RELI
Regional Education
Learning Initiative

Self-awareness

Collaboration

ASSESSMENT
OF LIFE SKILLS
AND VALUES
IN EAST
AFRICA - ALiVE

Problem-solving

Respect

UNDERSTANDING PROBLEM SOLVING IN THE UGANDAN CONTEXT: AN ETHNOGRAPHIC STUDY

A Report for the Assessment of Life Skills and Values in East Africa (ALiVE) Project

PROBLEM SOLVING - UGANDA

This report is a product of the Regional Education Learning Initiative (RELI). RELI, through the Values and Life Skills (VaLi) thematic group, aimed to collaborate with local leaders to cocreate and develop contextualized assessments in Kenya, Tanzania, and Uganda. The RELI project, Assessment of Life Skills and Values in East Africa (ALiVE), has three main objectives: (a) develop contextualized, open-source tools for the assessment of life skills and values in the East African context; (b) generate large-scale data on life skills and values across the three countries; and (c) use this data to inform change and build capacities within the VaLi-ALiVE member organizations.

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1   OVERVIEW OF THE ALiVE PROJECT

1.1   Brief Description of the Project

The Regional Education Learning Initiative (RELI), through the Values and Life Skills (VaLi) thematic group, intends to collaborate with local leaders to cocreate and develop contextualized assessments in Kenya, Tanzania, and Uganda. The initiative, Assessment of Life Skills and Values in East Africa (ALiVE), has three objectives: gathering information (and knowledge), building community, and advocacy. These three broad objectives mirror RELI's three pillars: being a hub for knowledge, transforming member organizations, and influencing policy. Over three years (2020–2023), ALiVE will: (a) develop contextualized, open-source tools to assess life skills and values in the East African context; (b) generate large-scale data on life skills and values across the three countries; and (c) use this data to inform change and build capacities within the VaLi-ALiVE member organizations. These organizations will advocate for the three national education systems to focus on and produce these competencies, to inform regional policy throughout the East African Community, and to inform global thinking on how to measure life skills and values as *relevant and effective* learning outcomes.

ALiVE will be a context-relevant, summative assessment. The assessment will target adolescent boys and girls from ages 13 through 17 years, both in school and out of school, focusing on three competencies and one value: *self-awareness, problem solving, collaboration,* and *respect*. Embracing the Sustainable Development Goals (SDG) spirit of *leaving no one behind*, the initiative will conduct the assessment at the household level. The aspiration is that this will be a simple and easy-to-use tool, making it feasible and affordable to conduct an assessment on a national scale.

The first phase in developing the contextualized assessment tools was to conduct ethnographic interviews across the three countries with three categories of informants: adolescents, parents, and key persons such as teachers, social workers, youth patrons or matrons, among others. The interviews were to gauge participant perceptions and understandings of the selected ALiVE competencies: *self-awareness, collaboration, problem solving,* and *respect.*

1.2   The General Objective of the Contextualisation Study

The study aimed to achieve a contextualised understanding of *problem solving* in Uganda to determine the skill structure and derive the best tools for a large-scale assessment of *problem solving* in the three countries.

1.3   Research Questions

The study sought to answer the following questions:

(i) How do adolescents, parents, and other key actors in Uganda define and understand *problem solving?*

(ii) How do the common definitions differ across the participants' categories (adolescents, parents, and key persons), genders, and locations?

(iii) Which subskills emerge from the common understanding of this skill, and how do they vary across the participants' categories, genders, and locations?

(iv) What are the common dispositions and values identified by the different categories of the participants based on gender and location?

(v) Which support systems and other factors help the adolescents develop *problem-solving* skills?

(vi) What are the common methods identified and used by the participants to assess *problem-solving* skills in adolescents?

2   METHODOLOGY

2.1   Study Design

Since the purpose of this study is to learn about and reflect on a certain social group's way of life and understanding, a qualitative approach and an ethnographic design was adopted to explore and collect participants' perceptions and understandings of the selected ALiVE competence in the local context of Uganda. Ethnography is a widely used research tradition in the social sciences. It can be defined as the study of social interactions, behaviours, and perceptions that occur within social groups, teams, organizations, and communities (Hammersley & Atkinson, 2007). Therefore, the ultimate goal of this tradition is to analyse and form a detailed understanding of the particularities of a given social group. That is why we considered this the most appropriate design for conducting the present study.

2.2   Study Sites

The study was conducted in 5 districts in Uganda, which were sampled based on their status as rural or urban, their economic activity (pastoralist, core-urban, agricultural), and their distance from Kampala. Two villages in each district were randomly sampled. Table 1 summarizes the five locations.

Table 1: Data Collection Regions, Sites, and Selection Criteria

CRITERIA	REGION AND DISTRICT
Core urban characteristics, low-income areas within the capital city	Region: Central District: Kampala
Core rural characteristics, agriculture-rich, and within 100 km from the capital city	Region: East District: Jinja

Core rural, agriculture-rich, 300–400 km from the capital city	Region: North District: Oyam
Core rural, pastoralist areas, 400–800 km from the capital city	Region: North (Karamoja) District: Moroto
With different characteristics from all mentioned above	Region: West District: Kikuube

2.3 Study Population

The study population consisted of adolescent boys and girls from 13 through 17 years of age (both in and out of school), parents, and key persons (people close to the adolescents such as teachers, social workers, youth patrons or matrons in religious communities, and others).

Given that the study was conducted during the COVID-19 pandemic period, researchers purposefully selected districts where RELI members were working, due to ease of contact, logistics, and observance of the COVID-19 health protocols.

2.4 Study Population, Sampling, and Sample

The study population consisted of adolescent boys and girls from 13 through 17 years of age (both in and out of school), parents, and key persons (people close to the adolescents such as teachers, social workers, youth patrons or matrons in religious communities, and others). Research assistants selected interview participants using systematic sampling based on a list of target participants per category in each village.

In each sampled village, researchers targeted at least 4 interviews with 2 adolescents of each gender (combining those in primary, secondary, vocational training centre, and out of school); 4 interviews with 2 parents of the sampled adolescents and 2 of non-sampled adolescents (while combining fathers and mothers); and 4 interviews with key persons (teachers, social workers, and others who consistently work with adolescents, from both genders). This resulted in a target of 24 participants per district for the one-on-one interviews. The sample totalled around 120 participants for the interviews. Given the prevailing challenges, however, the study reached a total of 120 participants in the interviews. The foregoing information is summarized in Table 2 below.

Table 2: Number of Participants Interviewed per Category and Site

District	Adolescents		Key persons		Parents		Total		
	Boys	Girls	Men	Women	Men	Women	Men	Women	Overall
Jinja	04	04	04	04	03	05	11	13	24
Kikuube	03	05	05	03	00	08	08	16	24
Moroto	04	04	04	04	03	05	11	13	24
Kampala	04	04	03	05	04	04	11	13	24
Oyam	04	04	06	02	05	03	15	09	24

Total	19	21	22	18	15	25	56	64	120

Notably, out of 120 participants for the one-on-one interviews, only 95 (43 men and 52 women) were interviewed on *problem solving*.

In addition to the interviews, 20 focus group discussions (FGDs)—(10 FGDs for adolescents and 10 FGDs for parents)—were conducted. For the FGDs, 3 participants (adolescents or parents) were selected to join the other 4 who participated in the interviews. FGDs in each village ultimately consisted of 5 to 7 participants.

2.5   Data Collection Methods and Tools

- **Interviews**: One-on-one interviews with adolescents, parents, and key persons were conducted to determine their understanding of *problem-solving* skills in Uganda's context. Researchers used an interview guide developed prior to data collection.

- **Focus Group Discussion (FGD)**: Discussions with adolescents and parents were conducted to cultivate a deeper understanding of the issues that emerged from the interviews. Researchers developed and used specific FGD guides for each site and its interviews.

2.6   Training of Research Teams and Fieldwork

In each district, there was need for an experienced qualitative researcher to the take the lead in interviewing and for a research assistant to provide support in terms of logistics, recording, and note-taking. At least one of the researchers needed to be fluent in the language of the study location. To ensure the collection of quality data, a 2-day researcher-training session (covering 4 hours per day) was conducted via Zoom on October 19 and 21, 2020. The training emphasised the background and objectives of the ALiVE project, the research approach and methodology, data collection methods and tools, recording and note-taking techniques, ethical issues, and more.

Before going to the field, the research assistants were provided with resources to finalize preparatory work that included notifying local authorities, listing, and sampling, and notifying the sampled participants. Data collection was conducted in the 5 districts between November 2 and 6, 2020. The exercise lasted two days in each village. The first day was spent on the in-depth interviews, while the second day was reserved for the FGDs, which were conducted at a safe and central location within the village. Interviews and FGDs were audio-recorded and hand-written for backup and to ensure accuracy during translation or transcription.

2.7   Coding System and Data Analysis

A coding system was established to analyse the 95 interviews on *problem solving* following the method of thematic analysis. Thematic analysis is "a method for identifying, analysing and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 79).

The analysis was centrally conducted for all the interviews and FGDs from the three countries. For the analysis of the interviews, we established a coding system based on *contextual (descriptive) variables*, including (a) category of informants, (b) sex of the participants, (c) country, and (d) district. In *quantitative* terms, the contextual variables were analysed descriptively (in terms of frequency and percentage) using Microsoft Excel and Dedoose.

The coding system also considered *content variables* related to (e) definition and process described by the participants, (f) subskills, (g) dispositions and values, (h) behaviours, (i) related skills, (j) support systems and factors for enhancing *problem-solving* skills, and (k) methods for assessing the skill in adolescents. In *qualitative* terms as recommended by Gibbs (2018) and using the Dedoose program (version 8.3.41.), we performed an analysis of the subjects' understandings of *problem solving* as presented in the interviews, paying specific attention to elements of contextualisation in contrast with what has been found in the literature review.

These predetermined categories emerged from the analysis of five interviews (at least 1 from each category) conducted by nine research assistants to achieve an inter-rater reliability in the coding system. Apart from these predetermined categories, others emerged from the main topic of *problem solving*; this report thus addresses the local perspective of the skill structure. The analysis process involved the identification of patterns of similar ideas, concepts, or topics to establish the connection and integration of information with the theoretical foundation (Miles & Huberman, 1994) as well as a suggested indication or evidence for contextualisation. The codes were created following the criteria for qualitative evaluation: dependency, transferability, credibility, and verifiability (Duffy, 1987).

Furthermore, the *synthetic analysis* followed the three stages pointed out by Thomas and Harden (2008): the free "line-by-line" coding of the primary interviews, including sentences or paragraphs as the analysis unit, the organization of these "free codes" into related areas to construct "descriptive themes," and the development of "analytical themes" (p. 4). The analytical themes go beyond the findings of the primary interviews and generate additional concepts, understandings, or hypotheses. The analytical themes are then related to the recommendations for assessment, intervention, and policymaking to contextualise *problem-solving* skills in East Africa.

In addition, the researchers used the *triangulation* technique (Flick, 1992, 2004) to search, identify, select, evaluate, and summarise data from interviews, based on pre-defined criteria and emergent categories.

Finally, *data reduction* was applied through a mixed-method analysis: (a) the initial subgroup classification of the interviews is based on each participant's category (adolescents, parents, and key persons), sex, and district; and (2) data reduction involves techniques of extracting and coding data. These mixed-method analyses were carried out using the Dedoose program, which allows the analysis of the frequency of the codes in terms of the participants' demographic information and allows for the integration of qualitative and quantitative data. In this regard, three types of descriptive analysis were conducted: code co-occurrence, cross-tabulation of the code and participants' characteristics, and cross-tabulation of the code and 2 or more participants' characteristics.

Notably, for each of the quotations in the findings, we have included a code that helps in identifying the category of the participant. In each code, the first letter represents the country (Uganda), the second letter represents the category of participants (e.g., 'A' for adolescent, 'P' for parent, and 'K' for key person), and the number represents the number assigned to the participant.

2.8   Ethical Considerations

The research team upheld approaches that address ethical considerations in dealing with different categories of participants. These include obtaining informed consent, ensuring the confidentiality of information obtained from the participants, compensating the participants (both monetarily and non-monetarily), and ensuring voluntary participation. Precautions were taken to adhere to the COVID-19 guidelines issued by the Ministry of Health at that time, especially those of not exceeding 15 persons for every gathering, wearing masks, physical distancing, and the washing and sanitizing of hands.

3   FINDINGS

3.1   General Characteristics of the Participants

Overall, 95 participants (43 men and 52 women) were interviewed on problem-solving skills. Thirty-two (32) of these were adolescents (14 men and 18 women), 32 were parents (12 men and 20 women), and 31 were key persons (17 men and 14 women). Furthermore, the average ages for the participants were 15.3 years for adolescents (15.4 years for men and 15.1 years for women; SD=1.7); 41.2 years for parents (39.3 years for men and 42.3 years for women; SD=10.5); and 36.3 years for key persons (38.2 years for men and 33.9 years for women; SD=9.6).

3.2   Codes and Central Themes in Problem Solving

3.2.1 Definition and Process

The first category identified during the coding process is the contextualized definition of problem solving; it includes the definition in the local language and the process involved in

dealing with challenges. This theme concerns the codes and the analysis of the definitions of problem solving as provided by the participants.

As presented in the previous sections, 95 people including parents, teenagers, and key persons provided a definition of problem solving. They did so by either drawing on their understanding of the concept and personal experiences, or by offering examples of people who they believe show good problem-solving skills.

According to most participants, problem solving refers to "various ways of getting solutions to personal problems or problems of others" (U-A-01, U-A-09, U-A-10, U-A-11, U-K-01, U-K-03, U-K-15, U-K-18, U-P-03, U-P-16, U-P-18).[1] They consider finding solutions to problems to be the goal of problem solving. Indeed, to be able to solve a problem means to be able to eradicate or avert it (U-A-17, U-P-29, U-P-40). In their definitions, participants used the terms *problems* and *challenges* as synonymous with *problem solving*. Indeed, to the participants, finding solutions to problems also means being able to overcome challenging situations: "I know what the phrase means. It is the way I can overcome challenges" (U-K-38); "I think it is the way you handle issues affecting your area and how you find solutions to these problems" (U-P-05); or "It means finding ways to settle different challenges, for example family challenges, community challenges among others" (U-P-13).

Facing problems is another key aspect that emerged from the data analysis on the definition of *problem solving*. Facing problems involves aspects such as "preventing or avoiding problems" (U-A-03, U-K-38), "fighting problems" (U-P-40), and "stopping problems" (U-A-17). One participant said, "problem solving means to shield yourself from all problems" (U-A-23). Another participant explained, "Problem solving can be understood as preventing problems from home, school, and the community" (U-A-31).

Some participants also perceive problem solving in terms of resolving other people's conflicts. One of them stated, "I understand problem solving as solving conflicts amicably" (U-A-19). Another participant said, "Problem solving is when people fight, and a person comes and separates them" (U-A-20). Another one mentioned, "Is a way of managing a problem. When you get people fighting, you talk to them that, please don't do like that" (U-K-21). In the same vein, participants are also aware of the interpersonal conflicts that they might face. One of them said, "Problem solving is when maybe someone abuses you, and instead of fighting you, finds a way of stopping the fight from happening" (U-A-17).

> Problem solving is like, if you are moving on the way then someone wants to beat you then you told please, I don't want to fight with you, you know you are too big for me I am small, how can fight with a big person? That is where someone will leave you. (U-A-18)

To these participants, quarrels and misunderstandings are some of the most challenging problems adolescents face. Therefore, an adolescent who has problem-solving abilities is able to mediate and reconcile conflicting parties (U-A-16, U-P-32, U-P-21). A problem solver tries to understand what caused the conflict and restores harmony between both parties. Resolving such conflicts or problems calls for a problem solver with good relationship skills.

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[1] The first letter represents the country (Uganda). The second letter represents the category of participants (e.g., 'A' for adolescent, 'P' for parent, and 'K' for key person), and the number represents the number assigned to the participant.

Another important aspect that comes up in the definition of problem solving is "helping someone with a problem" (U-A-10, U-A-13, U-A-15, U-K-24). The participants view problem solving in terms of other people's problems rather than their own problems. In defining problem solving, they clearly show that it is not only about understanding their own problems, but also those of other people. Indeed, responses underscore the sense of helping the community as an important role of a problem solver. This is clear in the following excerpts: "By asking people to tell you about their problems and helping them to solve them" (U-A-10); "I listen to the problem, understand it and give my suggestions of how the problem could be solved" (U-A-24); "Problem solving is the solving of problems in a more organized way. It can also be understanding one and others' problems" (U-A-21); and "It is a way how a person can describe his or her problem to someone" (U-A-06).

In defining problem solving, it seemed obvious to some participants that one must first identify the problem and establish its root cause before addressing it, as highlighted here: "The term means identifying the problem first and then finding the solution" (U-P-09); "It is a way of finding a problem and starting to solve it. It refers to having a problem, and finding ways of getting a solution to the problem" (U-A-01). "It means finding ways to different problems. For example, in case of a problem, you look at both sides then you put down very many ideas to get a resolution" (U-P-11).

In summary, participants from Uganda define problem solving as the process of finding solutions to personal problems or the problems of others. To many participants, this is linked to overcoming challenging situations and resolving interpersonal conflicts. Furthermore, all codes relating to the definition were developed by analysing the responses of men and women, and all categories of participants (adolescents, parents, and key persons).

The analysis of interviews revealed several aspects involved in the process of problem solving, as seen in the following codes.

Table 3: Codes That Emerged as the Process of Problem Solving

CATEGORY: PROCESS OF PROBLEM SOLVING	PARTICIPANTS (SOURCES)		EXCERPTS[2]	
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
Identifying the problem	20	21.05	26	8.61
Knowing or Understanding the problem	38	40.00	65	21.52
Facing the problem	45	47.37	74	24.50
Finding solutions	72	75.79	144	47.68
Judgement	4	4.21	4	1.32
Sharing	52	54.74	86	28.48
Fear of God	8	8.42	11	3.64

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[2] The percentage of the excerpts per code was calculated based on the total number of excerpts that emerged from the theme of definition/process of problem solving. It is worth noting that the sum of all the percentages is not 100, since one excerpt could contain more than one of these codes.

