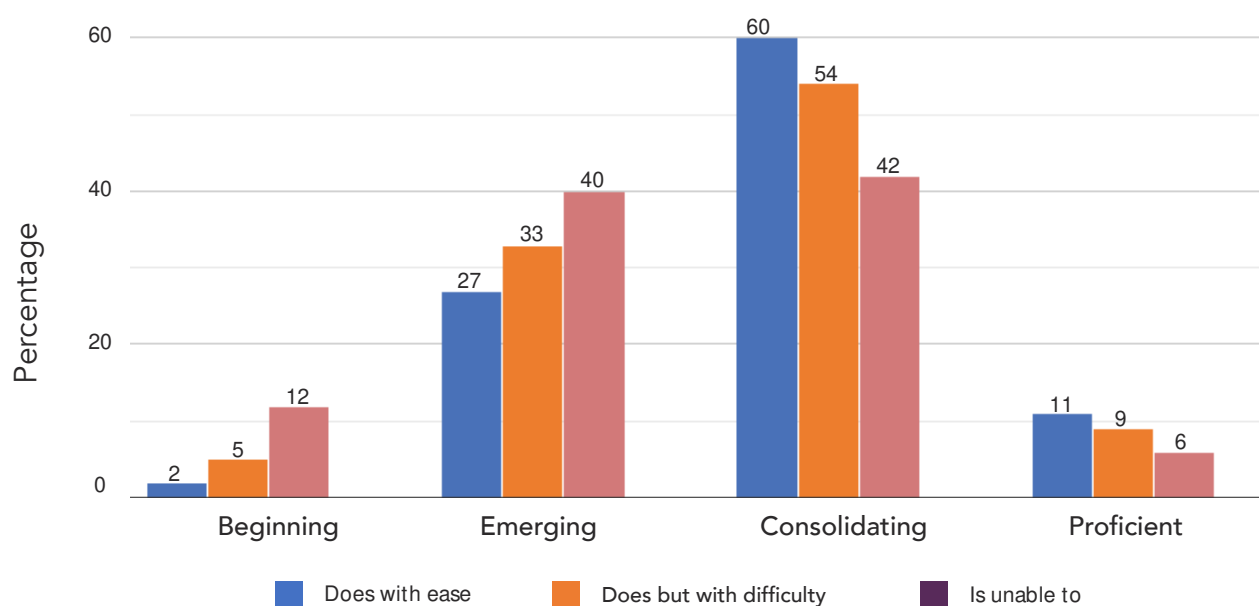


Figure 26: Respect Proficiencies of Adolescents by Digital Literacy Competence



Summary of Respect

The Measurement

The respect tool consists of four tasks, which together generate ten items. A task consists of a brief description of a situation, with items targeting slightly different aspects of an adolescent's respect in terms of regard for others. This regard concerns being aware of the rights of others and self, and therefore the awareness not to hurt another person physically, emotionally, spiritually, or psychologically.

The respect scale demonstrates high reliability in which each item contributes robustly to the overarching dimension. This also confirms the use of the unidimensional model in exploring adolescents' proficiencies in this aspect of respect—a reasonable approach.

The Results

The assessment tool is effective for differentiating between adolescents in terms of their respect for others. Each of the items contributes meaningfully to the overarching dimension: regard for others. The respect tool can therefore capture indications of respect from very low levels to higher levels.

The results indicate that most adolescents are able to interpret bad behaviour as a lack of respect for others, and may take conciliatory steps to resolve situations, but only a few of them can act in a respectful way towards others and in defence of others and self in threatening situations.

PSYCHOMETRIC PROPERTIES

Based on the data collected, the items are hypothesised to inform each of the three subskills—*communication*, *negotiation*, and *working together*—and contribute to their scales in an expected way. For each subskill, description about distribution of items and their values is provided, followed by information that shows how each item contributes to its hypothesised scale. All items contribute appropriately to their subskills.

Subskill: Communication

This subskill consists of three items: CT11, CT41, and CT61. *This subskill targets an individual's ability to listen (receptive) and speak (expressive).*

Adolescents' observable behaviours as defined by the coding rubrics across the performance levels are illustrated. The distributions are shown by gender, age, and education status.

