

**Preliminary Review of Potential Educational Indicators:
An Evaluation, Rating and Analysis**

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ABSTRACT

This report outlines 16 educational indicators for potential inclusion in Fabretto's Monitoring and Evaluation (M&E) System. We reviewed each indicator using a set of evaluative criteria that the team established. The criteria are based on a wide spectrum of variables and issues related to selection, implementation, and audience among other areas: (1) Alignment with Fabretto's Mission and Objectives; (2) Financial Sustainability; (3) Necessary Resources; (4) Audience; (5) National and International Relevance; (6) Business Opportunity; (7) Existing Expertise; and (8) Current Donor Commitment. Our hope is that the evaluation, ratings and analysis will assist Fabretto as it refines its M&E System. To facilitate the refinement, we have identified high, mid, and low priority indicators for Fabretto's consideration. *High priority indicators* include the Gender Parity Index, teacher/ tutor competency percentage, and the Coefficient of Efficiency. *Mid priority indicators* include student transition rates, experience of SAT teachers, student graduate employment rates, gross intake ratios, and the average starting salary ratio for teachers. Finally, *low priority indicators* include measures of program equity, employment acquired by student graduates, and education levels of students and parents.

The current report represents the first phase (Evaluation of Potential Indicators) in a four-step evaluation process: (1) Phase One: Criteria Development and Initial Evaluation of Potential Indicators; (2) Phase Two: Continued Evaluation of Potential Indicators; (3) Phase Three: Evaluation of Fabretto's Existing Indicators; (4) Phase Four: Evaluation of Processes and Organization; and (5) Phase Five: Final Analysis and Overall Recommendations. Upon completing these five phases, the final evaluation report will provide Fabretto with a comprehensive analysis of the current state of and future possibilities for their Monitoring and Evaluation System and its role within the organization.

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I. JUSTIFICATION AND METHODOLOGY

The purpose of this report is to analyze and modify potential indicators useful in the Monitoring and Evaluation (M&E) of Fabretto. We have created a list of criteria, subjected to review and refinement by Fabretto staff, rated on a 1-10 scale to analyze each indicator using a standardized rubric. The scale represents each indicator's relationship to the ideal (10). These factors take into account Fabretto's goals, mission statement, relevance to donors, and feasibility of implementation among other foci. The specific criteria include: (1) *Alignment with Fabretto's Mission and Objectives*; (2) *Financial Sustainability*; (3) *Necessary Resources*; (4) *Audience*; (5) *National and International Relevance*; (6) *Business Opportunity*; (7) *Existing Expertise*; and (8) *Current Donor Commitment*. "Alignment with Fabretto's Mission and Objectives" measures the indicator's compatibility with the mission, programmatic goals and specific objectives of the organization. "Financial Sustainability" assesses the cost of implementing the indicator over time after the initial implementation expenditures. "Necessary resources," on the other hand, takes into account the relative amounts of time and resources needed for initial implementation, with a high rating signifying a low cost to implement. "Audience" addresses potential donors who may take interest in this specific indicator. "National and International Relevance" refers to the indicator's position with respect to the varied contexts of educational, social and economic development discourses as a means to locate each indicator within the larger conversation of development at the local, regional, national and international levels. "Business Opportunity" addresses potential new donor involvement associated with potential indicator usage. "Existing Expertise" measures the skills needed to implement a given indicator compared with those that may already be available at Fabretto, giving a high score to an indicator that requires fewer additional skills' training.

To compute the final ratings of indicators, the raw scores (1-10) were weighted from 4 to 10 according to our suggested importance to Fabretto. However, such level of priority would be updated in future phases as feedback is received from Fabretto's main stakeholders. Additionally, "Current Commitment with Donor" is an exceptional criterion because it represents formalized arrangement with an outside individual or organization. Therefore, it is given a score of 0, 35, or 70 for each indicator. A zero is given to an indicator that is not part of or directly related to an existing indicator commitment. A score of 35 is awarded to an indicator that is a component of or directly related to a current commitment and a score of 70 is given to an indicator that is closely related or identical to a required indicator. Finally, each indicator analysis includes specific comments to further contextualize the rating.

In a larger scope, Fabretto's M&E program attempts to streamline and generally improve the organization's efforts to combat poverty and improve the lives of individuals and communities through education. A wide variety of literature has supported the conclusion that investment in education can bring substantial returns, to the individual, community and nation at large (Orazem, Glewwe & Patrinos, 2009, p. 13; UNESCO, 2010; Psacharopoulos & Patrinos, 2002). One of the United Nations (2012) *Millennium*

Development Goals, "Goal 2: Achieve universal primary education" (p. 16) targets by 2015 that all boys and girls complete a full course of primary schooling. Additionally, in its stringently prioritized list of five global goals to reduce poverty, the Copenhagen Consensus Center has placed "boost preprimary education" at number 3, arguing that for each dollar of investment in education, \$30 of benefits will be created (Ridley, p. 2, 2014). Moreover, there are lower direct costs of schooling for younger ages, with primary level per pupil expenditures averaging 55% of that at the secondary level in low-income countries (Glewwe & Kremer, 2006 in Orazem, Glewwe & Patrinos, 2009, p.13). "Of about 112 million children born annually in developing countries, 23% or about 26 million will not complete primary school. Of these 11.6 million will never start school, and getting them to complete the primary cycle will be costly. However, 14.4 million or 55% of those failing to complete five years of schooling will start school but drop out before completing the grade five." (Orazem et al., p. 4).

A range of impacts of education have been cited, including raising an individual's total earnings by up to 10%, (UNESCO, 2010) raising the individual's ability to obtain skills later in life, and helping individuals to avoid serious issues with drugs, alcohol, and crime (Orazem et al., 2009). Based on work by Orazem and colleagues (2009), "The returns are so commonly found and are sufficiently large to justify the Millennium Development Goal that every child should be given at least a primary education, the schooling level that nearly guarantees lifetime attainment of literacy in every country" (p.4).

Fabretto's efforts lie within this context of international educational development, and go even further to provide school feeding and nutrition programs in order to supplement their education programs. The Millennium Goals, Copenhagen Consensus Center, and a plethora of organizations and studies support the importance of nutrition in both combating poverty and improving education (i.e. school enrollment and student performance). Harold Alderman and Donald Bundy (2011) argue that food and nutrition programs are an important compliment to education initiatives, and can "increase human capital investments while also providing support to poor households." (p. 217). As Fabretto continues to grow and participate in the global movement to tackle poverty through education and nutrition initiatives, it is crucial that they are deeply engaged and participating in the international discussions around (and reporting on) the key challenges, goals, strategies, and influential indicators.