Total	95[3]		303[4]	

Participants stated the steps that a problem solver takes to solve an existing problem, which include identifying the problem, knowing or understanding the problem, facing the problem, finding solutions, judgement, sharing, and fear of God. Some participants mentioned these steps in chronological order, while others just mentioned a few of them in no particular order. Figure 1 below shows the frequencies of excerpts in each code by gender and category.

Figure 1: Frequency of Excerpts That Include Identifying the Problem, Knowing or Understanding the Problem, Facing the Problem, Finding Solutions, Judgement, Sharing, and Fear of God, by Gender and Category
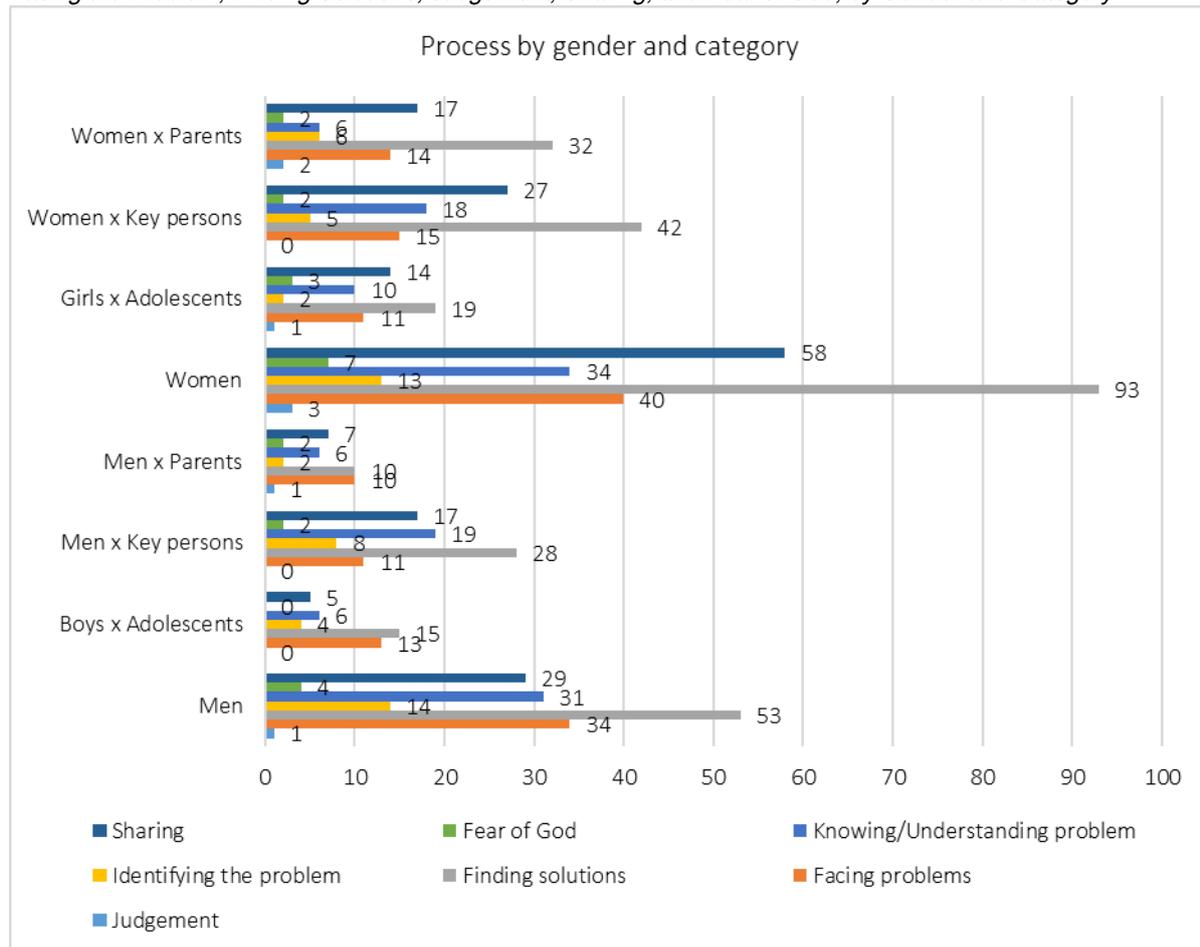
It can be observed in Figure 1 that finding solutions to problems is a very important step in the process of problem solving. It was mentioned by both men and women from all categories of participants. When we analyse the codes in this process with respect to the study sites (Figure 2 below), one can see that finding solutions is still the most common code in the process of problem solving.

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[3] This refers to the total number of participants who were interviewed on problem solving. It is not the sum of the observed frequencies, since more than one code in the theme could emerge from the same participant.

[4] This refers to the total number of excerpts that emerged in the definition/process of problem solving. It is not the sum of observed frequencies, since one excerpt could contain more than one of these codes.

Figure 2: Frequency of Excerpts That Include Identifying the Problem, Knowing or Understanding the Problem, Facing the Problem, Finding Solutions, Judgement, Sharing, and Fear of God, by District
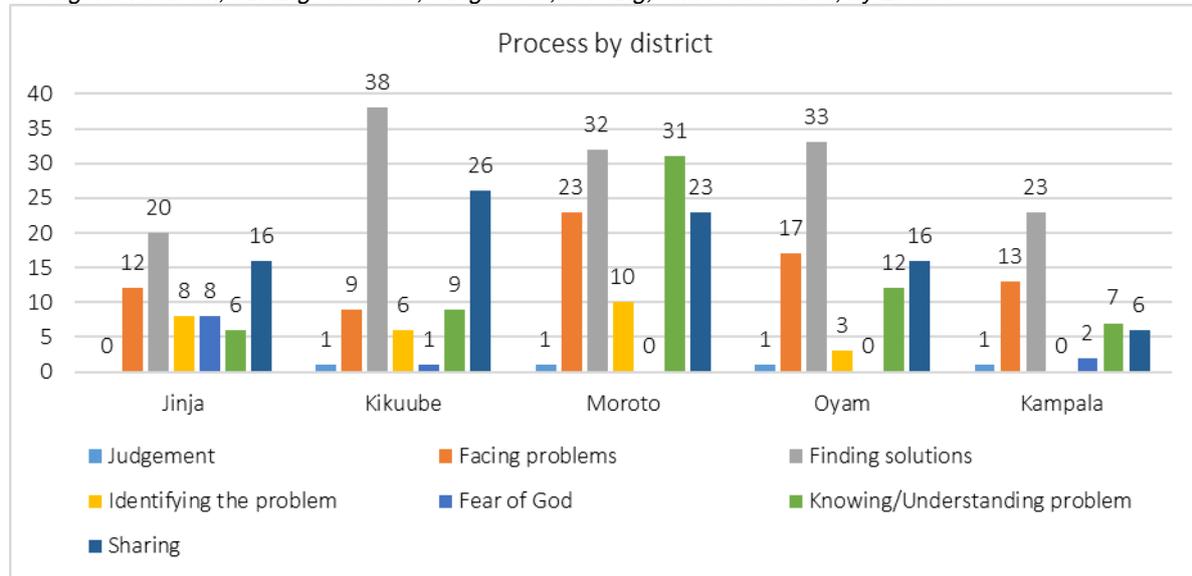
Many participants mentioned that identifying the problem is the first step in the problem-solving process, as illustrated in the excerpt below:

> Of course, for you to solve the problems you have to get the problem first so that you get the solution. Actually, for you to get the solution you have to get the problem. Now in the problem solving I may have a problem then I will have to ask myself how should I overcome this problem? I will have to look for the solutions to this problem here. (U-P-19)

This perception also emerged in the focus group discussion where adolescents stated that the first step is identifying the problem: "First identifying the problem that you're facing and then you solve it" (U-A-FGD-07). Other participants also mentioned identifying the problem, but they did not necessarily specify whether it is the first step in the process of problem solving. To them, it seems obvious that identification of the problem is the first step in the problem-solving process: "We have a family meeting then everyone is told his/her faults" (U-A-17); "Firstly, you befriend that person. Then you identify the problem and lastly discuss the problem with them to find a solution" (U-P-10).

Next, the participants mentioned that *knowing or understanding* the root cause of the problem, rather than its symptoms, is key to effectively addressing it. The quotations below clearly show that only if someone only clearly identifies and examines the "gist" of the problem, will it be

possible to find a viable solution: "I will ask them how the problems started, I will call them all together" (U-A-22).

> It's just like understanding. You can solve a problem by just understanding somebody. Because if a problem comes, maybe somebody can . . . maybe if somebody comes to steal, can understand that person that maybe he had a problem of hunger that makes that person to come and steal. You just understand. You should tell that person to stop doing that [rather] than fighting, quarrelling. (U-K-23)

> You have found the children fighting, how should you solve that problem of those children who are fighting? You will have to get them, sit them down, and then find out the root cause of their fight then from there you will develop now a solution to this fight of these children here . . . who was on wrong and who was not on wrong. So when you find out the root cause, you are able to find out the solution to the problem here. (U-P-19)

After identifying and clearly understanding the problem and its cause, one has to confront it, as one participant expressed, "After getting the knowledge, face the problem and manage it" (U-P-36). When facing the problem, the person starts thinking about and identifying the possible options for solving it: "A person who can first remain calm and quiet and starts to identify means of solving the problems and even solves them very well alone" (U-A-23).

In trying to deal with the problem, many participants share their problems with others. To them, sharing means talking about the problem with someone else, with the intention of getting advice from them. One of them said, "When she has a problem, she keeps quiet, thinks about the problem then shares with someone" (U-A-34). Another stated, "First you think about the problem. Then you share the problem with friends" (U-K-21). In fact, many participants clearly expressed that when they have a problem, they seek advice from parents, friends, and the community to solve those problems (U-A-03, U-A-04, U-K-01, U-K-12, U-K-18, U-K-39, U-P-03, U-P-13, U-P-14, U-P-16, U-P-35). By getting various ideas from others, one should be able to identify potential solutions. One participant explained, "I seek for advice first from my husband and if it fails, we ask from the community friends and also get a response from them" (U-P-13). Another participant narrated the following:

> If I had a problem myself, what I will do is, I first have to talk to that person. To talk to someone about my problem, if I see this person is able to help me, I will seek for some advice also from this person, and the way forward, what can I do so that I can come out that problem. If that person has given me a way forward, I go with what that person has told me, to follow up her advice that she has given to me. (U-P-20)

Seeking advice is even more important for adolescents given the fact that adolescents are, according to one participant, not yet mature enough to solve most of their problems alone (U-K-11). The same notion was expressed by adolescents in a focus group discussion: "Hardship in which you can't handle certain things on your own and requires a helping hand from other colleagues" (U-A-FGD-08). This perception might clarify why adolescents tend to rely on support from others to address their problems. This is illustrated in the following excerpts: "I

start by telling my parents then we see the way forward" (U-A-25); "I tell my friends and parents to help me solve the problem, so they help me find solutions to the problem" (U-A-03); "I go back home and I wait for my mother and I tell her" (U-A-33). It is also true that if young people have proper guidance, it will improve their problem-solving abilities (U-K-11). For example, "Youth today lack advice, but if advised well they would be very good problem solvers" (U-K-28); "It is at school that he meets people . . . who introduce different ideas to him. The teachers . . . fellow student or friend can also counsel him. So, all these ideas he gets help him become a better problem solver" (U-P-03).

However, some participants consider it optional to seek guidance from others depending on how the problem presents itself. They believe it is important to first ascertain the magnitude of the problem to establish whether they would need the other's guidance. For example, "I approach a challenge depending on its nature and I consult where need be" (U-K-30).

According to the participants, people also need to weigh the different options they have identified. This underscores the importance of judgement in the process of problem solving. Not every option for solving the problem is appropriate: the problem solver needs to identify the most appropriate option to effectively overcome the challenge. In this regard, the problem solver needs to decide which option works best for the problem at hand. Judgement was identified both as synonym of problem solving and as a step in the process: "Problem solving is how to help or to reject to what is wrong and be good in good ways" (U-P-18); "He needs to have good decision-making skills—he should be able to differentiate what is important for him and what is not and to be self-driven" (U-P-22).

For adolescents, who identified conflicts between their peers as a common challenge that requires problem-solving abilities, judgement and decision making is a key step toward the resolution of those kinds of conflicts: "By listening carefully to both sides of the people that have a problem and deciding between them to see who has a problem and who doesn't" (U-A-13).

While defining problem solving and identifying the steps taken to solve a problem, participants mentioned several problems as examples of the problems to be solved. Many participants identified the problem of poverty or lack of resources as one of the most common challenges: "Sometimes when we are sent home to collect school fees, when she finds out that the parents lack the required money, she will ask for capital from the parents to buy leafy-greens or tomatoes for sale" (U-A-39); "First, you identify the problem and then look for money to solve that problem" (U-A-16, U-A-30, U-K-13). Some adolescents also believe that young people need money to be good problem solvers. They view problems as requiring only financial means and not cognitive and social abilities.

It is important to note that it was not only adolescents who mentioned the lack of money and the need to have it, but also some of the key informants and parents (U-K-12, U-K-13, U-K-31, U-P-26). According to these participants, as much as one may try to avoid problems, it is paramount that they have the money to help them face any other kind of challenge that might arise:

> To solve a problem, you should have money and to get this money, you ought to be in a saving group. When you lack money and you get a problem, you can borrow from the saving group. That money can help you although you have to pay back with interest. You might maybe use the borrowed money to purchase commodities for sale and then pay back the interest in bits. So, money from a saving group can help you solve your problems. (U-K-13)

Other problems the participants mentioned include problems of peers fighting (U-A-19, U-A-21, U-A-34); stealing (U-A-21); teen pregnancies (U-A-39); misunderstandings between peers, family members, or people in the community (U-A-37, U-K-14, U-K-19, U-K-23, U-P-11, U-P-17, U-P-25, U-P-27); lack of jobs (U-P-37); violence in the family and community (U-A-28, U-P-12, U-P-18); illness (U-A-04, U-A-15, U-A-26, U-K-12, U-K-13, U-P-26); having debts (U-A-01, U-A-09); and insufficient food at home (U-K-31).

Some participants identified other kinds of problems that they believe require some cognitive abilities, as one participant reported: "Some of these problems may not need money but ideas too which could add something" (U-K-39, U-P-36). Money is not the only means to face a challenge: thinking through it (U-K-03), with the right disposition may be more helpful in terms of finding constructive solutions.

Furthermore, descriptive analysis of codes relating to the process of problem solving was disaggregated by gender, category of participants, and study sites. The excerpts relating to the problem-solving process were generated from both man and women interviews, as shown in Figure 3 below. More women mentioned fear of God, judgement, sharing, and finding solutions to problems, whereas more men mentioned identifying the problem, knowing or understanding the problem, and facing problems.

Figure 3: Percentage of Excerpts That Include Identifying the Problem, Knowing or Understanding the Problem, Facing the Problem, Finding Solutions, Judgement, Sharing, and Fear of God, by Gender

Process by gender

Category	Women	Men
Sharing	62.1%	37.9%
Knowing/Understanding problem	47.3%	52.7%
Judgement	71.1%	28.9%
Identifying the problem	43.2%	56.8%
Finding solutions	58.9%	41.1%
Facing problems	48.3%	51.7%
Fear of God	58.9%	41.1%
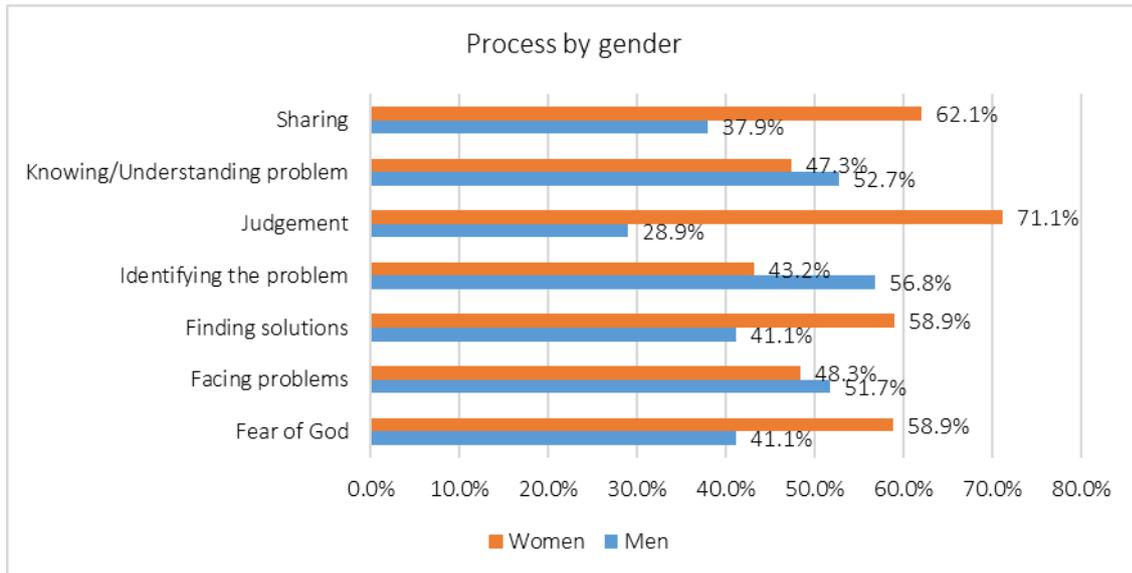
Moreover, all the codes emerged from all categories of participants, except for "judgement" which emerged in only 4 quotations and did not appear in the category of key persons (see Figure 4 below).