Table 28: Communication – Item Responses by Gender, Age, and Education Status

Subskill: Working Together

This subskill is constituted of two items: CT13, CT63. This subskill targets an individual’s ability to work together with others as they plan the activities i.e., listing the materials needed as well as participate in performing the tasks.

Table 30: Working Together – Item Responses by Gender, Age, and Education Status

PSYCHOMETRIC PROPERTIES: ITEM FIT STATISTICS

This section presents information on the item fit statistics for the collaboration construct estimated based on the Rasch partial credit model. These fit statistics and this spread provide evidence for construct and criterion validity.

Table 32: Item Fit Statistics for Collaboration



Collaboration: Item Spread and Coding of Responses

The Rasch partial credit model was used to evaluate how difficult the three tasks were for the adolescents, and whether one subskill is more difficult to demonstrate than the other. Figure 28 illustrates how the three tasks and 8 items were experienced by the adolescents. The figure shows that the coding of responses from low to higher performance levels accurately represents increasing levels of proficiency. In other words, Cat1 (the lowest level of coded response) items appear below Cat2 and Cat3 (the highest level of coded response), which indicates that the underlying hypotheses about successively more difficult performance are confirmed by the data. This finding validates the approach to item design, which allowed for clearly identifiable different levels of responses and their coding.

Collaboration: Relative Difficulty of Subskills

In order to examine whether both subskills are similarly easy or difficult, items contributing to each of these follow each other, that is, communication (items CT11 to CT61), negotiation (items CT12 to CT62), and working together (items CT13 to CT63), as shown in Figure 28. The subskills contribute in a similar pattern to the range of proficiencies.

Collaboration: Overall Distribution of Items across Persons

The set of items taps into a wide range of proficiencies, with individual items well distributed throughout the response space. The performance coding levels are reasonably well separated in

COLLABORATION PROFICIENCIES OF ADOLESCENTS

Descriptive Proficiency Statements for Collaboration

Table 33 presents the descriptive proficiency statements for the overarching collaboration scale. These descriptors are based on analysis of levels of quality of the responses as coded into category scores, and on how these are located in the person-map space (Figure 28).

Construct	Beginning Adolescent is...	Emerging Adolescent is...	Consolidating Adolescent is...	Proficient Adolescent is...
Collaboration	Does not engage either by being attentive to discussion, speaking, or through action	Is attentive to the discussion and may query the views of others, but does not contribute in words or actions	Collaborates through speaking and being attentive in discussions, and engaging actively in performance tasks	Collaborates through oa

Collaboration Proficiencies by Jurisdiction

The distributions of adolescents within each of the four jurisdictions across the proficiency levels are shown in Figure 30. As can be seen, most adolescents in all four jurisdictions perform within the Consolidating range. There is a slight skew in the distribution of the Uganda adolescents, with fewer than expected at the highest level, and more than expected at Consolidating (attentive to the discussions and may query the views of others).