TABLE 1: WEIGHTED CRITERIA FOR INDICATOR EVALUATION

		<i>How does the indicator align with Fabretto's mission, objective, expected outcomes?</i>	<i>What are the economic costs covered by Fabretto and/or an outside donor both short and long-term?</i>	<i>What resources (financial, human, logistical) are needed to implement?</i>	<i>What are the audiences for the indicator?</i>	<i>How does the indicator fit within the national and international landscape of development and Monitoring and Evaluation?</i>	<i>To what extent does the indicator possibly open up new opportunities for partnership and support?</i>	<i>Does Fabretto have the expertise to utilize the indicator?</i>	<i>Is this indicator required by a current donor to Fabretto?</i>
	<i>Indicator</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment
Weight*	School Life Expectancy	10	9	8	7	6	5	4	0/35/70**

*10 = Most important / 1 = Least important

** 0 = No component of an existing commitment is represented by the indicator

35 = At least one component of an existing commitment is represented by the indicator

70 = The indicator is currently required by an existing commitment

II. LIST OF INDICATORS

GROUPED BY EXPECTED COST OF IMPLEMENTATION¹

Low-Cost Indicators

1. Percentage of Female Teachers	<i>p. 7</i>
2. Gender Parity Index (GPI)	<i>p. 9</i>
3. Ratio of Funds per School per School Population	<i>p. 11</i>
4. Average Teaching Experience of SAT Tutor	<i>p. 13</i>
5. Teacher / Tutor Competency Percentage	<i>p. 15</i>
6. School Life Expectancy	<i>p. 17</i>
7. Transition Rate	<i>p. 19</i>
8. Coefficient of Efficiency	<i>p. 21</i>

Mid-Cost Indicators

9. Program Offerings in Given Learning Domain	<i>p. 23</i>
10. Average Starting Salary Ratio of Teachers	<i>p. 26</i>

High-Cost Indicators

11. Gross Intake Ratio (GIR)	<i>p. 28</i>
12. Percentage Distribution of Enrollment in Secondary Education by Orientation of Education Program	<i>p. 30</i>
13. Employment acquired by SAT program participants	<i>p. 32</i>
14. SAT and Vocational Life Skills Programs vs. Skills demanded by Employers	<i>p. 34</i>
15. Education Levels of Students vs. Parents	<i>p. 36</i>
16. Student Graduate Employment Rate	<i>p. 38</i>

¹ These categorizations were derived using the following scales:
Low-Cost Indicators: 7-10 on Raw Score for Necessary Resources
Mid-Cost Indicators: 4-6 on Raw Score for Necessary Resources
High-Cost Indicators: 0-3 on Raw Score for Necessary Resources

III. DETAILED DESCRIPTIONS OF INDICATORS

1. PERCENTAGE OF FEMALE TEACHERS

Definition: The number of female teachers at a given level of education expressed as a percentage of the total number of teachers (male and female) at the same level in a given school year (UNESCO Institute for Statistics, 2009).

Purpose: To show the gender composition of the teaching force. It helps also in assessing the need for opportunities and/or incentives to encourage women to participate in teaching activities at a given level of education.

Calculation method: Divide the total number of female teachers at a given level of education by the total number of teachers (male and female) at the same level in a given school year, and multiply by 100.

Formula:

FT/T

FT – Number of female teachers in educational level or program

T – Total number of teachers (male and female) in educational level or program

Process (incl. data required/data sources): This indicator requires data on the number of teachers by gender. It can be found in school census, surveys, or teachers' records.

Interpretations: Percentage of female teachers approaching 50% indicates gender parity in the composition of the teaching force. A value of greater than 50% reveals more opportunities and/or preference for women to participate in teaching activities at a specific level, grade or program of education.

Limitations: This indicator does not measure the quality of teaching.

Justification: This indicator is recommended by UNESCO and will demonstrate Fabretto's commitment to gender parity in the teaching force. It can be applied to other stakeholders/participants in the program.

1. PERCENTAGE OF FEMALE TEACHERS

	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Percentage of female indicators	School survey or school census	8	7	7	7	8	4	5		
Weighted Score			80	63	56	49	48	20	20	0 **	336
Comments			Fabretto promotes collaboration and equality in all facets of its program.	This is low-cost and easy to implement long-term.	This is a relatively low-cost indicator, but may require some time for data collection.	The donor audience will be interested in gender parity in various aspects of Fabretto's programs	UNESCO listed this among 50 recommended international education indicators. Gender equality is a prominent concern in international education.	Focusing on gender equality and female empowerment may open new avenues for Fabretto.	Fabretto likely has existing data on employed female teachers.	No donor currently requires this indicator.	.

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

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35 = At least one component of an existing commitment is represented by the indicator

70 = The indicator is currently required by an existing commitment

2. GENDER PARITY INDEX (GPI)

Definition: Ratio of female to male values of a given indicator. This can be attached to indicators involving student and teacher populations, such as student performance, attendance, retention, access to ICTs, and more (UNESCO Institute for Statistics, 2009).

Purpose: The GPI measures progress towards gender parity in education participation and/or learning opportunities available for women in relation to those available to men. It also reflects the level of women’s empowerment achieved through the program.

Calculation method: Divide the female value of a given indicator by that of the male.

Formula:

$$GPI = F/M$$

F = Female value of a given indicator; *Example: 50 female students enrolled in primary school A*

M = Male value of a given indicator; *Example: 45 male students enrolled in primary school A*

Process (incl. data required/data sources): Female and male values of a given indicator are required.

Interpretations: From UNESCO Technical Guidelines on Education Indicators: “A GPI equal to 1 indicates parity between females and males. In general, a value less than 1 indicates disparity in favor of boys/men and a value greater than 1 indicates disparity in favor of girls/women. However, the interpretation should be the other way round for indicators that should ideally approach 0% (e.g. repetition, dropout, illiteracy rates, etc.). In these cases, a GPI of less than 1 indicates a disparity in favor of girls/women and a value greater than 1 indicates a disparity in favor of boys/men” (UNESCO Institute for Statistics, 2009).

Limitations: The index does not demonstrate whether disparities are due to a random improvement in one gender group, or of a more fundamental issue in the program.

Justification: Fabretto’s mission is to improve access to quality education for all children; and it promotes collaboration and equality in all facets of its program. The GPI is a widely-used socioeconomic index used by UNICEF, UNESCO, and education-related NGOS, often to measure the relative access to education of males and females in a nation or community. Many international donors are eager to see indicators that demonstrate female access to education, given the historic gender gap in global education.

2. GENDER PARITY INDEX (GPI)

	Indicator	Instrument	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	GPI	Existing data	10	10	10	10	10	8	8		
Weighted Score			100	90	80	70	60	40	32	0**	472
Comments			Fabretto promotes collaboration and equality in all facets of its program.	Low-cost indicator that can be measured on a regular basis.	This is a low cost indicator that relies on collected data for existing indicators.	International development groups and donors highly value indicators that demonstrate female access to education.	UNESCO, UNICEF, and other international groups employ the GPI indicator	Focusing on gender equality and female empowerment may open new avenues for Fabretto.	Fabretto has not used the GPI, but it has the expertise necessary to calculate it.	No donor currently requires GPI outcomes.	.

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

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 70 = The indicator is currently required by an existing commitment

3. RATIO OF FUNDS PER SCHOOL PER SCHOOL POPULATION (MEASURING EQUITY WITHIN THE PROGRAM):

Definition: Total funds invested in School A divided by the Student Population of School A. The result can be compared against average funds invested in all students in the program (funds per capita) (LMTF, 2013).

Purpose: To measure equity in investments among all schools in the program. *An alternative indicator to measure equity is comparing the number offerings at each school (classes, extracurricular activities, teacher training workshops), per school population (students), across schools.*

Calculation method: Divide the total funds spent on school A and divide it by the population of School A. The average funds invested in program participants is calculated by dividing the total number of funds spent on all schools by the total number of students in the program. *Since Fabretto has different groups of schools with different levels of engagement, the indicator may need to compare within one grouping of schools.*

Formula:

$$F^A/P^A \text{ compared to } F^T/P^T$$

F^A – Funds invested in school A

P^A – population of school A (students)

F^T – Total funds invested in all schools

P^T – Population of all schools (students)

Process (incl. data required/data sources): This indicator requires data on the population of each school and the funds directed to each school. All data can be found in program records.