Figure 4: Percentage of Excerpts That Include Identifying the Problem, Knowing or Understanding the Problem, Facing the Problem, Finding Solutions, Judgement, Sharing, and Fear of God, by Category

Process by category

Category	Parents	Key persons	Adolescents
Sharing	27.6%	50.6%	21.8%
Knowing/Understanding problem	18.5%	56.9%	24.6%
Judgement	75.0%	0.0%	25.0%
Identifying the problem	29.6%	48.1%	22.2%
Finding solutions	28.8%	47.9%	23.3%
Facing problems	33.3%	34.7%	32.0%
Fear of God	36.4%	36.4%	27.3%
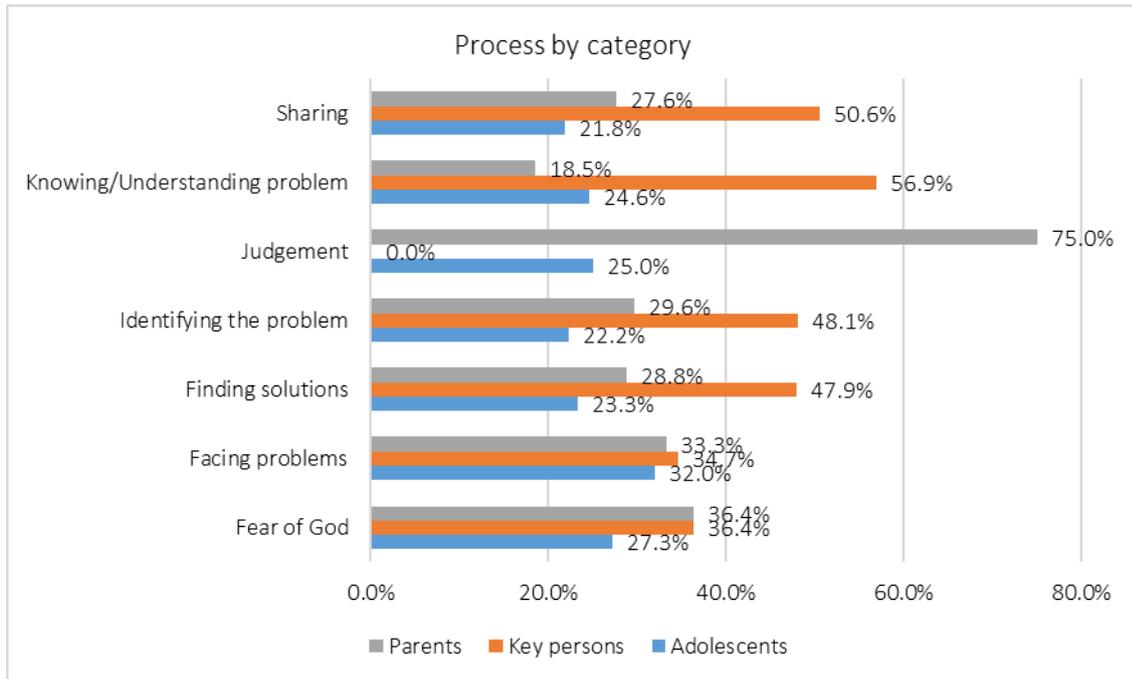
In summary, it emerges from interviews that finding solutions to challenges is the ultimate goal of problem solving. The problem-solving process includes identifying the problem, knowing or understanding the problem, seeking advice from others, weighing the various alternatives, and choosing the most appropriate solution.

3.2.2 Subskills

The process of problem solving is associated with several skills that the problem solvers use to solve problems. These are represented by the following codes.

Table 4: Codes That Emerged as Subskills of Problem Solving

CATEGORY: SUBSKILLS	PARTICIPANTS (SOURCES)		EXCERPTS	
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
Goal setting	3	3.16	6	1.98
Guidance and counselling	60	63.16	128	42.24
Planning	11	11.58	14	4.62
Self-confidence	20	21.05	25	8.25
Teamwork or Cooperation	5	5.26	7	2.31
Leadership	4	4.21	6	1.98
Self-regulation	4	4.21	4	1.32
Relationship skills	52	54.74	105	34.65
Receptive communication	34	35.79	49	16.17
Expressive communication	13	13.68	22	7.26
Total	**95**		**303**	
CATEGORY: RELATED SKILLS				
Critical thinking	7	7.37	8	20.51
Creativity	12	12.63	22	56.41
Decision making	9	9.47	11	28.21
Total	**95**		**39**	

The participants identified a wide range of subskills that problem solvers ought to possess to effectively execute the problem-solving process. These skills include goal setting; guidance and counselling; planning; self-confidence; self-regulation; teamwork or cooperation; and relationship skills that include expressive communication, passive communication, and receptive communication. The frequency of major subskills mentioned by participants disaggregated by gender and category can be observed in Figure 5 below.

Figure 5: Frequency of Excerpts That Include Guidance and Counselling, Relationship Skills, Communication (Receptive), Communication (Expressive), Self-Confidence, and Planning, by Gender and Category
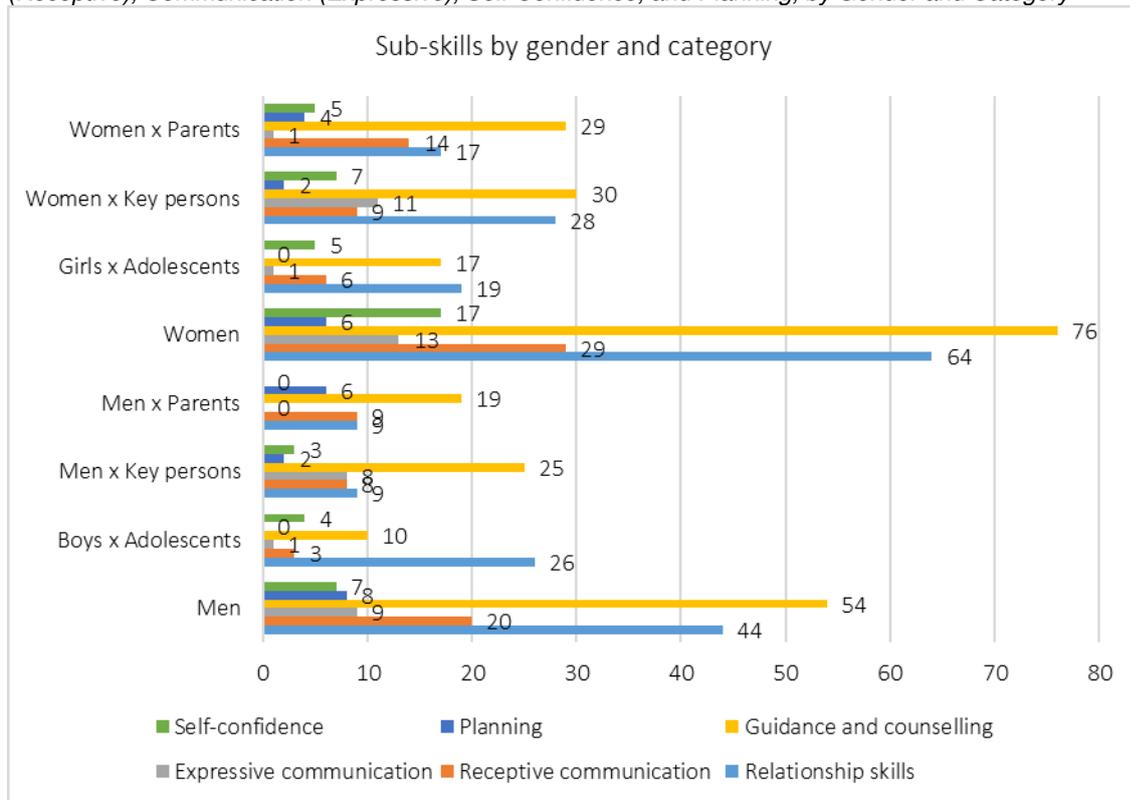
It can be observed in Figure 5 that guidance and counselling is the most common code mentioned by both men and women, and is considered relevant by the categories of parents and key persons. On the other hand, adolescents find relationship skills very important. When descriptive analysis of the same codes is conducted with respect to study site (Figure 6 below), guidance and counselling and relationship skills appear as prominent codes in all the selected districts.

Figure 6: Frequency of Excerpts That Include Guidance and Counselling, Relationship Skills, Communication (Receptive), Communication (Expressive), Self-Confidence, and Planning, by District
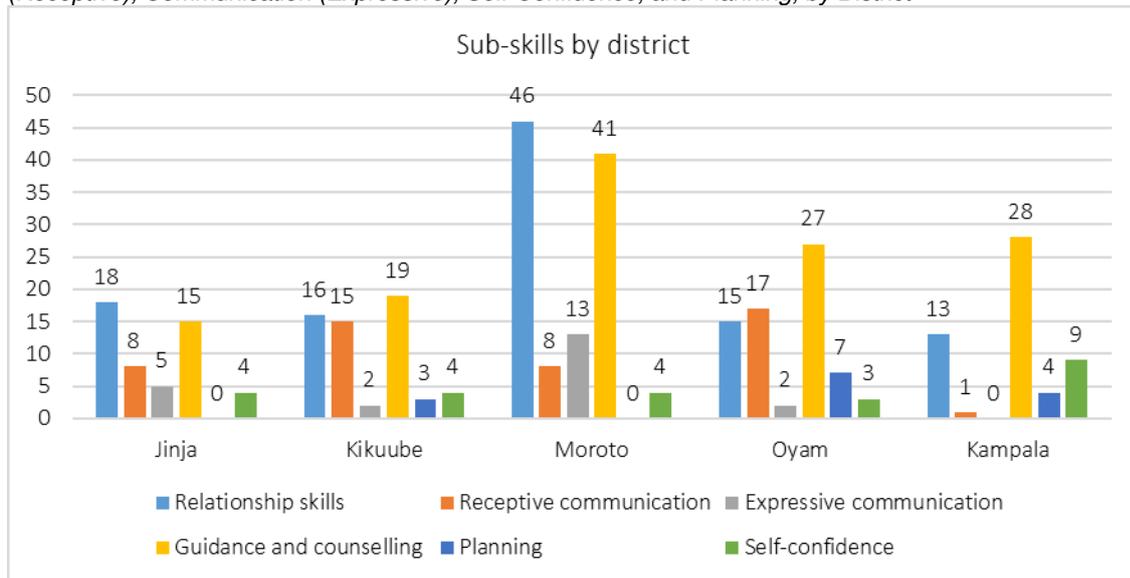
Guidance and counselling was mentioned several times by the participants as a subskill problem solvers exhibit. Participants interpret guidance and counselling as the ability to advise those with problems. In fact, being able to understand others' situations and giving good advice that helps them resolve problems is considered a major role of a problem solver. This was evident for the participants themselves and the adolescents they identified:

> Problem solving is a two-way trafficked thing I could say. Because the child is also problematic to the family. As a father or as the parents, if you want to solve that problem with ease, at first you bring him in, because those adolescent ages are now getting towards maturity age. You call him, you bring him and interact with him. Getting to the root cause of all these problems. What is the root cause of this problem? Do you think if you move in such a way, will you really have a bright future? Why can't you move this way? That one we need to sit with him, sharing ideas exchanging words with him then we can come out with a better solution to handle such problems. (U-K-29)

> First and foremost, I would buy another pen for the kid in order to keep him composed, and then I would counsel him on how he should keep his pen better by always keeping it in the maths set whenever he is not using it. (U-P-40)

Another participant shared, "She counsels us whenever we get misunderstandings. She tells us what to do and what not to do. We usually leave the meeting happy as though we had no misunderstandings" (U-A-37).

To the participants who identified fights and theft as problems that must be dealt with, guidance and counselling could help to deter bad conduct. Being able to influence others'

behaviour requires the problem solver to have guidance and counselling skills. This is very clear in these quotations: "If I find a child doing something bad, I talk to him or her. Or if he has stolen something you tell him to return the stolen thing to the owner" (U-A-33); "She guides other people. She told one of our friends to respect herself and stay away from bad groups" (U-A-06); "One of them is that when get people, maybe those ones who can fight, you advise that is wrong, maybe those are thieves, you advise that [it] is wrong" (U-P-21). This perspective was further emphasised in a focus group discussion by parents who stated, "He withdraws his/her friends from fighting mostly if they are in groups and calls them one by one and tell them what they are doing is wrong" (U-P-FGD-08).

Linked to guidance and counselling, participants identified relationship skills as important aspects that are necessary in problem solving (U-A-17, U-A-18, U-A-20, U-K-17, U-K-18, U-K-19, U-K-20, U-K-23, U-P-03, U-P-04). According to them, a problem solver should demonstrate the ability to "relate well with others" (U-P-36); "associate or cooperate with people in the community" (U-A-16, U-K-01, U-K-24, U-K-39, U-P-04, U-P-29); "reconcile with people" (U-A-16, U-A-17, U-A-24, U-A-32, U-K-10, U-K-11, U-K-23); "resolve conflicts between parties" (U-A-14, U-A-20, U-A-31, U-A-33, U-P-32); and "avoid quarrels and fights" (U-A-21, U-A-22, U-P-03).

For adolescents to exercise relationship skills effectively, they should have good communication skills (U-K-05, U-K-16). Both receptive and expressive skills were identified as essential skills for problem solvers (U-A-35). Some of the receptive skills that participants mentioned include "being impartial when resolving conflicts between parties" (U-K-02, U-K-24, U-P-02, U-P-13), "being attentive when elders are talking" (U-A-25, U-K-09), and "taking time to listen before you react to anything" (U-K-25, U-P-32). The following quote illustrates what the participants mean by expressive skills: "She communicates to us with utmost humility. She tells us what to do and what not to do. We usually leave the meeting happy as though we had no misunderstandings" (U-A-37).

Some participants highlighted *self-confidence* as another subskill that an adolescent should possess (U-A-23, U-K-03, U-P-14, U-P-24). Self-confidence helps one face problems or situations without fear. The following excerpt supports this finding: "One should also be confident. You have to believe that whatever you have decided to learn to do, you will do and succeed" (U-A-39); "She is always confident about whatever she does, and she is always helpful to others" (U-A-01); "He is not shy to discuss problems" (U-A-14).

A few participants reported *planning* as another subskill that is necessary for problem solving (U-P-22, U-P-25, U-P-40, U-K-31, U-K-39). It is interesting to note that this code emerged from parents and key persons. They believe that problems are inevitable, and thus having foresight and preparing for future eventualities is a key step to overcoming challenges. One of the parents said, "Like in this compound, I have to make sure that I acquire some livestock such that when I get some problems, then I can sell off some to get money" (U-P-24). Another parent narrated, "For instance, if I buy goats and after some months they reproduce. And if it so happens that I encounter a problem, I can sell off the goats to help me get money and solve the pending problem" (U-P-23).

The other skills that are related to problem solving, but are also relevant in the problem-solving process, include creativity (U-A-29, U-A-30, U-A-39, U-K-33, U-K-38, U-P-14, U-P-35, U-P-40), critical thinking (U-K-03, U-K-22, U-P-10, U-P-20), and decision making (U-A-13, U-K-17, U-P-02, U-P-10, U-P-35). The total number of excerpts that emerged in each code under related skills by gender and category can be observed in Figure 7.

Figure 7: Frequency of Excerpts That Include Creativity, Critical Thinking, and Decision Making by Gender and Category
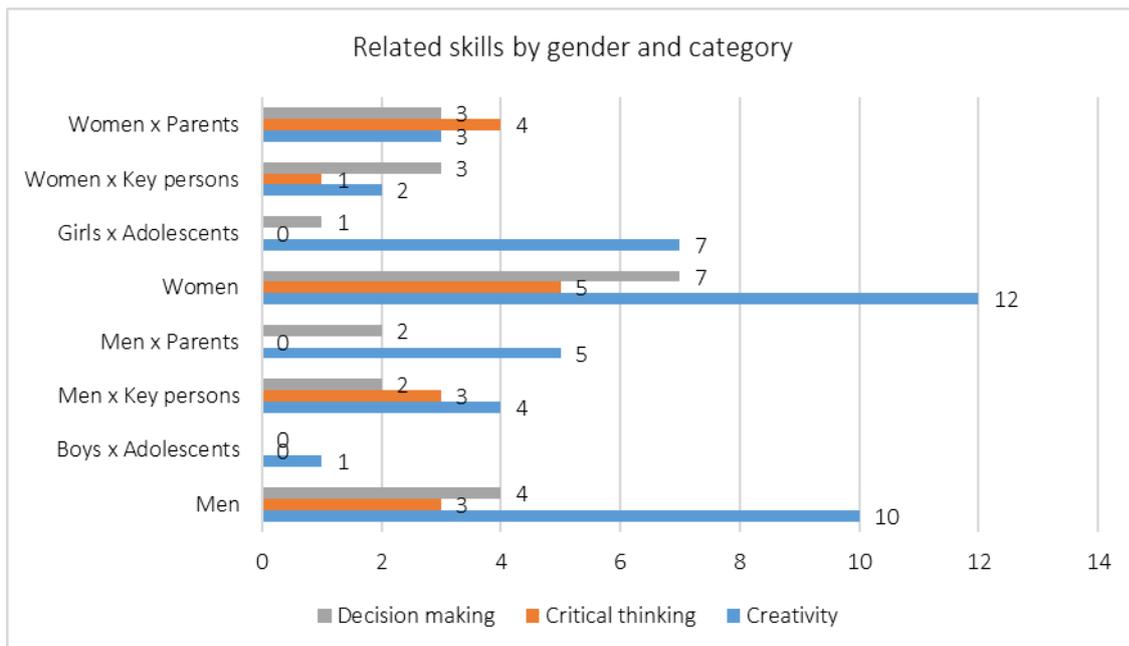
As seen in Figure 7 above, creativity is frequently mentioned by men and women participants in all categories (adolescents, parents, and key persons). To them, creativity indicates that a problem solver can take on developmental activities (U-K-03, U-K-12, U-P-37) that generate income (U-A-30, U-A-39, U-P-35, U-P-40). This perception of creativity is influenced by the lack of resources to overcome challenges, which emerged clearly among the problems mentioned by participants. One adolescent narrated the following:

> A creative person will think of what to do, where to go and work to get some money. For example, if you want to get money, you can learn to make liquid soap just by seeing and practising what you have seen, in order to get money. (U-A-39)

Other participants highlight impartiality as a key role of a problem solver. One participant said, "By listening carefully to both sides of the people that have a problem and deciding between them to see who has a problem and who doesn't" (U-A-13). Another participant stated, "In case you find the problem amongst people then you have to first listen to both parties before you make a decision" (U-P-02). A few participants, mostly parents and key persons, mentioned critical thinking, but did not elaborate on its importance.