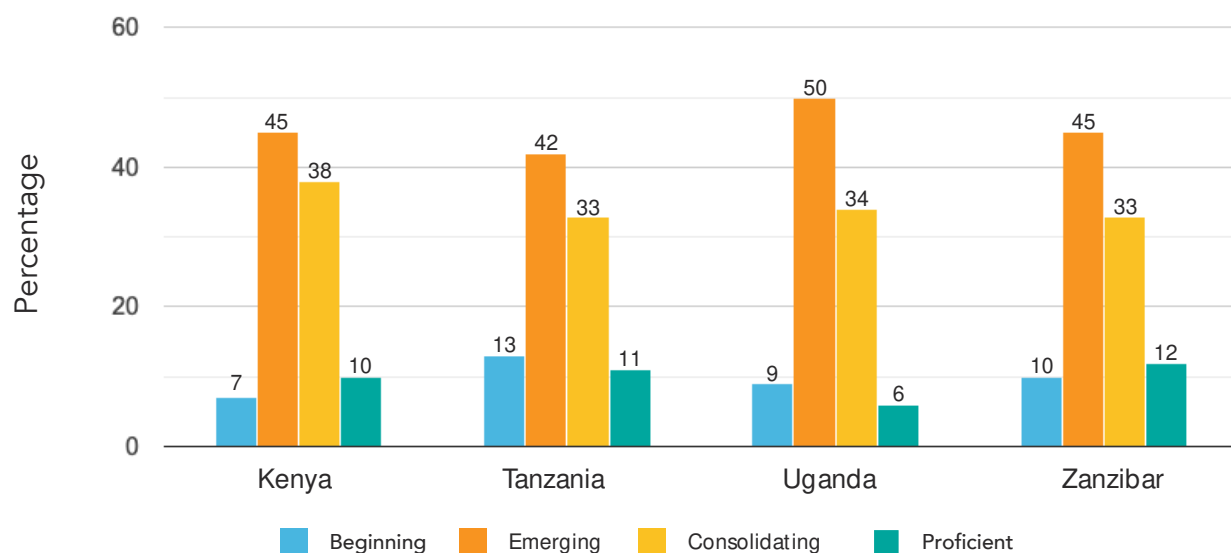


Figure 30: Collaboration proficiencies of adolescents

Collaboration Proficiencies by Selected Characteristics

Adolescents' proficiency levels by their gender, age, education, and disability status are provided in this section.

Table 34: Collaboration Proficiency Levels of Adolescents by Selected Characteristics

Age has an influence on the demonstrated proficiencies of adolescents. Older adolescents demonstrated higher proficiencies compared to the younger adolescents. For instance, 13.3% of the adolescents from 15 to 17 years of age compared to 6.4% of the adolescents aged 13 to 14 years, collaborated through taking positions and contributing ideas, prompting others, and being attentive to the input of others (Proficient). On Emerging, 7.4% of adolescents from 15 to 17 years of age compared to 11.7% of the adolescents aged 13 to 14 years, did not engage either by being attentive to discussion, speaking, or through action.

Education level is also associated with increasing proficiencies. More educated adolescents demonstrated higher proficiencies compared to the less educated adolescents. For instance, 41.4% of the adolescents who have reached the secondary level of education compared to 33.5% of those who have reached the primary level of education, collaborated through speaking and being attentive in discussions, and engaging actively in performance tasks (Proficient). On Emerging, 6.0% of the adolescents with a secondary level of education compared to 10.8% of the adolescents with a primary level of education, did not engage either by being attentive to discussion, speaking, or through action.

Association between Collaboration and Basic Literacy

The distribution of the adolescents' collaboration proficiencies by their basic literacy proficiencies shows some meaningful associations (Figure 31). Adolescents who are 'fluent' readers tended to demonstrate higher collaboration proficiencies compared to those who are 'not fluent' readers. For instance, 14.4% of the adolescents who are fluent readers, compared to 6.9% of those who are non-fluent readers, collaborated through taking positions and contributing ideas, prompting

Association between Collaboration and Digital Literacy

The distribution of the adolescents' collaboration proficiencies by their digital literacy proficiencies shows some meaningful associations (Figure 32). Adolescents who are competent in digital literacy tend to demonstrate higher collaboration proficiencies compared to their less digitally literate counterparts. For instance, 41.8% of the adolescents who can use technology with ease, compared to the 27.4% of the adolescents who are unable to use technology, collaborated through speaking and being attentive in discussions, as well as engaging actively in performance tasks (Proficient). On Emerging, 5.8% of the adolescents who are able to use technology with ease, compared to 13.9% of the adolescents who are not able to use technology, did not engage either by being attentive to discussion, speaking, or through action.