Interpretations: If the ratio F^A/P^A differs dramatically from F^T/P^T there is evidence of inequity in the program.

Limitations: Schools may receive different amounts of funds for a variety of reasons, including donor preferences, variances in programming, geography, and different needs among other variables.

Justification: UNESCO’s Institute for Statistics and the Center for Universal Education at Brookings recommend that all nations investigate equity within their education systems and programs.

3. RATIO OF FUNDS PER SCHOOL PER SCHOOL POPULATION

	Indicator	Instrument	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Ratio of funds per school per school population	Existing scholastic data, financial records	8	9	7	8	7	6	8		
Weighted Score			80	81	56	56	42	30	32	0**	303
Comments			Fabretto aims to improve lives across all partner communities.	This is a low cost and important indicator to measure regularly.	There are limited costs. All data should already be collected, but time is required to calculate the ratio.	It will be informative internally and externally to investigate the distribution of funds among schools.	UNESCO and Brookings emphasize equity in national programs, but it can be applied at the organizational level.	Having equitable programs results in donor confidence which may lead to expanded opportunities	The indicator is relatively simple to calculate and will not require additional expertise.	No donors currently measure for equity in the program.	

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- 70 = The indicator is currently required by an existing commitment

4. AVERAGE PREVIOUS TEACHING EXPERIENCE OF SAT TEACHER/TUTOR

Definition: Amount in years of previous experience for each SAT teacher/tutor employed by Fabretto before being hired by Fabretto (UNESCO Institute for Statistics, 2006).

Purpose: This indicator will help evaluate the hiring practices of Fabretto and the competency of the SAT teachers/tutors hired.

Calculation method: This indicator is simply the amount in years of previous experience each SAT teacher/tutor employed by Fabretto has had before joining Fabretto.

Formula:

$$Y_{TE}/N_T$$

Y_{TE} – the total number of years of previous experience all the teachers/tutors employed by Fabretto have had before hired by Fabretto

N_T – the total number of teachers/tutors employed by Fabretto

Process (incl. data required/data sources): The data will be gathered from Fabretto’s teacher/tutor records. If previous employment information is not contained in Fabretto’s records, a simple survey can be disseminated among the staff to obtain this information.

Interpretations: If Fabretto is hiring teachers/tutors with previous teaching experience, credibility is lent to the idea that Fabretto is hiring competent teachers/tutors for their SAT program.

Limitations: The previous experience of a teacher/tutor may not fully represent the competency of the teacher/tutor. For example, excellent inexperienced teachers exist as do subpar experienced ones.

Justification: This indicator is recommended by UNESCO’s Institute for Statistics. It is not complicated to implement, and can be of great use to the program.

4. AVERAGE TEACHING EXPERIENCE OF SAT TEACHER/TUTOR

	Indicator	Instrument	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Experience of SAT Teacher	Existing Fabretto employee records or simple surveys	7	9	10	5	9	6	10		
Weighted Score			70	81	80	35	54	30	40	35**	390
Comments			Fabretto hiring competent staff links with their objective to “deliver quality education.”	Very simple and cost effective to implement each year	Very cost effective. Will require at most a simple survey to be distributed. At the least, Fabretto already has access to the necessary data.	Donors have not specifically requested this information for their funding	Recommended by UNESCO’s Institute for Statistics.	Donors should take note of Fabretto if it is found that they hire experienced teachers.	No expertise necessary	Donors have not specifically requested this information for their funding, but this metric links closely to the tutor-related metrics that are requested, (USAID).	

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

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5. TEACHER/TUTOR COMPETENCY PERCENTAGE

Definition: The percentage of SAT teachers/tutors hired by Fabretto that meet the Nicaraguan Department of Education's standards and requirements (UNESCO Institute for Statistics, 2006).

Purpose: To evaluate the competency and qualifications of the SAT teachers/tutors hired by Fabretto.

Calculation method: Calculate the number of teachers and tutors hired by Fabretto who meet the qualification requirements set by the Nicaraguan Department of Education and divide by the total number of teachers and tutors hired by Fabretto.

Formula:

$$N_Q/N_T$$

N_Q – the total number of teachers/tutors employed by Fabretto who meet the qualification requirements set down by the Nicaraguan government

N_T – the total number of teachers/tutors employed by Fabretto

Process (incl. data required/data sources): Will require the Nicaraguan Department of Education's standards and requirements for teachers in government-funded schools. Also will require each Fabretto's teacher/tutor's qualifications and highest levels of education attained.

Interpretations: If Fabretto is hiring teachers/tutors who meet the government standards for teaching, credibility is lent to the idea that Fabretto's staff is qualified and competent.

Limitations: A qualified teacher by the Nicaraguan government's standards may not be a competent one. This indicator should not be used to determine precisely whether a specific teacher is competent or not. However, for evaluating the SAT program as a whole, this indicator is a useful one.

5. TEACHER/TUTOR COMPETENCY PERCENTAGE

	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Teacher/ tutor competency percentage	Existing Fabretto employee records or simple surveys	8	9	10	5	9	7	10		
Weighted Score			80	81	80	35	54	35	40	35	440
Comments			Fabretto hiring competent staff links with their objective to “deliver quality education.”	Very simple and cost effective to implement each year	Very cost effective.. Fabretto already has access to the necessary data.	Donors have not specifically requested this information for their funding	Recommended by UNESCO’s Institute for Statistics.	Donors should take note of Fabretto if it is found that they hire experienced teachers.	No expertise necessary	Donors have not specifically requested this information for their funding, but this metric links closely to the tutor-related metrics that are requested (USAID).	

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

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6. School Life Expectancy (SLE)

Definition: The Total Number of years of schooling which a child of a certain age can expect to receive in the future, assuming that the probability of his or her being enrolled in school at any particular age is equal to the current enrollment ratio for that age (UNESCO Institute for Statistics, 2009).

Purpose: To show the overall level of development of an educational system in terms of the average number of years of schooling that the education system offers to the eligible population, including those who never enter school.

Calculation method: For a child of a certain age a , the school life expectancy is calculated as the sum of the age specific enrolment rates for the levels of education specified. The part of the enrolment that is not distributed by age is divided by the school age population for the level of education they are enrolled in, and multiplied by the duration of that level of education. The result is then added to the sum of the age-specific enrollment rates.

$$SLE_a^t = \sum_{i=a}^n \frac{E_i^t}{P_i^t} + \sum_{l=level_education} \frac{E_{unknown}^t}{P_{age_of_level_l}^t \cdot D_l}$$

Formula: ...

SLE_a^t=a School life expectancy at an age a in year t , E_i^t =i Enrolment of the population of age i (for $i = a, a+1, \dots, n$) in school year t ; n denotes the theoretical upper age-limit of schooling, $t=i$ P Population of age i in school year t . Age of level l denotes the total school age population of that level, D Theoretical duration of level

Process (incl. data required/data sources): Enrolment by age and of age unknown at all levels of education; population by single years of age or alternatively the age-specific enrolment ratios for all levels of education. Sources: School register, school survey or census data for data on enrolment by age, and estimates for school-age population.