Furthermore, descriptive analysis of codes relating to the subskills of problem solving was disaggregated by gender, category of participants, and study sites. All codes related to subskills were equally generated by quotes from both men and women. As can be observed

in Figure 8 below, the percentage of excerpts that emerged from women is higher than that of men in all codes except *planning*.

Figure 8: Percentage of Excerpts That Include Guidance and Counselling, Relationship Skills, Communication (Receptive), Communication (Expressive), Self-Confidence, and Planning, by Gender.
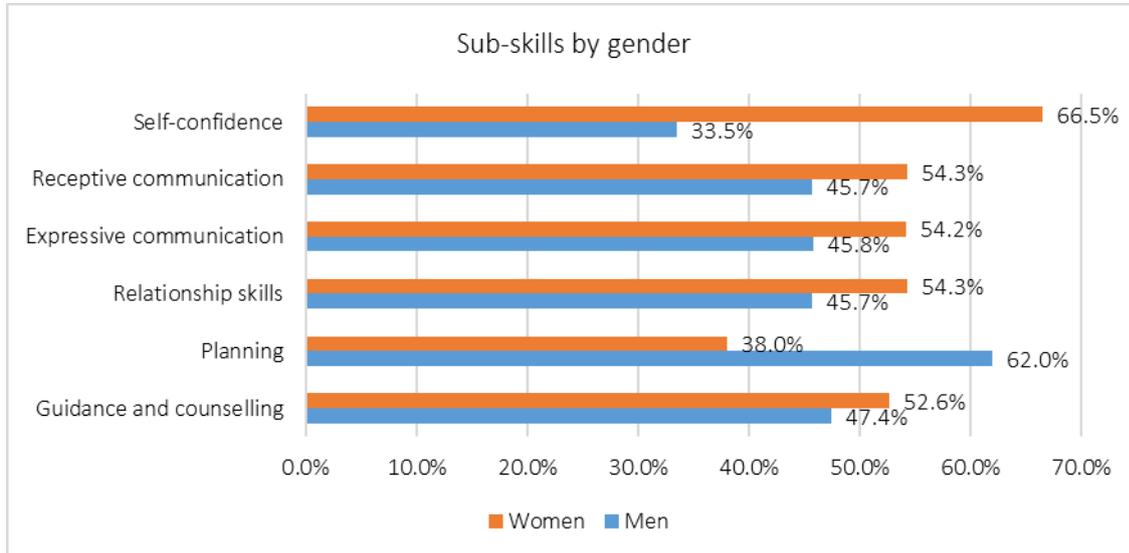
It is worth noting that all the codes emerged from adolescents, key persons, and parents except *planning*, which did not emerge from the category of adolescents, as shown in Figure 9 below. It can be observed from the same figure that key persons and parents mostly mentioned expressive communication (86.4%) and planning (71.4%), respectively, whereas adolescents found relationship skills crucial (41.7%).

Figure 9: Percentage of Excerpts That Include Guidance and Counselling, Relationship Skills, Communication (Receptive), Communication (Expressive), Self-Confidence, and Planning, by Category
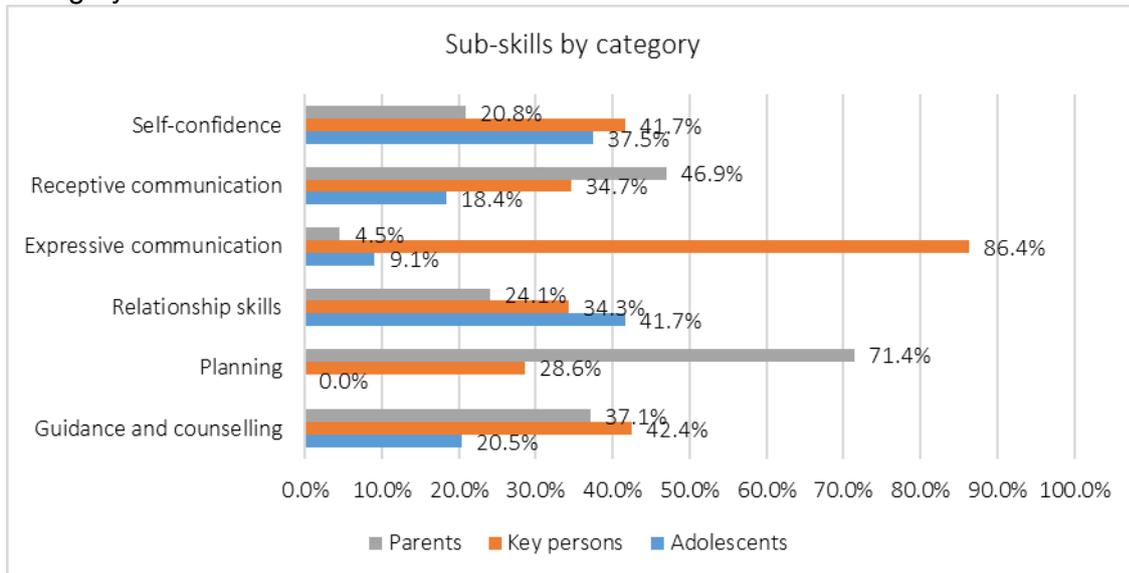
When the codes under subskills are analysed by different sites, *guidance and counselling*, *relationship skills*, *receptive communication*, and *self-confidence* emerged in all the districts. They emerged, however, with smaller percentages than *expressive communication* (59.1%), which has the highest percentage of excerpts particularly in Moroto district, followed by *planning* (50.0%) in Oyam district (see Appendix 2).

In summary, it is clear from the interviews that a problem solver demonstrates good relationship skills, guidance and counselling skills, communication skills, and self-confidence.

3.2.3 Dispositions

The following codes represent dispositions that participants identified as relevant for problem solving.

Table 5: Codes That Emerged as Dispositions of Problem Solving

CATEGORY: DISPOSITIONS OF PROBLEM SOLVING	PARTICIPANTS (SOURCES)		EXCERPTS	
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
Patience or Time	16	16.84	29	15.18
Inquisitiveness	2	2.11	3	1.57
Internal locus of control	3	3.16	3	1.57
Positive attitude	12	12.63	16	8.38
Responsibility	11	11.58	12	6.28
Self-reflection	3	3.16	3	1.57
Passion	8	8.42	9	4.71
Kindness or Friendliness	34	35.79	51	26.70
Willingness to be corrected or advised	34	35.79	48	25.13
Hard work	34	35.79	48	25.13
Perseverance	7	7.37	8	4.19
Total	**95**		**191**	

The participants identified several dispositions that are necessary for solving problems. These dispositions include being hard working, responsibility, patience, kindness or friendliness, positive attitude, willingness to be corrected/advised, passion, and perseverance. The total number of excerpts in each code by gender and category can be observed in Figure 10 below.

Figure 10: Frequency of Excerpts That Include Hard Working, Responsibility, Patience, Kindness or Friendliness, Positive Attitude, Willingness to Be Corrected or Advised, Passion, and Perseverance, by Gender and Category
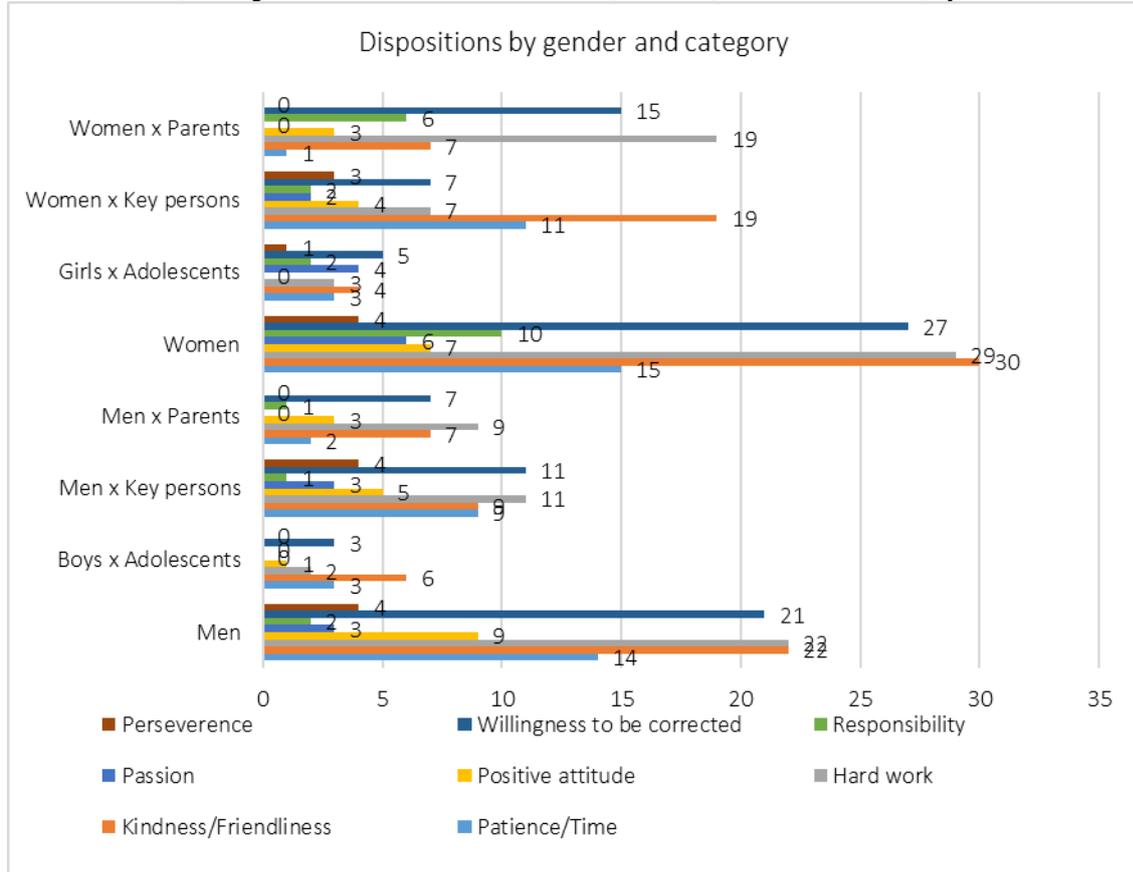
As can be observed from Figure 10, the most common dispositions among both men and women participants in all categories and across all sites include kindness or friendliness, hard work, willingness to be corrected, and patience.

Figure 11: Frequency of Excerpts That Include Hard Working, Responsibility, Patience, Kindness or Friendliness, Positive Attitude, Willingness to Be Corrected or Advised, Passion, and Perseverance, by District
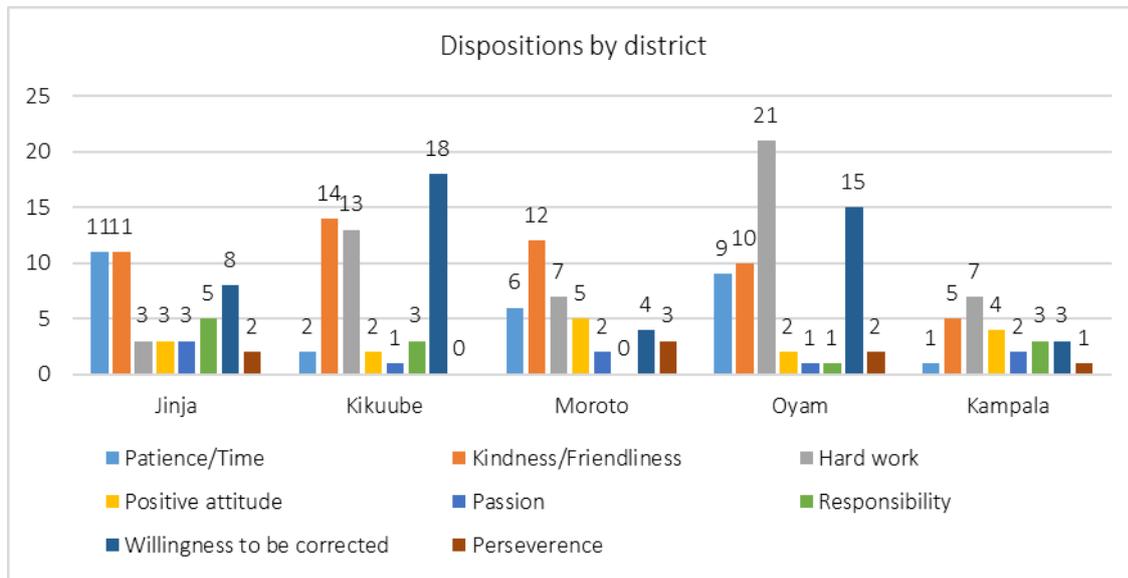
Hard work is considered crucial for one to become a problem solver (U-A-22, U-A-39, U-K-13, U-K-20, U-K-24, U-K-27, U-K-28, U-P-09, U-P-26, U-P-29, U-P-36). To participants, hard work entails engaging in activities that earn income (U-K-12, U-P-25, U-P-09) and being committed to their studies (U-A-39, U-K-13). This perception also emerged in the focus group discussion where parents noted that adolescents would engage in different kinds of work to provide for basic needs (U-P-FGD-01, U-P-FGD-04, U-P-FGD-06). They clearly mentioned that working hard empowers young people to solve most of the problems that require financial support (U-P-25), such as obtaining school supplies (U-P-05, U-P-26). Their passion for work (U-K-28) and learning (U-A-19, U-A-39, U-K-01, U-K-33) is influenced by the nature of the problems that participants themselves were facing. Thus, it is not surprising that they stress self-motivation (U-K-03), determination (U-K-01, U-K-33), and endurance or persistence (U-K-22) as key attributes of a problem solver.

Willingness to be corrected or advised is yet another disposition that participants identified as relevant to enhancing problem-solving abilities (U-A-39, U-P-11, U-P-25, U-P-26, U-P-27, U-P-35). In fact, a young person who is capable of solving problems should be able to "seek for help from parents, friends and community to solve his or her problems" (U-A-04, U-K-28, U-P-05, U-P-12, U-P-13, U-P-28, U-P-29) and should be ready to take advice (U-K-17). One participant explained, "If I get a problem which I am not capable of solving, I can go to a friend and request for help . . . That is how people are supposed to solve their problems through requesting from friends in good manner" (U-P-27). Another participant stated, "If it is a problem that requires advice to be solved, I can call my friends to advise me on how I can solve the problem" (U-P-03). This resonates with what was presented in the previous sections on seeking advice or guidance skills.

While defining problem solving, participants expressed "helping others to solve their problems" (U-A-13, U-A-10, U-K-24). This requires a problem solver to be "kind and friendly to others" (U-A-09, U-A-10, U-A-14, U-A-16, U-A-26, U-K-21, U-K-23, U-K-24, U-K-34, U-P-02, U-P-03) in order to help others open up and understand their problems. As one participant said, "Firstly, you befriend that person. Then you identify the problem and lastly discuss the problem with them to find a solution" (U-P-10). According to the participants, a problem solver who is kind and friendly should be "approachable" (U-A-01, U-K-21, U-K-34, U-K-27) and "social" (U-K-27, U-P-36).

One participant's statement provides further evidence for the aforementioned finding: "That person has to be very friendly. That is the most important, because no one can tell you what he is feeling. It is not easy to speak to strangers" (U-K-05). It is also true that problem solvers must be considerate to the people they are helping to solve problems (U-K-17). This makes patience/time a very important disposition for a person who demonstrates problem-solving skills (U-A-09, U-K-01, U-K-02, U-K-23, U-K-26, U-P-02). Participants mentioned that problem solvers should not "rush" (U-K-25), but rather be "calm" (U-A-06, U-K-05) and "take time to understand the problem before they act" (U-K-03, U-K-11, U-K-26, U-P-32). Participants are also aware that problems are inevitable (U-K-22), and thus the young people put measures in place to counteract problems when they arise, as one participant illustrates below:

> I have made sure that I memorize my mother's cell phone number, so that in case of any danger, like an accident, I begin by telling my rescuers the contact numbers of my mother to let her know what has happened to me before she starts to worry about me. (U-A-39)

Some participants reported that having a positive attitude is another disposition necessary for problem solving. To them, a positive attitude means being "ready and determined to face problems" (U-K-10, U-P-36). One participant's statement provides further evidence for this finding: "At least you need to have a good attitude so that when the problem comes you handle it. How did it come, how did it start, how long will it take then how am I going to solve it?" (U-K-23). Another participant explained:

> As an individual I can become a better [at] problem solving by having a positive attitude towards a problem. First of all, I have to identify the problem, and then, I also have a positive attitude towards that problem. And I must be so aware that problems are there, but problems should not be the end of everything. So, one way I can become a problem solver is by having a positive attitude towards any challenge or problem. (U-K-22)

A few participants think a problem solver should show a sense of responsibility (U-K-03, U-K-31, U-P-36). To the participants, this means that they "should not wait to be told what to do" (U-P-36), but rather "help in house chores" (U-K-03), "take care of family assets" (U-P-11), and "avoid bad peers" (U-K-31, U-P-12).

Furthermore, some descriptive analyses of codes relating to dispositions of problem solving have been disaggregated by gender, category of participants, and study sites. As shown in

Figure 12 below, all codes relating to dispositions emerged from the interviews of both men and women. More women mentioned willingness to be advised, responsibility, passion, hard work, and kindness or friendliness. On the other hand, more men identified patience, perseverance, and positive attitude.