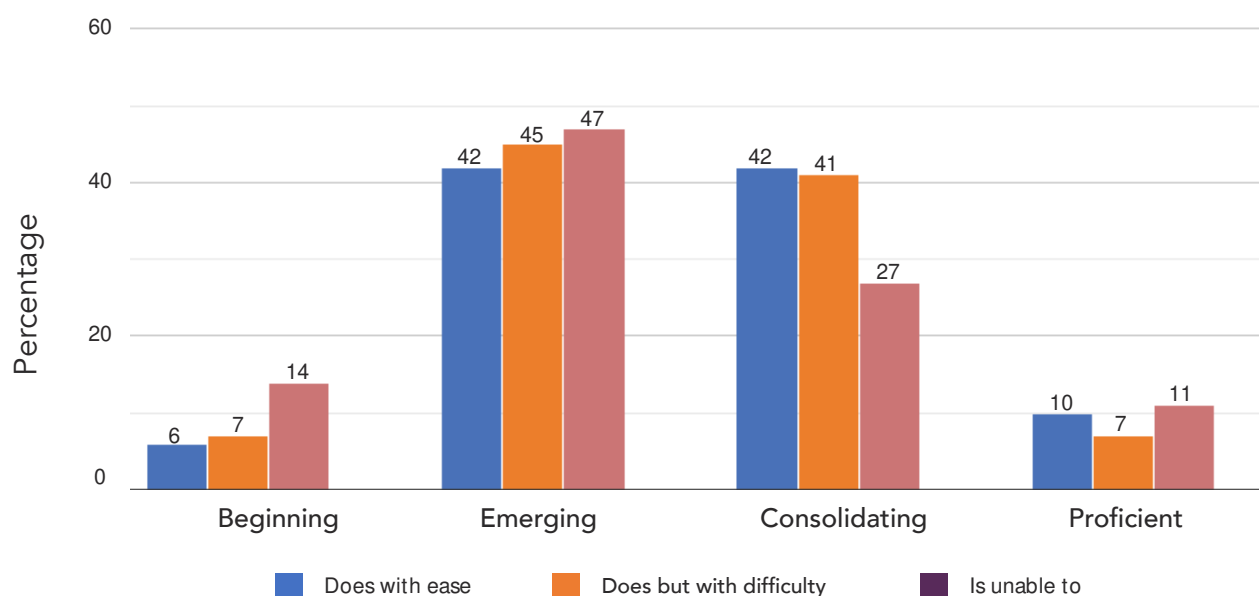


Figure 32: Collaboration Proficiencies of Adolescents by Digital Literacy Competence



Summary Of Collaboration

The Measurement

The collaboration tool comprises three tasks, which together contribute eight items. A task comprises a brief description of a situation, with each item targeting a different aspect of an adolescent's collaboration proficiency. All three tasks follow the same pattern, with their items targeting a 'step' approach to collaboration. The subskills assessed in collaboration are communication, negotiation, and working together.

The scales all demonstrate high reliability. All eight items also contribute robustly to the overarching skill of collaboration. Therefore, reporting results of the collaboration tool at the overarching construct is a reasonable approach.

The Results

The collaboration tool is effective for differentiating between adolescents in terms of their proficiencies. The tool can therefore capture indications of proficiency from very low levels to higher levels. The results provide information that could be used to begin the design of instructional programs to improve performance in each of the subskills of collaboration.

The results indicate that most adolescents are able to collaborate through speaking and being attentive in discussions as well as engaging actively in performance tasks. Only a few of them, however, can collaborate through taking positions and contributing ideas, prompting others, and being attentive to the input of others.

CONCLUSIONS AND IMPLICATIONS OF THE FINDINGS

ALiVE developed an assessment of three life skills and one value, creating a tool that gathered responses from adolescents to a variety of scenario-based and performance tasks. The open-ended responses of the adolescents were coded according to rubrics that allowed for evaluation of levels of quality in those responses. The coded data were then analysed according to their hypothesised contributions to overarching constructs, and in some cases to dimensions and subskills. The aim was to develop a measuring system that would generate information about what adolescents are able to do and how they perceive themselves and others around them in terms of self-awareness and respect. Scale reliabilities and person and item fit statistics calculated from the collected data support the validity of the assessment for its intended purpose. Given the comprehensive and systematic sampling, generalisability of the results can reasonably be claimed. The initiative demonstrates that robust and useful tools can be developed for use outside of the formal classroom space to generate data that is useful within that space.

The process of developing and using the assessment tool highlights several issues for consideration as East Africa continues to produce strategies and tools to collect data to be used as evidence of adolescent functioning across life skills and values. The results generated from adolescent responses to the assessment tool highlights an additional set of issues.

The development and use of the assessment tool was based on deep exploration of the constructs of interest, decision making about what aspects of these constructs could reasonably be measured, and a defined high-quality approach to the technical aspects of task creation and analysis of pilot and trial results to ensure robust scales. Future efforts to assess other skills, or to assess these same skills across other age groups, would be well advised to follow the same rigour of approach, with deep understanding of the actual constructs the foundation of decision making at the technical level.

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