Interpretations: A relatively high SLE indicates greater probability for children to spend more years in education and higher overall retention within the education system. It must be noted that the expected number of years does not necessarily coincide with the expected number of grades of education completed, because of repetition. Since school life expectancy is an average based on participation in different levels of education, the expected number of years of schooling may be pulled down by the magnitude of children who never go to school.

Limitations: Requires complete and reliable data on enrollment and population by single-years of age corresponding to all levels of education for the entire duration of schooling, including tertiary education. The essential data required for this indicator may be challenging to obtain.

6. School Life Expectancy (SLE)

	Indicator	Instrument	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	School Life Expectancy	Enrolment age, school register, census data	8	9	8	5	9	6	7		
Weighted Score			80	81	64	35	54	30	28	35**	407
Comments			Links with the education initiatives highlighting potential areas to improve or show strength	Can easily added to existing indicators using a minimal amount of Fabretto's funds	The cost is low due to the ease of gathering data and calculation of the formula	Many donors are interested in the school retention rates, and International organizations	UNESCO indicator	This is a highly used indicator supported by UNESCO	The data should be in the school register	Donors, such as the Tessien Family and Tim Roof, like to see the strength of the education system via statistics on retention and enrollment.	

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

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 35 = At least one component of an existing commitment is represented by the indicator
 70 = The indicator is currently required by an existing commitment

7. Transition Rate

Definition: The number of students admitted to the first grade of a higher level of education in a given year, expressed as a percentage of the number of students enrolled in the final grade of the lower level of education in the previous year (UNESCO Institute for Statistics, 2009).

Purpose: To convey information on the degree of access or transition from one cycle or level of education to a higher one. Viewed from the lower level of education, it is considered as an output indicator, viewed from the higher educational level, it constitutes an indicator of access.

Calculation method: Divide the number of new entrants in the first grade of the specified higher cycle or level of education by the number of pupils who were enrolled in the final grade of the preceding cycle or level of education in the previous school year, and multiply by 100.

$$TR_{h,h+1}^t = \frac{E_{h+1,1}^{t+1} - R_{h+1,1}^{t+1}}{E_{h,n}^t} * 100$$

Where:

$TR_{h,h+1}^t$ Transition rate (from cycle or level of education **h** to **h+1** in school year **t**)

$E_{h+1,1}^{t+1}$ Number of pupils enrolled in the **first** grade at level of education **h+1** in school year **t+1**

$R_{h+1,1}^{t+1}$ Number of pupils repeating the **first** grade at level of education **h+1** in school year **t+1**

$E_{h,n}^t$ Number of pupils enrolled in **final** grade **n** at level of education **h** in school year **t**

Formula:

Process (incl. data required/data sources): Enrollment in the final grade of a given cycle or level of education for year **t** and new entrants to (or enrollment minus repeaters) the first grade of the higher cycle or level of education for year **t+1**. School register, school survey or census.

Interpretations: High transition rates indicate a high level of access to or transition from one level of education to the next. They also reflect the intake capacity of the next level of education. Inversely, low transition rates can signal problems in the bridging between two cycles or levels of education, due to either deficiencies in the examination system, or inadequate admission capacity in the higher cycle or level of education, or both.

Limitations: This indicator can be distorted by incorrect distinction between new entrants and repeaters, especially in the first grade of the specified higher level of education.

Justification: The Transition Rate indicator highlights specifically the retention and functioning capacity of the school system itself. These are key indicators that donors look for when donating.

7. Transition Rate

	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Transition Rate	Enrolment age data, school register	7	8	8	7	9	4	7		
Weighted Score			70	72	64	49	54	20	28	35	392
Comments			Links with the education initiatives of the Primary Program "to assure preparedness for secondary school	Easily added to existing indicators using a minimal amount of Fabretto's funds	The cost is low due to the ease of gathering data and calculation of the formula	Donors are interested in the strength of the school system and its retention of students	UNESCO indicator, NGOs, ERNWACA (Educational Research Network for West and Central Africa)	This is a highly used indicator supported by UNESCO	The data should be in the school register, indicator used in 2010	Donors, such as the Tessien Family, Tim Roof and USAID, like to see the strength of the education system via statistics on retention and enrollment.	

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

** 0 = No component of an existing commitment is represented by the indicator
 35 = At least one component of an existing commitment is represented by the indicator
 70 = The indicator is currently required by an existing commitment

8. Coefficient of Efficiency

Definition: How many students should ideally graduate to the next level of school compared to how many students actually graduate (UNESCO Institute for Statistics, 2009).

Purpose: Shows the efficiency of the education system, showing the quantity of dropouts and students who have to repeat a year in school.

Calculation method: Divide the actual number of graduates by the ideal number of graduates, and then multiply by 100.

$$CE_g = \frac{\sum_{j=n}^{n+k} G_{g,j} * n}{\left\{ \sum_{j=n}^{n+k} G_{g,j} * j \right\} + \left\{ \sum_{j=1}^{n+k} D_{g,j} * j \right\}} * 100$$

CE_g	Coefficient of Efficiency for a pupil-cohort g
$G_{g,n}$	Number of pupils graduating from cohort g in final grade n after n years of study (without repetition)
$G_{g,j}$	Number of pupils graduating from cohort g in final grade n after j years of study
$D_{g,j}$	Number of pupils (of the cohort g) dropping out after j years of study
k	Number of repetitions allowed
n	Normal duration of study for a cycle or level of education
g	Pupil-cohort
j	Number of years of study.

Distilled Formula:

$$\text{Coefficient} = \frac{\text{Actual Amount of Graduates}}{\text{Ideal Number of Graduates}} \times 100$$

Process (incl. data required/data sources): Need the number of graduates with and without repetition. Also need the amount of dropouts. Data will come from school census and registry.

Interpretations: A high percentage indicates a high level of efficiency in students graduating without needing to repeat a year in school. Lower percentages indicate the amount of students dropping out and repeating years in school.

Limitations: This indicator only shows the efficiency in graduating students, but does not show the exact level of achievement of the students.

Justification: This indicator not only shows the retention rate of students, but also shows how many students are repeating years in school. It is promoted by UNESCO's Institute for Statistics.

8. Coefficient of Efficiency

	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Coefficient of Efficiency	Existing graduation statistics	9	7	7	8	9	7	7		
Weighted Score			90	63	56	56	54	35	28	35	417
Comments			The efficiency of Fabretto's programs is directly linked to their mission, specifically the outcome of "Increased student participation and performance in Early and Primary Education".	Once data collection on school efficiency begins, it will be easy to retrieve data subsequent years.	School census data should be readily available at schools.	Donors will want to not only know how many students are graduating, but how long it is taking these students to graduate.	Recommended as an education indicator by UNESCO. Also used by the World Bank.	Could bring in new donors interested in more retention rates and grade repetition.	The data for this indicator is available in the school census.	Donors, such as Tin Roof and USAID, currently look at statistics related to enrolment, retention, and graduation.	

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

** 0 = No component of an existing commitment is represented by the indicator

35 = At least one component of an existing commitment is represented by the indicator

70 = The indicator is currently required by an existing commitment

9. NUMBER OF PROGRAM OFFERINGS IN GIVEN LEARNING DOMAIN

Definition: A count of the number of offerings across schools in certain learning domains. UNESCO has identified 7 domains of learning that all students should be exposed to, across education systems, starting from early childhood. These are physical well-being, social and emotional, culture and the arts, literacy and communication, learning approaches and cognition, numeracy and mathematics, and science and technology. *(See Table 1 below for specifics on each domain of learning).* UNESCO encourages nations to measure children's access to and performance in all domains of learning (LMTF, 2013).