Figure 12: Percentage of Excerpts That Include Hard Working, Responsibility, Patience, Kindness or Friendliness, Positive Attitude, Willingness to Be Corrected or Advised, Passion, and Perseverance, by Gender
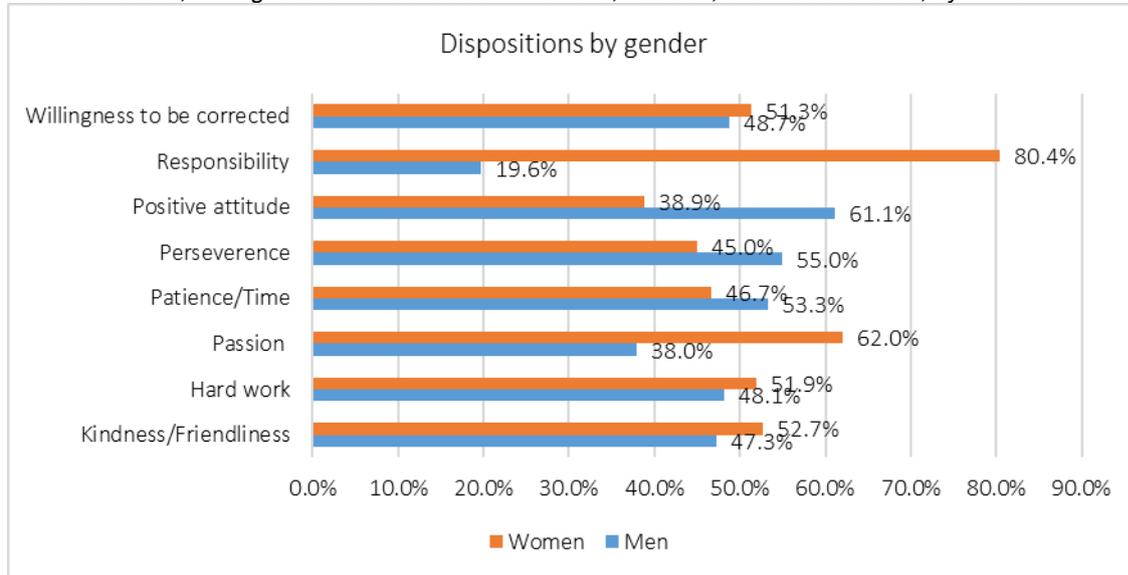
Moreover, most of the codes emerged from all categories of participants except *passion* and *perseverance*, which did not appear in the category of parents, as shown in Figure 13 below. The disaggregation by site does not reveal any findings that contradict what is stated above (see Appendix 3).

Figure 13: Percentage of Excerpts That Include Hard Working, Responsibility, Patience, Kindness or Friendliness, Positive Attitude, Willingness to Be Corrected or Advised, Passion, and Perseverance, by Gender and Category

Dispositions by category

Category	Parents	Key persons	Adolescents
Willingness to be corrected	45.8%	37.5%	16.7%
Responsibility	58.3%	25.0%	16.7%
Positive attitude	37.5%	56.3%	6.3%
Perseverance	0.0%	87.5%	12.5%
Patience/Time	10.3%	69.0%	20.7%
Passion	0.0%	55.6%	44.4%
Kindness/Friendliness	26.9%	53.8%	19.2%
Hard work	54.9%	35.3%	9.8%
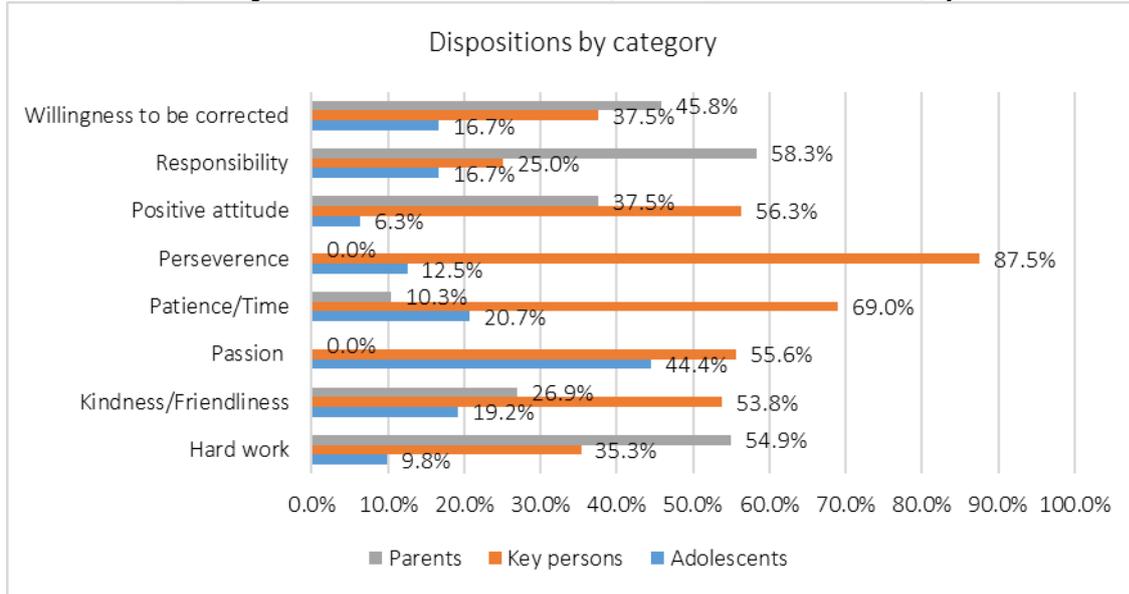
In conclusion, the participants view a problem solver as someone who is kind, patient, hardworking, responsible, and willing to be advised.

3.2.4 Behaviours and Values

Related to dispositions, certain values are important for the effectiveness of the problem-solving process. These are shown under the codes below.

Table 6: Codes That Emerged as Values and Behaviours

CATEGORY: VALUES AND BEHAVIOURS		PARTICIPANTS (SOURCES)		EXCERPTS	
		FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
Values	Humility	6	6.32	6	8.11
	Confidentiality	6	6.32	11	14.86
	Wisdom	4	4.21	5	6.76
	Respect	28	29.47	48	64.86
	Love	2	2.11	4	5.41
	Trust or honesty	5	5.26	6	8.11
	Total	**95**		**74**	
Behaviours	Positive conduct	56	58.95	81	83.51
	Discipline	12	12.63	16	16.49
	Obedience	3	3.16	6	6.19
	Total	**95**		**97**	

The total number of excerpts in each code by gender and category can be observed in Figure 14 below.

Figure 14: Frequency of Excerpts That Include Positive Conduct, Discipline, Respect, Wisdom, Trust, Humility, and Confidentiality, by Gender and Category
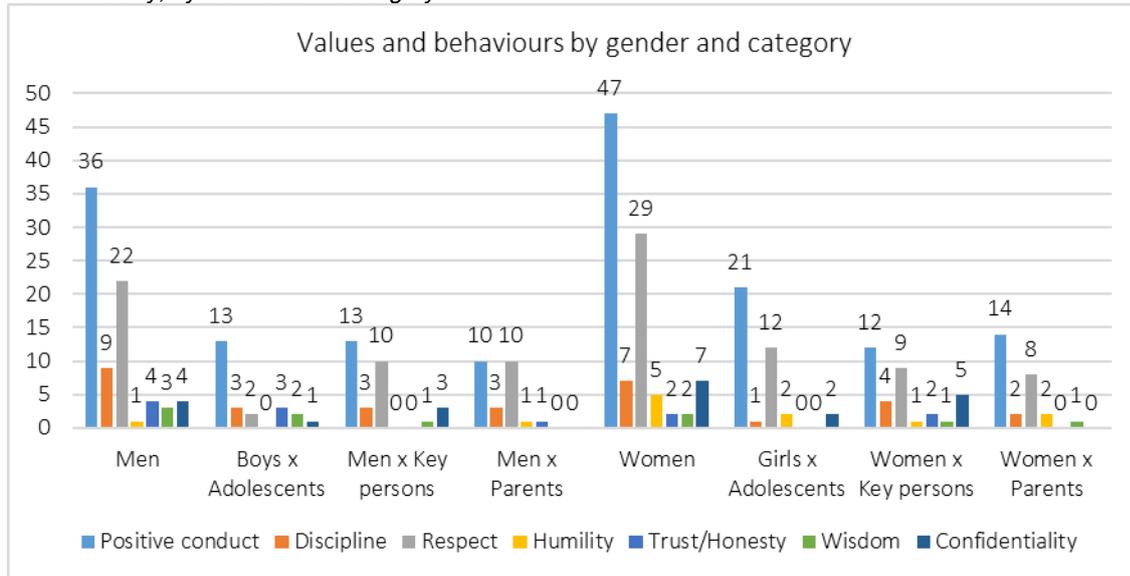
It can be observed in Figure 14 above that positive conduct is the most outstanding code among men and women participants in all categories (adolescents, parents, and key persons). When the same codes are analysed by study sites, the findings are not different from those reported in gender and category above (see Figure 15 below).

Figure 15: Frequency of Excerpts That Include Positive Conduct, Discipline, Respect, Wisdom, Trust, Humility, and Confidentiality, by District
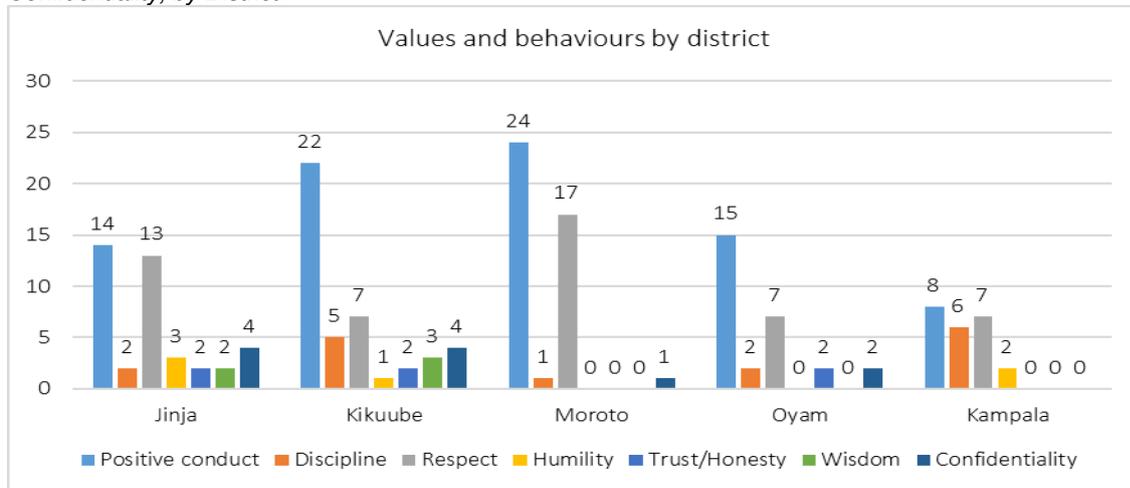
To most participants, a problem solver is someone who displays good conduct. Many participants identified several aspects of positive conduct. First, they identified the ability to recognise mistakes and apologise. According to one participant, "In case she has done something wrong, she realizes quickly and apologizes. Automatically when she apologizes, you also forgive her "(U-P-02). To this participant, good problem solvers accept their mistakes

and seek forgiveness from those they have offended (U-A-16, U-P-26). This same notion was stressed by adolescents in a focus group discussion. One of them narrated the following:

> One of the siblings breaks maybe a cup or a flask. The elder brother comes and inquires who has done the act and one of the siblings admits to doing it. The brother is in position to tell the younger sibling to go and confess to their parents and ask for forgiveness to solve the problem. (U-A-FGD-02)

As noted in the definition, the skill of problem solving is associated with the ability to resolve conflicts. One of the parents explained, "Even when he finds his friends fighting, he tries to advise them to stop" (U-P-03). Another key person also said, "Such adolescents advise others and separate those that they find fighting" (U-K-09). In the same vein, one adolescent also mentioned, "Breaking up fights and quarrels in class and home so that people don't get injured" (U-A-19). It is evident from these participants that problem solvers need to possess good relationship skills to reconcile conflicting parties: an aspect that adolescents emphasised just as much in the focus group discussions (U-A-FGD-03, U-A-FGD-06, U-A-FGD-10).

Similarly, participants highlighted *helping others* as another behaviour included in the definition of problem solving. A good problem solver is someone who shows willingness to help the community (U-A-10), as one participant stated: "Such an adolescent shall show the desire to help others with various tasks" (U-A-11). Indeed, lending a helping hand to others was frequently echoed by adolescents and parents in the focus group discussions (U-A-FGD-02, U-A-FGD-06, U-A-FGD-08, U-P-FGD-04)

Many other participants identified respect as an essential value and behaviour for problem solving (U-A-03, U-A-21, U-A-22, U-A-26, U-A-39, U-K-12, U-K-19, U-K-38, U-P-13, U-P-23, U-P-25). To some participants, respect means "greeting people" (U-A-33), as one of them explained, "First of all that child should greet people, welcome visitors. If it is a girl she should kneel down while greeting" (U-P-02). Listening to parents and elders is another sign of respect that problem solvers demonstrate (U-K-25, U-P-05). Another participant's statement provides additional evidence for this finding: "They should respect the elders because most of the time it is the elders who are giving them advice or trying to solve their challenges, they must be good at listening" (U-K-02). To this participant, being attentive while elders are speaking is one sign of willingness to take their advice.

Other values that participants mentioned include confidentiality, which means the ability to keep secrets about other people's problems (U-A-14, U-A-23, U-K-02, U-K-11, U-K-20), as one of them said: "She is good at keeping secrets" (U-K-10). According to other participants, a problem solver should be humble (U-A-03, U-A-37, U-P-02, U-P-03, U-P-13), as one participant noted: "This boy is humble and he is not always involved in fights, he is ever quiet, he is even easier when it comes to sending him somewhere. I find him easier to deal with" (U-P-03). To some participants, wisdom is important for problem solving (U-K-05). They clearly stated that, "to solve problems you must be wise" (U-K-12) and "be intelligent" (U-A-14, U-P-04). It is worth noting love (U-A-26, U-P-26) and honesty, which includes being truthful (U-A-09, U-A-24, U-K-02, U-K-11, U-P-02).

It is also worth mentioning that some descriptive analyses of codes on behaviours and values by gender, category of participants, and study sites revealed important findings. It can be observed in Figure 16 below that more men mentioned discipline, wisdom, and trust, whereas more women highlighted humility, confidentiality, respect, and positive conduct.

Figure 16: Percentage of Excerpts That Include Positive Conduct, Discipline, Respect, Wisdom, Trust, Humility, and Confidentiality, by Gender and Category
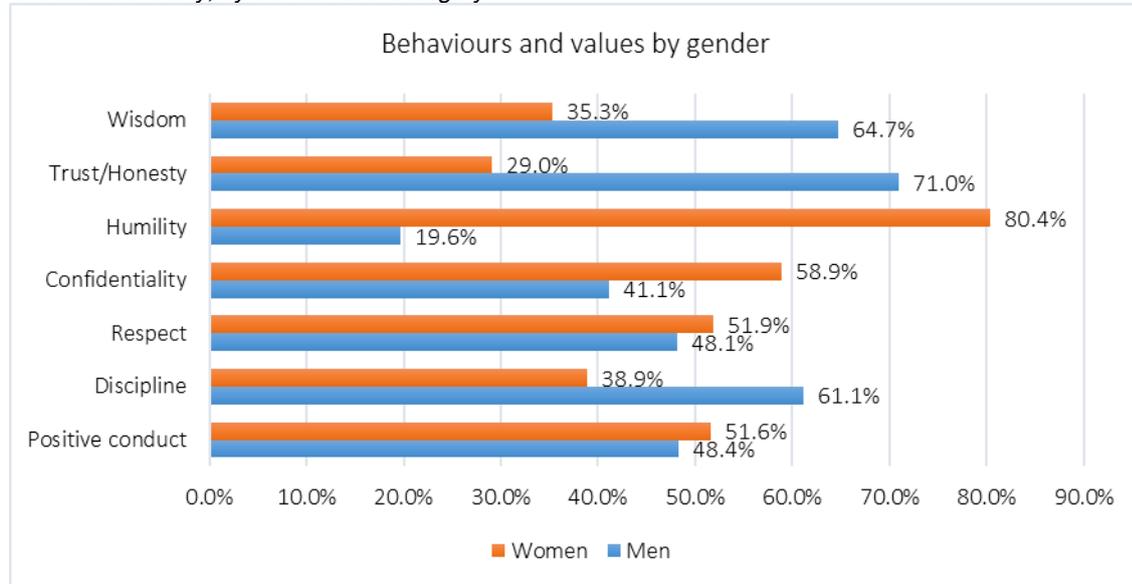
Furthermore, most of the codes came from all the categories of participants, except *confidentiality*, which did not appear in the category of parents, as shown in figure 17 below. For the disaggregation by district, see Appendix 4.