Purpose: To measure whether the program offers a comprehensive program for early childhood development.

Calculation method: A simple count of program offerings (curricular, extra-curricular, or related to teacher training workshops) in a specific learning domain.

Process (incl. data required/data sources): Data comes from the existing curriculum and records on other program offerings.

Interpretations: A high count of offerings in a particular learning domain demonstrates that the organization has a comprehensive program and is engaging in various aspects of early childhood development.

Limitations: The number of offerings does not demonstrate whether students are actively engaging with and/or performing well in a particular learning domain.

Justification: See definition.

9. NUMBER OF PROGRAM OFFERINGS IN GIVEN LEARNING DOMAIN

Domain	Early Childhood Level	Primary Level	Postprimary Level
Physical well-being	<ul style="list-style-type: none"> Physical health and nutrition Health knowledge and practice Safety knowledge and practice Gross, fine and perceptual motor 	<ul style="list-style-type: none"> Physical health and hygiene Food and nutrition Physical activity Sexual health 	<ul style="list-style-type: none"> Health and hygiene Sexual and reproductive health Illness and disease prevention
Social & emotional	<ul style="list-style-type: none"> Self-regulation Self-concept and self-efficacy Empathy Emotional awareness (knowledge, expression, and regulation) Social relationships and behaviors Conflict resolution Moral values 	<ul style="list-style-type: none"> Social and community values Civic values Mental health 	<ul style="list-style-type: none"> Social awareness Leadership Civil engagement Positive view of self and others Resilience/"grit" Moral and ethical values
Culture & the arts	<ul style="list-style-type: none"> Creative arts Self- and community-identity Awareness of and respect for diversity 	<ul style="list-style-type: none"> Creative arts Social studies Cultural knowledge 	<ul style="list-style-type: none"> Creative arts Social studies and history Social sciences
Literacy & communication	<ul style="list-style-type: none"> Receptive language Expressive language Vocabulary Print awareness 	<ul style="list-style-type: none"> Oral fluency Oral comprehension Reading fluency Reading comprehension Receptive vocabulary Expressive vocabulary Written expression/ composition 	<ul style="list-style-type: none"> Speaking and listening Writing Reading
Learning approaches & cognition	<ul style="list-style-type: none"> Curiosity and engagement Persistence and attention Autonomy and initiative Cooperation Creativity Reasoning and problem solving Early critical thinking skills Symbolic representation 	<ul style="list-style-type: none"> Persistence and attention Cooperation Autonomy Knowledge Comprehension Application Critical thinking 	<ul style="list-style-type: none"> Collaboration Self-direction Learning orientation Persistence Problem-solving Critical decisionmaking Flexibility Creativity
Numeracy & mathematics	<ul style="list-style-type: none"> Number sense and operations Spatial sense and geometry Patterns and classification Measurement and comparison 	<ul style="list-style-type: none"> Number concepts and operations Geometry and patterns Mathematics application 	<ul style="list-style-type: none"> Number Algebra Geometry Everyday calculations Personal finance Informed consumer Data and statistics
Science & technology	<ul style="list-style-type: none"> Inquiry skills Awareness of the natural and physical world Technology awareness 	<ul style="list-style-type: none"> Scientific inquiry Life science Physical science Earth science 	<ul style="list-style-type: none"> Biology Chemistry Earth science Scientific approaches

Table 2: UNESCO 7 Domains of Universal Learning

Source: LMTF (Learning Metrics Task Force). (2013).

9. NUMBER OF PROGRAM OFFERINGS IN GIVEN LEARNING DOMAIN

	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Program Offerings in Given Learning Domain	Records on program offerings, incl. curriculum and PD workshops	7	8	6	5	6	6	9		
Weighted Score			70	72	48	35	36	30	36	0**	327
Comments			Having varied program offerings are important to quality education.	Low-cost, but time-consuming and difficult to do on a regular basis.	This is a low-cost indicator, but will take considerable time and planning to measure.	A donor audience has not specified interest in this indicator.	It is unclear whether the 7 learning domains have been recognized by organizations beyond UNESCO.	If Fabretto places emphasis on a particular area of learning, it may open new opportunities with donors.	Fabretto has the expertise to measure this indicator.	Donors have not specified a particular interest in varied program offerings.	

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

- ** 0 = No component of an existing commitment is represented by the indicator
- 35 = At least one component of an existing commitment is represented by the indicator
- 70 = The indicator is currently required by an existing commitment

10. AVERAGE STARTING SALARY RATIO OF TEACHERS

Definition: The average starting salary of an SAT teacher/tutor at Fabretto divided by the average starting salary of a teacher at a typical Nicaraguan public school (UNESCO Institute for Statistics, 2006).

Purpose: To evaluate the competency and qualifications of the SAT teachers/tutors hired by Fabretto.

Calculation method:

$$S_F/S_P$$

S_F – Average starting salary of an SAT teacher/tutor at Fabretto

S_P – Average starting salary of a teacher at a government-run Nicaraguan secondary school

Formula: (Average starting salary of SAT teachers/tutors at Fabretto)/(Average starting salary of a teacher at a Nicaraguan public school)

Process (incl. data required/data sources): Will require the starting salary records for tutors/teachers hired by Fabretto. Will also require the starting salary records of teachers hired by government schools.

Interpretations: If Fabretto is paying its teachers/tutors the same as or more than the average starting salary of a teacher at a Nicaraguan public school, Fabretto’s mission statement of “improving livelihoods” is supported. Also, if Fabretto is paying its teachers/tutors the same as or more than the average starting salary of a teacher at a Nicaraguan public school, there stands to be reason that Fabretto is competing for the most competent staff available.

Justification: Recommended by UNESCO’s Institute for Statistics.

10. AVERAGE STARTING SALARY RATIO OF TEACHERS

	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Average starting salary ratio	Fabretto employee records, along with existing government salary records	9	6	5	3	9	7	6		
Weighted Score			90	54	40	21	54	35	24	35**	353
Comments			Links closely with Fabretto's objective to "deliver quality education."	If the data is expensive, may not be cost effective in the long run.	Requires government data on the salaries of teachers in government-run schools. This may be expensive data to find.	Donors have not specifically requested this information for their funding.	Recommended by UNESCO's Institute for Statistics	Donors should take note if Fabretto is paying as much or more than public schools.	Finding the starting salaries of public school teachers may require additional expertise.	Donors have not specifically requested this information for their funding, but this metric links closely to the tutor-related metrics that are requested.	

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

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 35 = At least one component of an existing commitment is represented by the indicator
 70 = The indicator is currently required by an existing commitment

11. GROSS INTAKE RATIO (GIR) IN THE FIRST GRADE OF PRIMARY

Definition: Total number of new entrants in the first grade of primary education, regardless of age, expressed as a percentage of the *community* population at official primary school-entrance age (UNESCO Institute for Statistics, 2009).

Purpose: To indicate the program's capacity to provide access to grade 1 for the official school-entrance age population in the target communities.

Calculation method: Divide the number of new entrants in grade 1 by the population at official school-entrance age in the target communities.

Formula:

$$\text{GIR} = \text{N/P} * 100$$

N – Number of new entrants in the first grade of primary education, in a particular school year

P – Community population of official primary school entrance age, in a particular school year

Process (incl. data required/data sources): This indicator requires data on new entrants in the first grade of primary education (or enrolment minus repeaters in the first grade), collected from the school register or a school survey. Estimates on primary school-entrance population in the community can be collected from a population census or community surveys.

Interpretation: A high GIR indicates a high degree of access to primary education.

Limitations: A high GIR may be the effect of a backlog of over-aged children who have not entered school when they were at the official primary school-entrance age.

Justification: GIR is proposed as an education indicator by UNESCO, a leading developer of international standards in education evaluation. In original form, GIR is meant to evaluate national education programs, but it can be adapted to the community level. This indicator can offer Fabretto a quantitative assessment of the capacity of its program to enroll children in target communities. It measures whether Fabretto is able to enroll the majority of primary-aged children in the communities where it operates. It can be adapted as well to look at secondary school and the population of secondary-aged children in the community.

11. GROSS INTAKE RATIO (GIR) IN THE FIRST GRADE OF PRIMARY

	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	GIR	School register, census data, and/or community surveys	8	5	3	7	9	7	4		
Weighted Score			80	45	24	49	54	35	16	35**	338
Comments			Fabretto is interested in increasing the number of children enrolled in school, especially at the secondary level.	It may be costly to regularly collect community data.	It may be costly to collect data on the community	A number of Current Donors are interested in measuring student enrollment, including Admintrust and Cordaid. The target audience of donors will be familiar with this indicator.	GIR is a recognized indicator by international development groups, including UNESCO and the World Bank	Donors will recognize this indicator. Given prior interest, assume new donors would be interested.	Fabretto will have access to data on enrolled students, but may lack access to or expertise in collecting community data.	No donors currently require the GIR, but some groups such as USAID require statistics on primary student enrollment	

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

** 35 = At least one component of an existing commitment is represented by the indicator

12. DISTRIBUTION OF ENROLLMENT IN SECONDARY EDUCATION BY ORIENTATION OF EDUCATION PROGRAM

Definition: A percentage of students in secondary school by which type of program they are enrolled in (i.e. secondary school, vocational training, teacher training, etc.) (UNESCO Institute for Statistics, 2009).

Purpose: To show what type of educational programs students are enrolled in.

Calculation method: Divide the number of students in each type of program by the total secondary education population, then multiply by 100.

Formula:

$$\%E_s^t = \frac{E_s^t}{\sum_{s=1}^n E_s^t} * 100$$

$\%E_s^t$ Percentage of students enrolled in orientation s of secondary education in school year t
 E_s^t Number of students enrolled in orientation s of secondary education in school year t
 n Number of orientations of secondary education

Process (incl. data required/data sources): Need the total secondary education population of the region/area as well as how many different programs/schools there are in the area and how many students are enrolled in each type of program. Data will come from school census. Might need to survey secondary education programs.

Interpretations: The percentage of students in each type of program shows the popularity and capacity of each of these programs. This reflects what programs are popular for students and could show what types of jobs students are interested in.

Limitations: This indicator would be hard to compare between many different countries because of the different organization of education systems. This will not be a problem for Fabretto as the organization only works in Nicaragua.

Justification: Knowing what types of educational programs are popular among students will show what types of jobs these students will be prepared for. Fabretto is interested in increasing the economic wellbeing of students and their families -- if Fabretto knows what type of education programs exist and are popular it will allow them to better serve the needs of the students.

12. DISTRIBUTION OF ENROLLMENT IN SECONDARY EDUCATION BY ORIENTATION OF EDUCATION PROGRAM

	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Percentage Distribution of Enrolment	School census in secondary education; MOE records	7	4	3	8	9	7	6		
Weighted Score			70	36	24	56	54	35	24	0	299
Comments			Having information on existing secondary education programs will help Fabretto focus their programs on job skills. This indicator links to Fabretto's ideal outcome of "students gain skills to succeed in jobs and post-secondary education".	Indicator is not very sustainable as community data would need to be collected every year.	Will require a survey of all secondary education programs that exist in the region. This will require a lot of time and human resources.	Donors could be interested in understanding how Fabretto's programs compare to other education programs in the region.	Recommended as an education indicator by UNESCO.	Could bring in new donors who are interested in students gaining skills for jobs.	This type of data is currently not being collected, but collecting the data will be relatively simple.	This indicator has not been requested by donors	

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

13. EMPLOYMENT ACQUIRED BY SAT AND VOCATIONAL LIFE SKILLS PROGRAM PARTICIPANTS

Definition: Any jobs or employment acquired by participants of Fabretto’s rural SAT program or their vocational life skills program participants, as well as the fields these jobs fall into (Maas, 2014).

Purpose: The purpose of this indicator is to inform Fabretto staff of the general employment opportunities available to Fabretto program graduates.

Calculation method: N/A

Formula: N/A

Process (incl. data required/data sources): This indicator would require that Fabretto initiate and maintain communication with its graduate in order to acquire needed information. Needed information could be acquired through a telephone survey.

Interpretations: The general fields of employment in which Fabretto graduates are working may provide insight into their economic opportunities. A large number of graduates working in a particular field may indicate that Fabretto should focus on certain skills related to this field. Also, this information generated over a span of years could be used to analyze employment trends, improvements in Fabretto graduates’ employment opportunities over time, and provide information on what skills may be most important in the rapidly changing country.

Limitations: At this point, Fabretto may not have strong channels of communication between the organization itself and the graduates of the program, which may limit this indicator in the present. However, it could certainly be implemented in the future as the graduated community grows and it becomes easier to maintain contact. This indicator is also limited due to the time commitment that would be necessary for implementation.

Justification: If Fabretto’s overall mission is to empower Nicaraguans and improve their livelihood, it is imperative that they understand the employment and economic possibilities that have been available to graduates in the past and can prepare future graduates accordingly.

13. EMPLOYMENT ACQUIRED BY SAT AND VOCATIONAL LIFE SKILLS PROGRAM PARTICIPANTS

	Indicator	Instrument	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Employment Acquired	Survey	7	5	3	8	3	8	9		
Weighted Score			70	45	24	56	18	40	36	35**	324
Comments			Linked with "improving livelihood" and "taking advantage of economic opportunity through education"	Costly to maintain communication channels, but student contact information could be collected at graduation to facilitate connections.	Implementation would likely be very costly in terms of time and resources. Would require tracking down former students and creating better communication channels with them.	Although this indicator is not one that has been requested by certain donors, it does relate to the potential economic success of former students in the work place, which may be especially important to donors.	Not a predominant indicator amongst international organizations	Many donors are interested in data relating to economic success. This indicator would display employment / economic opportunities available to and acquired by Fabretto graduates.	Once communication channels are established, little expertise needed	(The Tinker Foundation requires "% of graduates involved in universities, community activities, or jobs (long-term)," clearly focusing attention on students preparation to enter the work force after graduation)	

*Indicator is ranked on a point-based priority system (1-10), 10 being the most important and 1 being the least important. When determining Financial Sustainability and Necessary Resources, a lower ranking determines that the indicator is of higher cost to implement.

- ** 0 = No component of an existing commitment is represented by the indicator
- 35 = At least one component of an existing commitment is represented by the indicator
- 70 = The indicator is currently required by an existing commitment

14. SAT AND VOCATIONAL LIFE SKILLS PROGRAMS VS. SKILLS DEMANDED BY EMPLOYERS

Definition: This indicator analyzes the main skill sets that these two Fabretto programs attempt to develop in participants and compares these with the skills demanded by the employers of Fabretto graduates.