Figure 17: Percentage of Excerpts That Include Positive Conduct, Discipline, Respect, Wisdom, Trust, Humility, and Confidentiality, by Gender and Category

Behaviours and values by category

Category	Parents	Key persons	Adolescents
Confidentiality	0.0%	72.7%	27.3%
Humility	50.0%	16.7%	33.3%
Trust/Honesty	16.7%	33.3%	50.0%
Wisdom	20.0%	40.0%	40.0%
Respect	35.3%	37.3%	27.5%
Discipline	31.3%	43.8%	25.0%
Positive conduct	28.9%	30.1%	41.0%
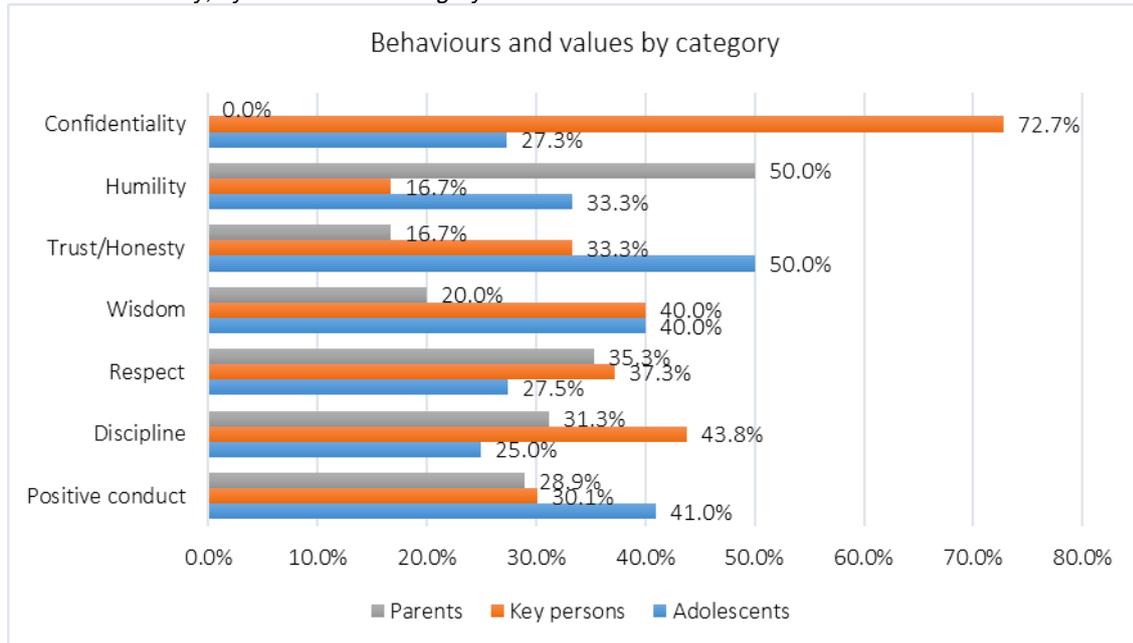
In summary, a problem solver is someone who has good conduct and is respectful. This is linked to being disciplined, obedient, humble, and honest.

3.2.5 Support System and Enabling factor

Regarding the systems that support adolescents' problem-solving abilities, the participants mentioned family, community or development partners, peers, places of worship, and schools or training institutions.

Table 7: Codes That Emerged as Subskills of Problem Solving

CATEGORY: SUPPORT SYSTEMS	PARTICIPANTS (SOURCES)		EXCERPTS	
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
Family	63	66.32	77	55.80
Friends or Peers	22	23.16	25	18.12
Community or Development partners	38	40.00	54	39.13
School or Training	69	72.63	78	56.52
Place of worship	8	8.42	8	5.80
Total	**95**		**138**	

In the definition and process, it emerged clearly that most of the participants seek guidance from parents, friends, and community to solve problems. This shows that support systems are essential for enhancing the skill of problem solving. The total number of excerpts in each code by gender and category can be observed in Figure 18 below.

Figure 18: Frequency of Excerpts That Include Family, School, Community, Friends or Peers, and Place of Worship, by Gender and Category
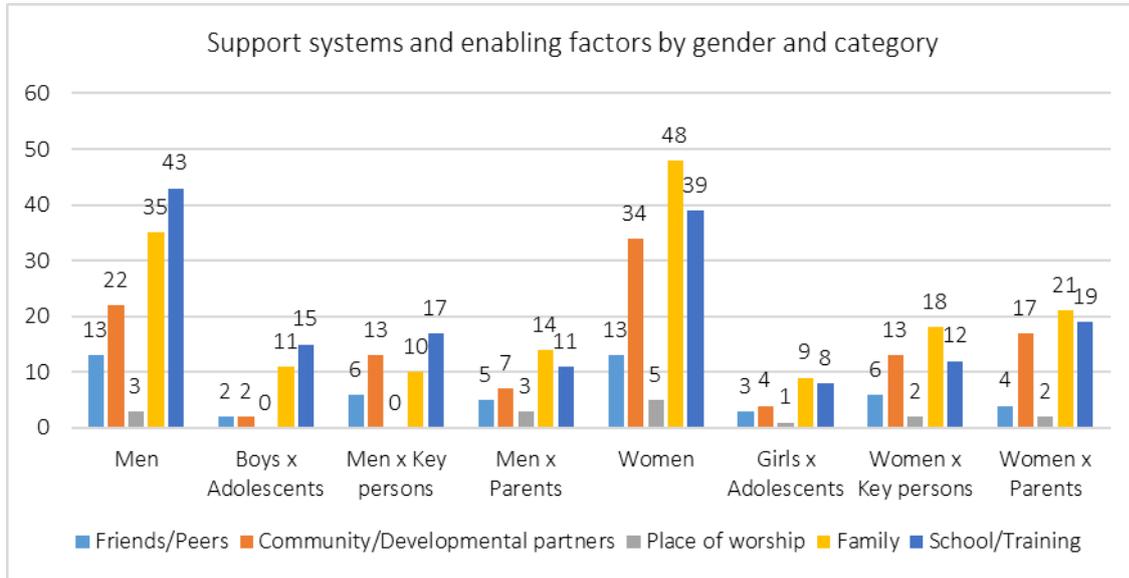
Based on Figure 18 above, school and family are mentioned by both men and women participants from all categories of adolescents, parents, and key persons, followed by community. When we analyse the same codes with respect to sites, the findings are no different (see Figure 19 below).

Figure 19: Frequency of Excerpts That Include Family, School, Community, Friends or Peers, and Place of Worship, by District
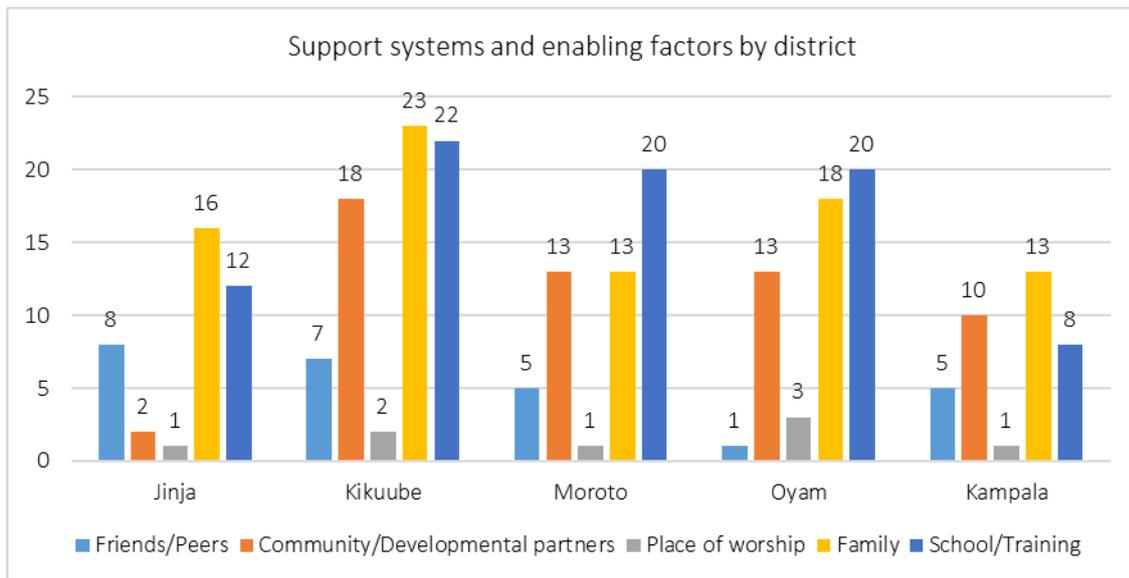
Several participants identified school and training as vital for nurturing problem-solving skills among young people. According to them, "adolescents spend most of their time in school" (U-K-03). In school, they are exposed to opportunities such as seminars and workshops (U-K-33, U-K-09, U-P-09), co-curricular activities (U-K-34), and guidance and counselling (U-K-25, U-K-30, U-K-34), which enhance their problem-solving abilities. One participant explained:

> It is at school that he meets people from different societies and backgrounds who introduce different ideas to him. The teachers also help him by counselling him. A fellow student or friend can also counsel him. So, all these ideas he gets help him become a better problem solver. (U-P-03)

At school, teachers counsel and advise adolescents to behave well: "When you base on the teachers, they always advise students to behave well and also help them to accomplish different tasks, in form of helping in homework especially when you don't understand some questions" (U-A-01). To some participants, young people can develop problem-solving skills if they are embedded in the teaching and learning process at school. One of them stated, "The lessons that are given unto these children through the teaching and learning. This person can be a good problem solver given that the teacher is doing his/her best to impart knowledge in response to this learner" (U-K-01).

Some participants maintain, however, that the school system is supposed to work hand in hand with the family system. One respondent said, "The parents and teachers because they advise her to be well behaved, and teach her how to solve some problems" (U-A-03).

Many other participants identified the family as the foundation for developing the skill of problem solving (U-K-03). Other support systems build on what the family has initiated, as one participant stated: "charity begins from home, then the community . . . and after the community you go to the school" (U-P-05). Another participant explained it this way:

> It starts from the family, because the school builds on what the family has instilled in the child. If not from home, it is very hard. At times, school going children may have been spoiled from home, making teaching or putting something in that child hard. Parents stay with the children at home in those years when we are supposed to put something in that person. Like if someone does not learn at this age, say, saying "I am sorry," "thank you," even when you go to school it is very hard. So, it is the family first. (U-K-05)

According to the participants, "the child will always follow the parents, so it is inevitable to always do good and solve problems as a parent in front of the children because they will follow suit" (U-P-32). This means that parents who are exemplary can pass on the skill of problem solving to their adolescent children, as narrated in the excerpt below:

> It's the family, because if a child is brought in a family where he sees the father, mother. They know how they can understand a problem and they know how they can also solve [it]. The person can also cope up. Because the child cannot go outside and begin those

things, at home there's a problem. Because when you've brought a child in a good way at home, the child will do outside. (U-K-23)

In the community, the youth seek advice from the elders, counsellors, and political leaders (U-P-36). The elderly citizens invite the young people to participate in community meetings where they can acquire the skill of problem solving by observing how elders resolve problems (U-K-11, U-K-29, U-P36). One of the participants explained it like so:

Ok, the community, the young girl to become a better problem [solver] she also listens to the meeting that is taking place from the community and now they put a meeting something ok there is a meeting may be, yeah when there is a meeting meaning problems are being solved there. Meeting always means there is a place of problems. In the meeting they are solving some other problems. (U-K-19)

Some participants also reported that peers may help the youth to become better problem solvers (U-A-06, U-A-09, U-A-33, U-A-34, U-K-02, U-K-11, U-K-22, U-P-02, U-P-18, U-P-35). One participant said, "The friends also play a great role in the adolescent's lives since they are always socializing" (U-K-03).

Adolescents receive spiritual guidance from places of worship (U-P-02, U-P-28); moreover, religious leaders teach them about forgiveness (U-K-14). It is worth noting social clubs (U-K-13, U-K-34) and government and non-government organisations (U-K-24, U-K-29, U-P-09) that are advising the youth to protect themselves from problems such as "teenage pregnancies" (U-K-12).

To some participants, support systems are very important for nurturing problem-solving skills among young people (U-P-20, U-P-25), as one participant narrated:

I think all, all categories must be able to help a person to have [problem] solving skills. It comes first from home, that is now family, now when you leave home of course there are very many challenges that they will meet at home even in the presence of the parents. So, if you teach them how to solve those problems so you see a child who is able to do that, basically from home then when they reach school, they carry that character from home to school now. To be able now to apply the information which has been given from home then also the peers . . . how have they chosen the peers, what are they encouraging them? (U-K-02)

A few participants acknowledged the role of formal education in enhancing problem-solving abilities among young people. One participant explicitly stated, "An adolescent should be educated that is the first important thing to become a good problem solver" (U-K-28). Another participant said, "Nancy should focus on her studies because from that, she can gain more skills and knowledge to solve her problems" (U-P-23).

Some descriptive analyses of codes related to support systems have been disaggregated by gender, category of participants, and study sites. As can be seen in Figure 20 below, more

women mentioned family, community, and place of worship. On the other hand, more men mentioned school and friends or peers.

Figure 20: Percentage of Excerpts That Include Family, School, Community, Friends or Peers, and Place of Worship, by Gender

Support systems and enabling factors by gender

Category	Women	Men
School/Training	42.6%	57.4%
Place of worship	57.7%	42.3%
Friends/Peers	45.0%	55.0%
Family	52.9%	47.1%
Community/Developmental partners	55.8%	44.2%
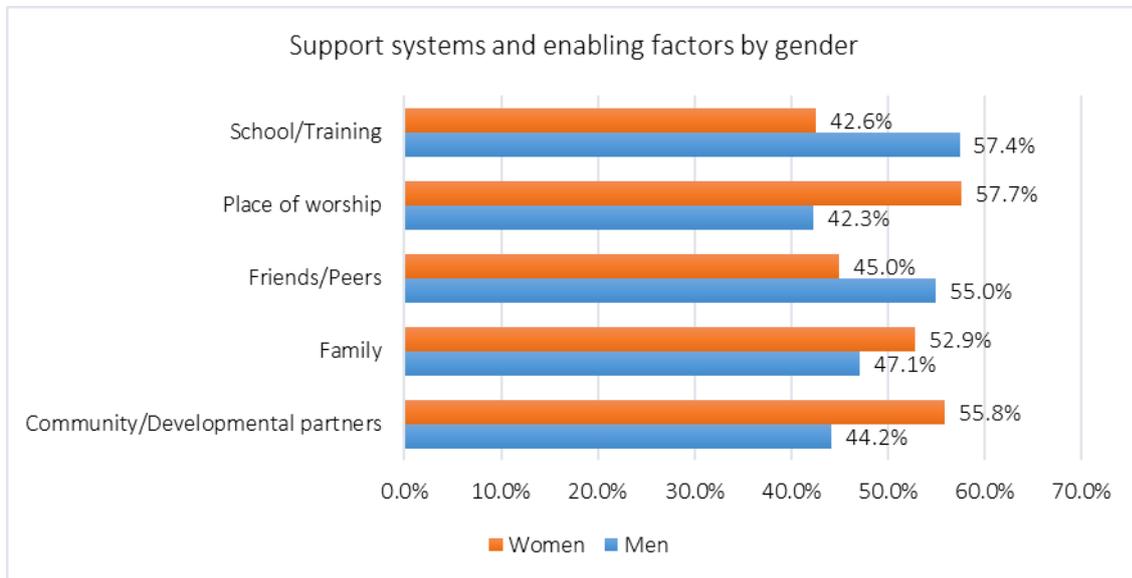
Notably, the codes are mentioned by both men and women and from all categories of participants, though adolescents are contributing less than the other categories, as can be observed in Figure 21 below. For the analysis of codes by district, see Appendix 5.

Figure 21: Percentage of Excerpts That Include Family, School, Community, Friends or Peers, and Place of Worship, by Category
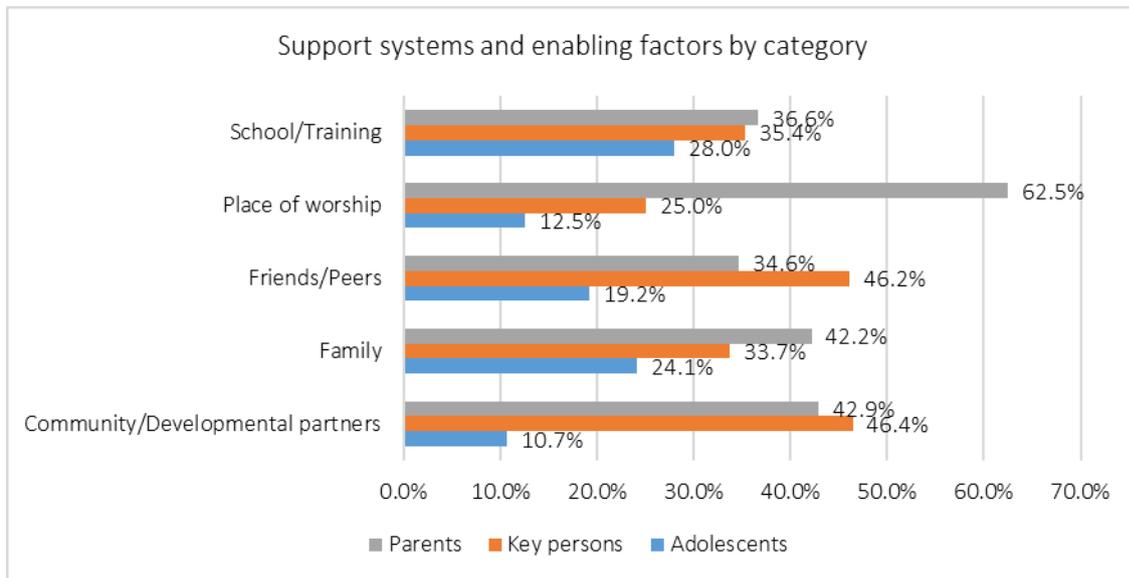
In summary, the participants recognised the role of education and training in helping the youth develop the skill of problem solving. This requires the concerted support from family, community, peers, and places of worship.

3.2.6 Assessment Methods

The analysis of interviews revealed task performance and observation as the major strategies to assess problem-solving abilities of the youth as seen in the table below.

Table 7: Codes That Emerged as Assessment Methods of Problem Solving

CATEGORY: ASSESSMENT METHODS	PARTICIPANTS (SOURCES)		EXCERPTS	
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
Task performance	32	33.68	32	53.33
Observation	31	32.63	33	55.00
Interviews	4	4.21	4	6.67
Total	**95**		**60**	

The total number of excerpts in each code by gender and category can be observed in Figure 22 below.