Purpose: This indicator places more focus on Fabretto's overall goal of improving the livelihoods of Nicaraguans. It would indicate whether or not Fabretto's programs are properly preparing students to succeed in jobs that they are likely to acquire before or after graduation.

Calculation method: SAT and vocational life skills program data should be calculated separately. The most common fields (e.g. agriculture, production, sales, etc.) in which participant graduates have found employment must be determined. The top 2-3 most common fields (these fields together must represent at least 50% of employed Fabretto program participants) should be selected. Further research must be carried out on what skills are demanded and most needed in these sectors (see Maas, 2014). Qualitative comparison and analysis must explore whether these demanded skills line up with those developed within respective Fabretto programs.

Formula: N/A

Process (incl. data required/data sources): This indicator would require curriculum write-ups, labor surveys, articles produced by national and international organizations, scholarly articles, and even personal interviews if possible.

Interpretations: A high correlation between skills emphasized and taught in Fabretto programs and capacities demanded by employers of SAT and vocation and life skills program graduates would indicate success on Fabretto's part to prepare their students for success in the work place and lead them to improve their livelihoods.

Limitations: At this point, Fabretto does not have strong channels of communication between the organization itself and the graduates of the program, which may limit this indicator in the present. However, it could certainly be implemented in the future as the graduated community grows and it becomes easier to maintain contact. This indicator is also limited due to the time commitment that would be necessary for implementation. It would require intense research into the fields of employment in which graduates were working, as well as quantitative analysis to assess whether or not the focuses of Fabretto's programs were matching the needs of potential employers.

Justification: If Fabretto's overall mission is to empower Nicaraguans and improve their livelihood, it is imperative that they prepare their students so that they can successfully acquire meaningful employment and succeed in their respective workplaces. It is not enough that they are educated, but that they are educated in a way that is meaningful in the context of Nicaragua and their own personal aspirations.

14. SAT AND VOCATIONAL LIFE SKILLS PROGRAMS VS. SKILLS DEMANDED BY EMPLOYERS

	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Sat and vocational life skills programs vs. Skills demanded by employers	Surveys and data from other national & international organizations	9	3	2	8	6	8	5		
Weighted Score			90	27	16	56	36	40	20	35**	320
Comments			Very strongly linked with “improving livelihood” and “taking advantage of economic opportunity through education”	Costly to maintain contact with graduates and update research on required skills in different employment sectors.	Implementation would likely be very costly in terms of time and resources. Would require tracking down former students and creating better communication channels with them, as well as in depth research.	Although this specific indicator has not been requested by donors, it does relate to the potential economic success of graduates in the work place. There has been a recent trend in donors looking for statistics related to economic opportunity, which Fabretto does not currently provide.	The Tinker Foundation, FUNIDES (Maas, 2014), UNESCO (2012) and others stress the importance of education and the skills acquired during school in obtaining future employment. UNESCO: “Skills development is vital in reducing unemployment, inequality and poverty, and promoting growth.” (2012)	This indicator provides data on economic opportunities open to Fabretto program graduates, which is of high interest to donors.	Fabretto would need to increase its efforts to maintain contact with graduates and also conduct in depth research into required skills for different employment fields.	The Tinker Foundation requires “% of graduates involved in universities, community activities, or jobs (long-term),” clearly focusing attention on students preparation to enter the work force after graduation	

** 35 = At least one component of an existing commitment is represented by the indicator

15. EDUCATION LEVEL OF STUDENTS VS. PARENTS

Definition: Average number of years of schooling received by parents of current and past Fabretto program participants vs. average number of years of schooling received by current and past Fabretto program participants age 19 and over.

Purpose: Analyze whether or not Fabretto programs are encouraging students to stay in school longer and whether or not they helping to develop the educational system offered to these communities over the generations.

Calculation method: Parents' education data should be collected upon the matriculation of their children. The sum of the parents' total years of schooling will be taken and then divided by the number of parents who participated in the study. This will be directly compared with the sum of Fabretto program participants age 19 and over, divided by the number of students who participated in the study to potential developments in the education system brought about by Fabretto programs.

Formula:

Total years of parent schooling / n

Total years of schooling of current and past Fabretto program participants age 19 and over / n

Process (incl. data required/data sources):

Data required: years schooling of Fabretto participants' parents, years of schooling of current and past Fabretto participants over 19

Sources: Household surveys, school archives

Interpretations: If the average years of schooling attained by Fabretto participants are greater than the average of their parents, it can be interpreted that Fabretto is achieving its goals to help Nicaraguans "reach their full potential, improve their livelihoods, and take advantage of economic opportunity through education." It has been shown by various studies that every year of additional schooling raises personal income for the individual, but also gross domestic product of the state itself.

Limitations: Similar to the calculation for School-Life Expectancy by UNESCO, this indicator runs the risk of double-counting repeated years (p. 7, 2009). It also fails to take into consideration what type of education was received during these years, how long the school years were, and attendance rates during the year. Fabretto, at this point, does not have strong communication channels between the organization itself and former program participants, which would have to improve in order to properly measure this indicator.

Justification: UNESCO, the World Bank, and other prominent institutions agree that for each additional year of schooling, the individual and the nation benefit economically (UNESCO, 2010 and Psacharopoulos & Patrinos, 2002). Taking its inspiration from UNESCO’s School-Life Expectancy (p. 7, 2009), this indicator will show over the course of a generation whether or not Fabretto’s programs are succeeding in empowering students, improving livelihoods, and increasing economic opportunity. It’s crucial that Fabretto’s day to day activities and goals are streamlined into these broader, more long-term objectives through such measurements.

	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Education of Students vs. Parents	Surveys, school archives	8	5	2	8	8	7	9		
Weighted Score			80	45	16	56	48	35	36	0**	316
Comments			Strongly linked with “improving livelihood” and “taking advantage of economic opportunity through education”	Costly to maintain communication channels, but student contact information could be collected at graduation and parent education information could be collected at matriculation. May also increase donor confidence.	Fairly costly in terms of time and resources	Although this indicator is not one that has been requested by certain donors, it does relate to student retention, school life expectancy, and increased years of schooling. Additional years of education have been shown to improve economic livelihood.	The indicator itself is based off of School Life Expectancy by UNESCO and also represents facts and concerns frequently cited by UNESCO and the World Bank	Indicators showing increased years of schooling and potential future economic opportunity for program participants may be especially desirable to donors and increase their confidence in Fabretto’s programs	Once communication channels are established, little expertise needed.	Not required my major donors.	

** 0 = No component of an existing commitment is represented by the indicator

16. STUDENT GRADUATE EMPLOYMENT RATE

Definition: The percentage of past participants in Fabretto’s SAT and Vocational and Life Skills programs who have attained employment compared with the national employment rate

To define employment and unemployment, follow these definitions:

“People with jobs are *employed*.”

“People who are jobless, looking for a job, and available for work are *unemployed*.”