Figure 22: Frequency of Excerpts That Include Observation, Task Performance, and Interviews by Gender and Category
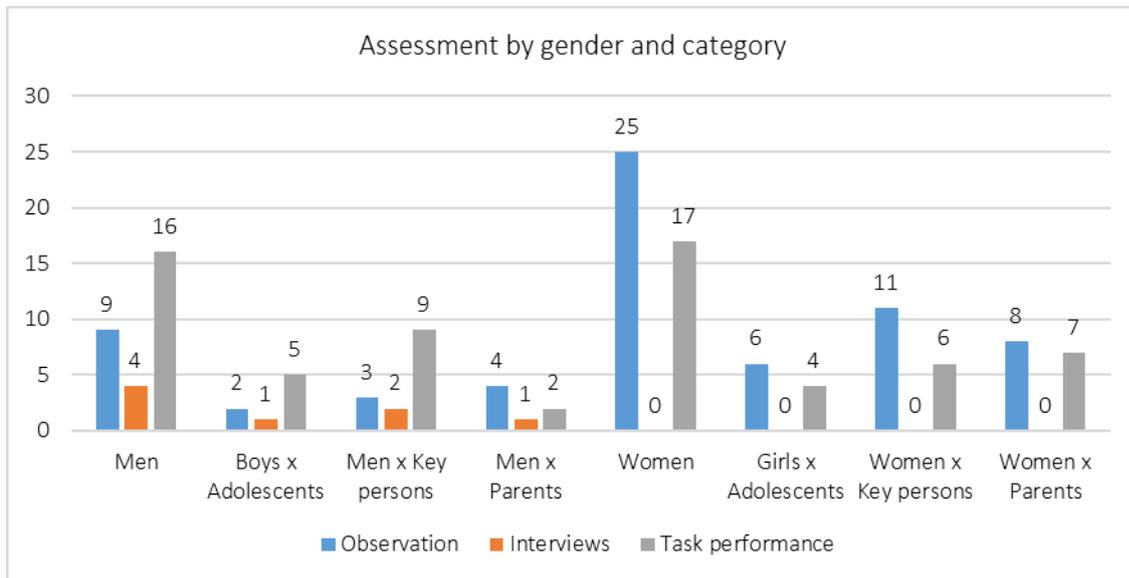
The participants, both men and women from all the categories, mentioned that they believe observation and task performance can be useful strategies for assessing the skill of problem solving among young people. It was mentioned by adolescents, parents, and key persons. When the data is analysed with respect to different sites, observation, and task performance still appear prominently (see Figure 23 below).

Figure 23: Frequency of Excerpts That Include Observation, Task Performance, and Interviews by District
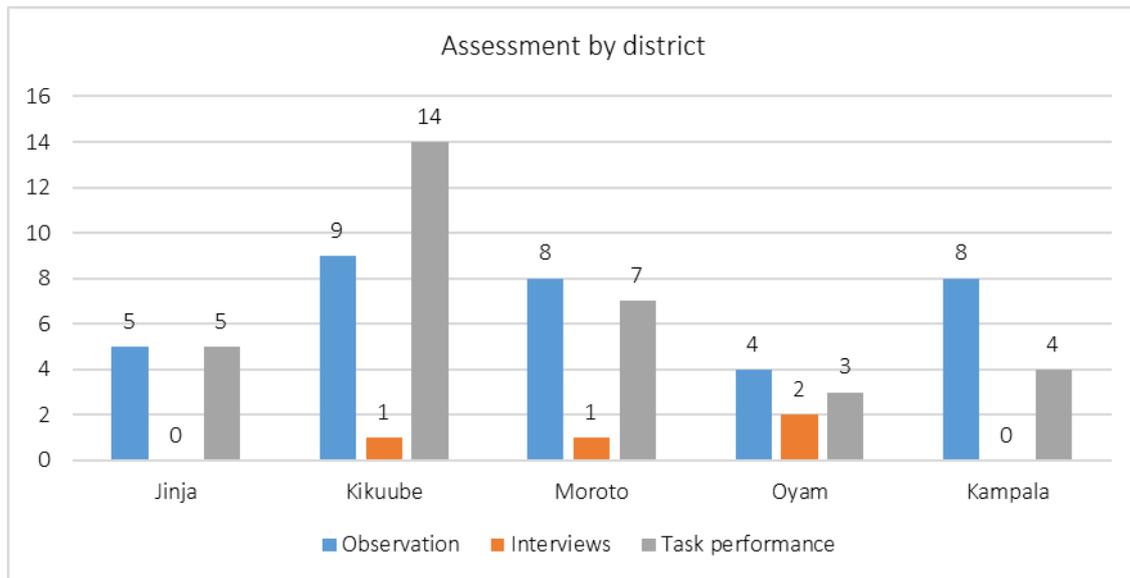
From Table 7, several participants mentioned observation as a way of assessing the skill of problem solving. To them, this means looking at the actions and behaviours of the adolescents (U-A-16, U-A-37, U-K-10, U-K-31). One who is a problem solver will exhibit sharing with others (U-A-26, U-P-03), helping others (U-A-10, U-A-11, U-A-17, U-K-18, U-P-28), patience (U-A-23, U-K-26), and seeking forgiveness from those offended:

> Always, when you have children, you look at the way they behave. Let us say she is with her fellow children and mistakenly knocks the other and they cry. She quickly says "sorry" to the person she has hurt and feels the pain she has caused the fellow. When I see such a child, I always conclude that they are able to solve problems. (U-P-02)

The participants suggested several ways through which task performance can be used to test the skill of problem solving. They describe task performance as giving someone an activity and observing how well they execute it.

Some tasks can be used to test dispositions, such as responsibility. One participant explained, "Like at school, we give tasks and responsibilities. So, by giving them a task to try how they can perform their roles and responsibilities, we can see how basically someone can be good at problem solving" (U-K-05). Another participant narrated the following:

> In the school here, we can just test them by . . . Mostly we give them responsibilities. We test them in the way they carry out their duties in the school. If the head boy is able to meet the rest of the prefects, talk to them. If they're able to maybe inspect the dorm, they're able to solve that issue minus even reaching in the office . . . They're able to solve that issue without reaching in the office, it shows that a person has these skills to handle the problem. (U-P-20)

Other participants suggested giving someone instructions and observing their attitude: "You can give that person instructions to do something and then observe their reaction to see if they respond positively or negatively" (U-P-10). Another said this:

> The way someone is ready to approach a given problem. You see, the attitude that someone gives will tell you that this person is ready to solve something or not. You can see someone when you have brought to him a problem for solving, the way someone will welcome it. If someone does not welcome it or shies away from it, then you know that that person is not ready to solve problems. (U-K-01)

Similarly, one participant mentioned assigning a task, and based on the nature of the response, one can determine if someone has problem-solving skills: "You can assign that person for a task. . . . If they accept to complete that task or duty, then they have problem-solving skills and if they fail then they don't have such skills" (U-P-09).

A few participants suggested assigning challenging situations to adolescents and monitoring the outcome: "One with problem-solving skills will manage them somehow, however difficult they may be. He will not give up" (U-P-35). Another participant stated, "For example, if there are people fighting, you tell this young person to stop these people from fighting and see the reaction he offers. From the results, you can know whether he is a good problem solver" (U-P-13). One proposed the following:

> They can bring a problem to him . . . a big one and people think that he will not manage to solve it but then he brings about an understanding between the conflicting parties and the problem is solved. So, also me at the back of my mind I start to wonder how he managed to handle that problem which means he is a good problem solver. (U-K-14)

The codes relating to assessment of problem solving have been disaggregated by gender, category of participants, and study sites. As can be seen in Figure 24 below, more men mentioned task performance and interviews whereas more women identified observation.

Figure 24: Percentage of Excerpts That Include Observation, Task Performance, and Interviews by Gender

Assessment by gender

	Women	Men
Task performance	46.5%	53.5%
Observation	69.4%	30.6%
Interviews	0.0%	100.0%
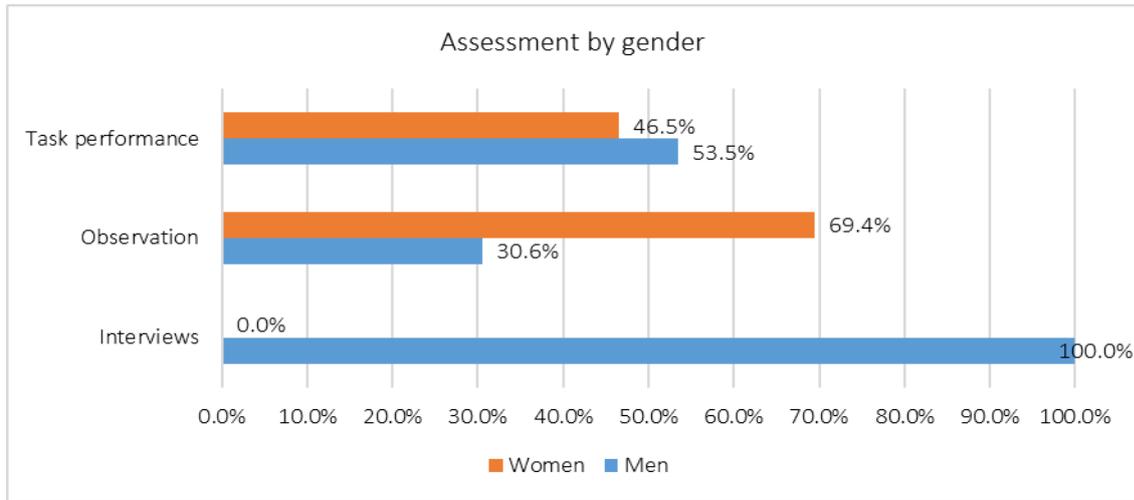
Furthermore, all codes were mentioned by all categories of participants, as can be seen in Figure 25 below. For the analysis of codes by sites, see Appendix 6.

Figure 25: Percentage of Excerpts That Include Observation, Task Performance, and Interviews by Category

Assessment by category

	Parents	Key persons	Adolescents
Task performance	27.3%	45.5%	27.3%
Observation	35.3%	41.2%	23.5%
Interviews	25.0%	50.0%	25.0%
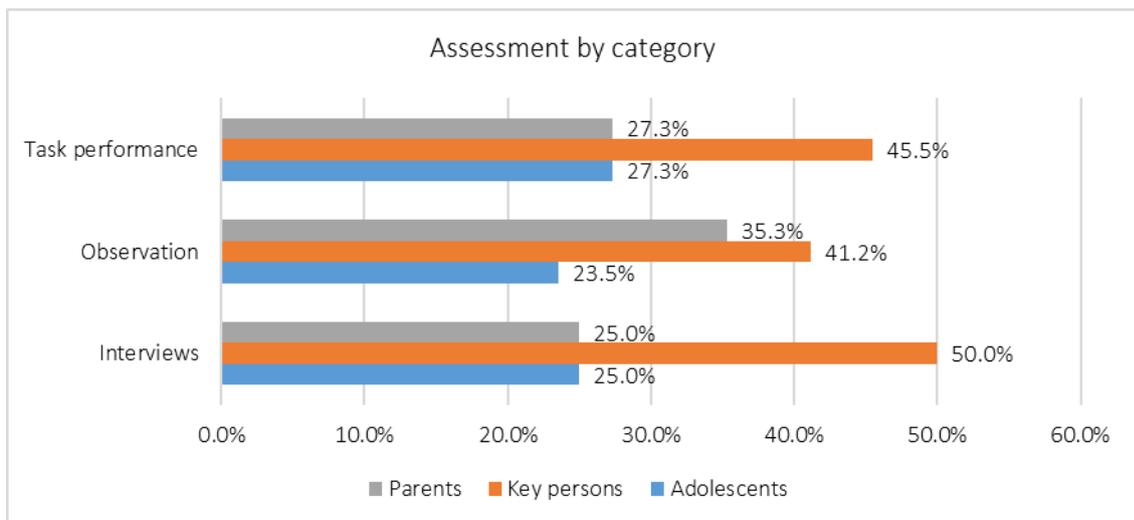
In summary, participants suggest task performance linked with observation as strategies to assess problem-solving abilities. In the same regard, all codes relating to assessment emerged from both men and women, except for interviews, which did not emerge from men category. Similarly, all codes emerged from all categories of participants.

4   CONCLUSIONS

Problem solving is key in Uganda's new competency-based curriculum (CBC). The interviews in this study investigated how Ugandans understand and conceptualize problem solving. Indeed, as emerged from the study, the participants often defined problem solving as the act of finding solutions to personal problems and the problems of others. Moreover, participants identified certain actions that one should take to resolve a challenge. These include identifying the problem, understanding the problem, seeking advice from others, weighing the various alternatives, and choosing the most appropriate solution.

Our review of the literature conceptualizes problem solving as a process that involves very specific steps in the process of dealing with challenges. This might include the identification and exploration of a problem for better understanding; the definition and correct representation of a problem; exploring the viable alternatives and planning for a solution; and eventually implementing a solution and monitoring its effects (Care et al., 2020; Bransford & Stein, 1993; Gick, 1986). Some of these steps were not highlighted by the participants of this study. For instance, they did not mention the need to monitor the impact of the chosen solution to a problem.

While the literature does not report asking for advice when faced with a challenge or helping the members of the community in solving their problems, the conceptualization of this skill that emerged from the study focuses heavily on such aspects. The strong sense of belonging to the community, which is typical of most African cultures, permeates the local conceptualization of problem solving. For instance, in defining this skill, participants suggest that good problem solvers readily ask for advice and are receptive to the suggestions of the most experienced community members.

The findings of this study show that youth ought to possess certain subskills to effectively solve problems. These include good relationship skills, guidance and counselling skills, communication skills, and self-confidence.

Most of the literature elaborates extensively on the skills that are necessary to navigate the process of problem-solving, but it is far less common to find articles that clarify the factors that influence the success of the problem-solving process. The cognitive factors mostly include thinking and reasoning skills and the ability to think ahead. The affective factors presented are related to self-confidence and willingness to approach problems, and to patience or perseverance (Sagir, 2011). Some researchers also underscore these attributes as important (Altun, 2003; Sagir, 2011): a problem solver is "compassionate, generous, persevering, benevolent, altruistic, and sympathetic, thus demonstrating (the value of altruism). Attitudes like being kind, empathic, respectful, honest, trusting, and keeping promises (the value of human dignity)" (Altun, 2003, p. 580).

The participants in this study also consider these elements crucial. For instance, the study revealed a wide range of dispositions that are necessary for solving problems. These include being kind, patient, hardworking, responsible, and willing to be advised. Moreover, young people who are able to solve problems demonstrate good conduct and values such as respect. For young people to develop the skill of problem solving, they need support from various stakeholders such as school, family, community, and development partners, friends or peers,

and places of worship. These should work hand in hand to enhance the development of problem-solving abilities among the youth.

To assess the skill of problem solving in young people, the study suggests methods that incorporate observation and task performance, with the intention of observing dispositions and behaviours.

4.1   Limitations of the Research

The findings presented in this report should be read in light of the limitations presented throughout the processes of planning, data collection, and data analysis.

Regarding the data collection process, the way the interviewers asked the questions had some influence on the participants' responses. Due to the large number of interviews, different styles were used to conduct them. For instance, some direct styles elicited particular responses due to the inclusion of leading explanations.

Researchers encountered two other difficulties in this process: the lack of familiarity with the participants and the challenge of interacting with the adolescents. Specific skills may have been necessary when interviewing adolescents.

The need to use the English language to ensure a common understanding of the sources and to share the findings with the scientific community and other stakeholders posed a challenge to the participants in terms of their understanding of the questions—especially for adolescents and parents. Most of them responded to the questions in their local languages, which introduced the added complexity of translations. The challenge of using the English language as a medium of communication and the need for translation into the local languages meant that during the interviews some nuances and cultural connotations of the words used may have been lost. The findings of this report were reviewed by the Ugandan researchers for cultural sensitivity.

Regarding the process of data analysis, the complexity of the study (including different skills in different countries) affected the treatment of the documents and the codebook. It was impossible to anticipate all the challenges that would arise during the coding and analysis. Qualitative analysis required a systematic and collaborative process among the researchers involved in reading, analysing, and coding the sources. Given the large number of interviews for such a qualitative study, a large number of researchers was involved in the process, increasing the challenges as well as the richness of the analysis. Nevertheless, different strategies were implemented to guarantee the reliability and accuracy of the findings. On the other hand, the team analysed interviews in two rounds in order to achieve sufficient inter-rater reliability. Raters maintained constant communication through daily meetings to share challenges, doubts, and suggestions.

Finally, it would have been beneficial to conduct a second round of interviews with the participants to verify whether their understandings of problem solving were included in the findings of this report.

4.2   Recommendations for Future Research and Assessment

A unique understanding of the problem-solving skills in the Ugandan context has emerged from this study. This should open a new path of research in order to develop more contextualised studies on life skills based on different cultures and contexts.

New strategies and assessment methods should be informed by these new contextualised studies and concepts. Authentic knowledge about the nature of a skill as used in a particular culture could inspire new methods of assessment.

Certain unique aspects of this study seem to call into question the appropriateness and importance of conducting an inductive process. Therefore, more studies, including a qualitative participatory approach as a first step in developing assessment tools, are recommended. This finding supports the benefit of the mixed-method approach in assessment studies.

More iterative processes are also recommended in future studies to verify the preliminary findings.

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APPENDICES

Appendix 1: Percentage of Excerpts That Include Identifying the Problem, Knowing or Understanding the Problem, Facing the Problem, Finding Solutions, Judgement, Sharing, and Fear of God, by District.

Process by district

Process	Kampala	Oyam	Moroto	Kikuube	Jinja
Fear of God	18.2%	0.0%	0.0%	9.1%	72.7%
Judgement	25.0%	25.0%	25.0%	25.0%	0.0%
Sharing	6.9%	18.4%	26.4%	29.9%	18.4%
Finding solutions	15.8%	22.6%	21.9%	26.0%	13.7%
Facing problems	18.7%	22.7%	30.7%	12.0%	16.0%
Knowing/Understanding problem	10.8%	18.5%	47.7%	13.8%	9.2%
Identifying the problem	0.0%	11.1%	37.0%	22.2%	29.6%
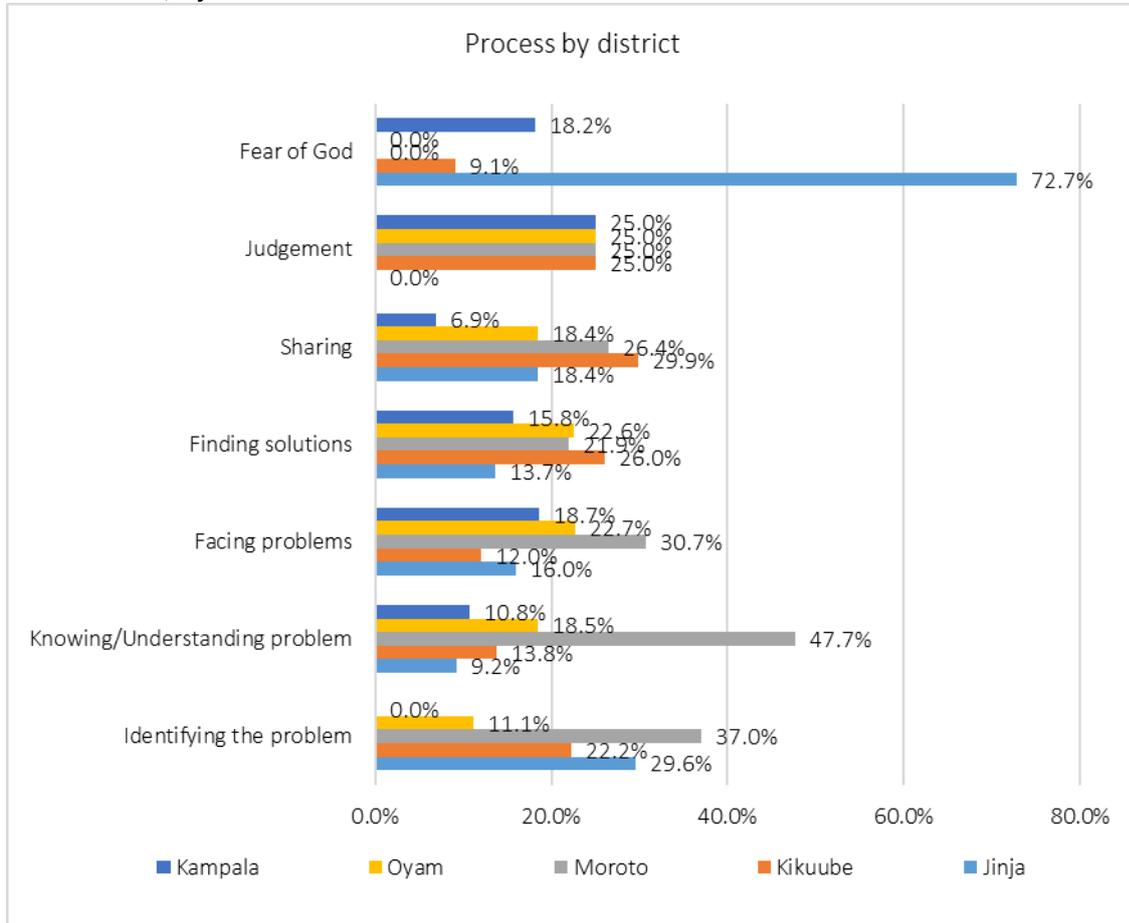
Appendix 2: Percentage of Excerpts That Include Guidance and Counselling, Relationship Skills, Communication (Receptive), Communication (Expressive), Self-Confidence, and Planning, by District.

Sub-skills by district

Sub-skill	Kampala	Oyam	Moroto	Kikuube	Jinja
Self-confidence	37.5%	12.5%	16.7%	16.7%	16.7%
Planning	28.6%	50.0%	0.0%	21.4%	0.0%
Guidance and counselling	22.0%	20.5%	31.8%	14.4%	11.4%
Receptive communication	2.0%	34.7%	16.3%	30.6%	16.3%
Expressive communication	0.0%	9.1%	59.1%	9.1%	22.7%
Relationship skills	12.0%	13.9%	42.6%	14.8%	16.7%
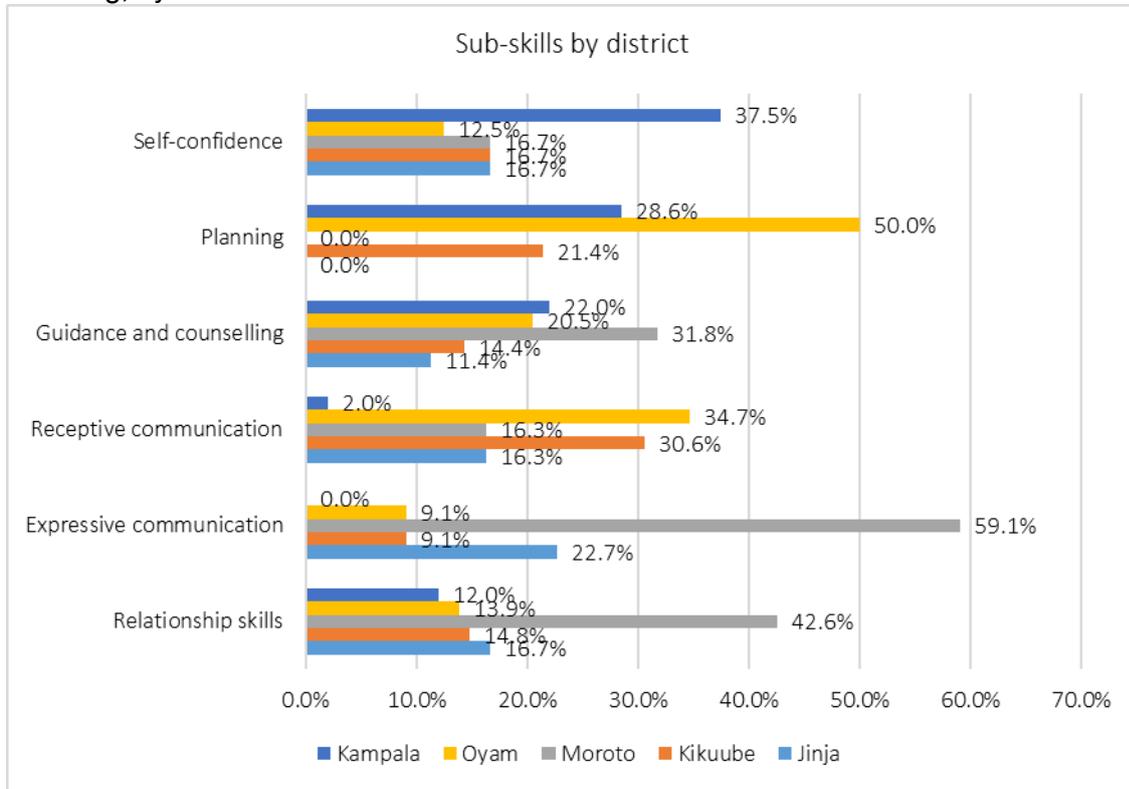
Appendix 3: Percentage of Excerpts That Include Hard Work, Responsibility, Patience, Kindness or Friendliness, Positive Attitude, Willingness to Be Corrected or Advised, Passion, and Perseverance by District.

Dispositions by district

- Willingness to be corrected: 6.3%, 31.3%, 8.3%, 37.5%, 16.7%
- Perseverence: 12.5%, 25.0%, 37.5%, 0.0%, 25.0%
- Hard work: 13.7%, 41.2%, 13.7%, 25.5%, 5.9%
- Passion: 22.2%, 11.1%, 22.2%, 11.1%, 33.3%
- Responsibility: 25.0%, 8.3%, 0.0%, 25.0%, 41.7%
- Positive attitude: 25.0%, 12.5%, 31.3%, 12.5%, 18.8%
- Kindness/Friendliness: 9.6%, 19.2%, 23.1%, 26.9%, 21.2%
- Patience/Time: 3.4%, 31.0%, 20.7%, 6.9%, 37.9%

Legend: Kampala, Oyam, Moroto, Kikuube, Jinja
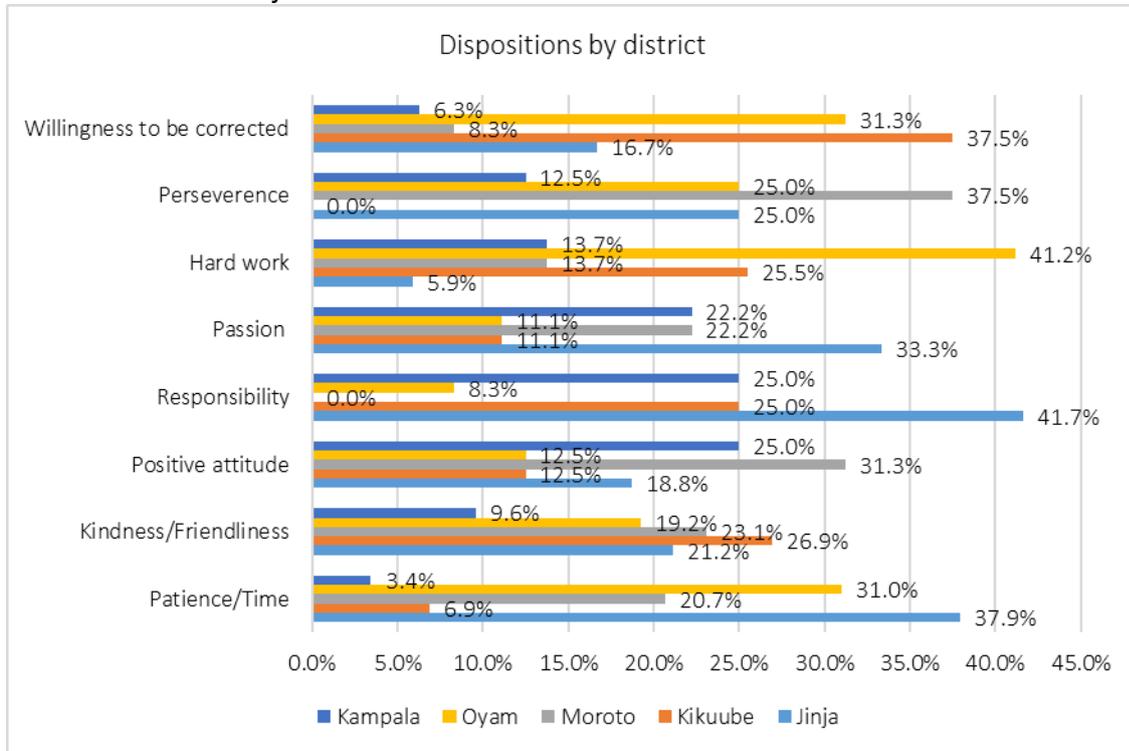
Appendix 4: Percentage of Excerpts That Include Positive Conduct, Discipline, Respect, Wisdom, Trust, Humility, and Confidentiality, by District.

Behaviours and values by district

Behaviour/Value	Kampala	Oyam	Moroto	Kikuube	Jinja
Wisdom	0.0%	0.0%	0.0%	60.0%	40.0%
Trust/Honesty	0.0%	33.3%	0.0%	33.3%	33.3%
Humility	33.3%	0.0%	0.0%	16.7%	50.0%
Confidentiality	0.0%	18.2%	9.1%	36.4%	36.4%
Respect	13.7%	13.7%	33.3%	13.7%	25.5%
Discipline	37.5%	12.5%	6.3%	31.3%	12.5%
Positive conduct	9.6%	18.1%	28.9%	26.5%	16.9%
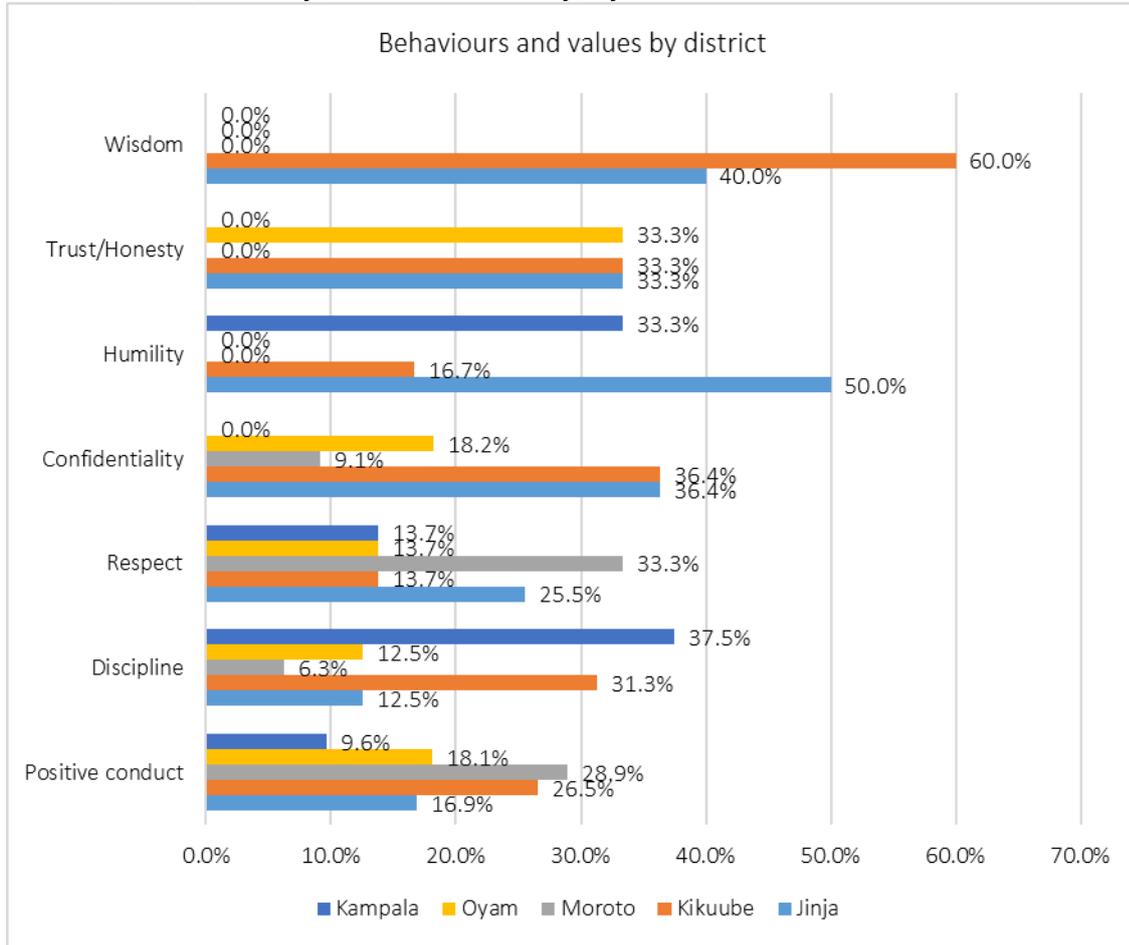
Appendix 5: Percentage of Excerpts That Include Family, School, Community, Friends or Peers, and Place of Worship, by District

Support systems and enabling factors by district

School/Training: 9.8%, 24.4%, 24.4%, 26.8%, 14.6%
Place of worship: 12.5%, 37.5%, 12.5%, 25.0%, 12.5%
Friends/Peers: 19.2%, 3.8%, 19.2%, 26.9%, 30.8%
Family: 15.7%, 21.7%, 15.7%, 27.7%, 19.3%
Community/Developmental partners: 17.9%, 23.2%, 23.2%, 32.1%, 3.6%

Kampala Oyam Moroto Kikuube Jinja
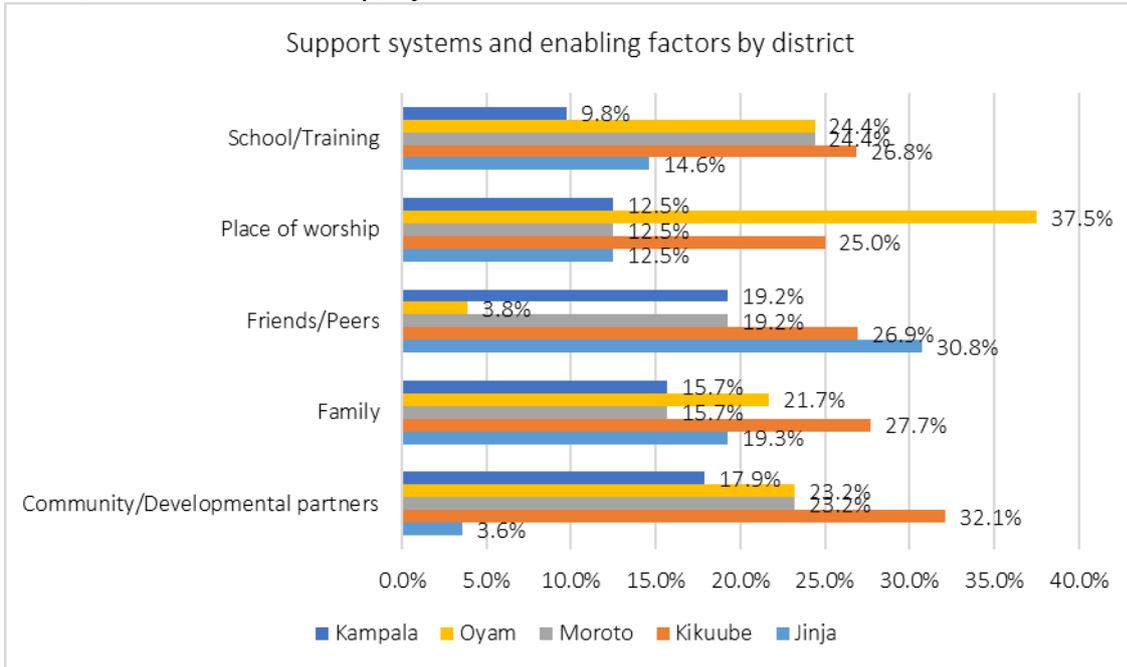
Appendix 6: Percentage of Excerpts That Include Observation, Task Performance, and Interviews by District

Assessment by district

Kampala: 12.1%, 23.5%, 0.0%
Oyam: 9.1%, 11.8%, 50.0%
Moroto: 21.2%, 23.5%, 25.0%
Kikuube: 42.4%, 26.5%, 25.0%
Jinja: 15.2%, 14.7%, 0.0%

Task performance Observation Interviews

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Learning Initiative

Wellspring
Philanthropic Fund

echidna giving

imaginable
futures

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GIUSSANI
INSTITUTE
OF HIGHER
EDUCATION

uwezo
UGANDA

Zizi Afrique
Foundation

GIRLS LIVELIHOOD
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