“The *labor force* is made up of the employed and the unemployed.” (U.S. Bureau, 2014)

Purpose: Analyze whether or not Fabretto programs are helping students to obtain employment and successfully function in the workplace

Calculation method: Percentage of employed former program participants divided by total number of former program participants in study who qualify as part of the “labor force”; compare to national employment rate

Formula: Number of employed former program participants / n

Process (incl. data required/data sources): Household and individual surveys

Interpretations: If the percentage of employed former Fabretto program participants is greater than the national average, it can be deduced that Fabretto is more successfully equipping their students with the skills and knowledge to obtain work and succeed in the work place than other schools

Limitations: Fabretto works in specifically poor areas, which may have higher-than-average unemployment rates to start with. This must be taken into consideration when calculating this indicator. Further, this indicator does not measure whether or not this employment is meaningful, temporary or long term, well or poorly paid, and a number of other important factors. Also, at this point Fabretto does not have strong communication channels between the organization itself and former participants of its programs, which would have to improve in order to properly measure this indicator.

Justification: Proof of increased economic opportunity shows donors that Fabretto’s programs are offering a path towards economic development, including increased employment and higher personal income. This indicator will increase donors’ confidence in Fabretto’s ability to achieve their long term goals and contribute towards the larger development of Nicaragua.

16. STUDENT GRADUATE EMPLOYMENT RATE

	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment	Total Weighted Score
Raw Score*	Student Graduate Employment Rate	Household and individual surveys	8	5	3	8	8	8	9		
Weighted Score			80	45	24	56	48	40	36	35**	364
Comments			Very strongly linked with “improving livelihood” and “tak[ing] advantage of economic opportunity through education”	Costly to maintain communication channels, but student contact information could be collected at graduation. This communication may also lead to greater connection with affluent graduates, potentially bringing more capital coming back into Fabretto. May also increase donor confidence.	Time and resources would be required in creating communication channels between Fabretto and graduates.	Although this indicator is not one that has been requested by certain donors, it does relate to the economic success of students in the work place, which in increasingly important data for donors.	This indicator is not noted by prominent organizations , but is clearly connected with important statistics for international development , such as the unemployment rate	Indicators showing increased economic opportunity for program participants may be especially desirable to donors and increase their confidence in Fabretto’s programs.	Once communication channels are established, little expertise needed.	% of graduates involved in universities, community activities, or jobs (long-term) requested by Tinker Foundation	

** 35 = At least one component of an existing commitment is represented by the indicator

IV. AGREGGATE RANKINGS OF EDUCATION INDICATORS IN ORDER OF PRIORITY

Total Weighted Score	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment
472	Gender Parity Index	Existing data	100	90	80	70	60	40	32	0
440	Teacher/ tutor competency percentage	Existing Fabretto employee records or simple surveys	80	81	80	35	54	35	40	35
417	Coefficient of Efficiency	Existing graduation statistics	90	63	56	56	54	35	28	35
407	School Life Expectancy	Enrolment age, school register, census data	80	81	64	35	54	30	28	35
392	Transition Rate	Enrolment age data, school register	70	72	64	49	54	20	28	35
390	Experience of SAT Teacher	Existing Fabretto employee records or simple surveys	70	81	80	35	54	30	40	35

Total Weighted Score	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment
364	Student Graduate Employment Rate	Household and individual surveys	80	45	24	56	48	40	36	35
353	Average starting salary ratio	Fabretto employee records, along with existing government salary records	90	54	40	21	54	35	24	35
338	GIR	School register, census data, and/or community surveys	80	45	24	49	54	35	16	35
336	Percentage of female indicators	School survey or school census	80	63	56	49	48	20	20	0
327	Program Offerings in Given Learning Domain	Records on program offerings, incl. curriculum and PD workshops	70	72	48	35	36	30	36	0
324	Employment Acquired	Survey	70	45	24	56	18	40	36	35

Total Weighted Score	<i>Indicator</i>	<i>Instrument</i>	Alignment with Fabretto	Financial Sustainability	Necessary resources	Audience	National & International Relevance	Business Opportunity	Existing Expertise	Current Donor Commitment
320	Sat and vocational life skills programs vs. Skills demanded by employers	Surveys and data from other national & international organizations	90	27	16	56	36	40	20	35
316	Education of Students vs Parents	Surveys, school archives	80	45	16	56	48	35	36	0
303	Ratio of funds per school per school population	Existing scholastic data, financial records	80	81	56	56	42	30	32	0
299	Percentage Distribution of Enrolment	School census in secondary education; MOE records	70	36	24	56	54	35	24	0

V. RECOMMENDATIONS

Based on our system of weighted ranking, we recommend that Fabretto consider the following indicators for inclusion in its future M&E system. We have divided the indicators into high, medium, and low priority groupings for Fabretto's review. Please see our justifications for these rating on the following pages.

High Priority Indicators:

- Gender Parity Index
- Teacher/Tutor competency percentage
- Coefficient of Efficiency

(Weighted Scores 410-480)

Raw Score 66/Weighted Score 472

Raw Score 58/Weighted Score 440

Raw Score 54/Weighted Score 417

Medium Priority Indicators:

- Transition Rate
- Experience of SAT Teacher
- Student Graduate Employment Rate
- Average Starting Salary Ratio for Teachers
- Gross Intake Ratio

(Weighed Scores 330-400)

Raw Score 50/Weighted Score 392

Raw Score 56/Weighted Score 390

Raw Score 49/Weighted Score 364

Raw Score 45/Weighted Score 353

Raw Score 43/Weighted Score 338

Low Priority Indicators:

- Employment Acquired
- Education of Students vs Parents
- Ratio of funds per school per school population

(Weighted Scores 300-330)

Raw Score 43/Weighted Score 324

Raw Score 47/Weighted Score 316

Raw Score 53/Weighted Score 303

Gender Parity Index *Raw Score 66/Weighted Score 472*

The GPI is a widely-used socioeconomic index used by UNICEF, UNESCO, and other education-related NGOs, often to measure the relative access to education of males and females in a community. Many international donors are eager to see indicators that demonstrate female access to education, given the historic gender gap in global education. Given Fabretto's mission to improve access to quality education for all children, it would be natural to include GPI within its M&E program. GPI is cost-effective and simple to measure, as it uses existing data for other indicators. Moreover, utilizing the GPI indicator may suggest to donors that Fabretto is committed to gender equality and female empowerment, which may open new avenues for the organization.

Teacher/Tutor Competency Percentage *Raw Score 58/Weighted Score 440*

The Teacher/Tutor Competency indicator evaluates the competency and qualifications of the SAT teachers/tutors hired by Fabretto. It demonstrates to donors that Fabretto is committed to hiring competent staff, which directly links with their objective to "deliver quality education." This UNESCO indicator is simple and cost effective to implement each year, as Fabretto likely has access to all necessary data. Fabretto's donors currently request tutor-related metrics, so they will likely be eager to see more information on teacher competency.

Coefficient of Efficiency *Raw Score 54/Weighted Score 417*

The Coefficient of Efficiency has been listed as an important educational indicator by both UNESCO's Institute for Statistics and the World Bank. It can be used to measure the efficiency of Fabretto's education program, relating the actual and expected numbers of graduating students. The indicator is cost effective and the necessary data on graduation rates should be readily available for the organization. Donors such as Tin Roof and USAID currently look at statistics related to enrollment, retention, and graduation, so the Coefficient of Efficiency would be a natural inclusion in the M&E program.

Transition Rate *Raw Score 50/Weighted Score 392*

Transition rates are used by many international education groups including UNESCO and ERNWACA. Fabretto donors, including the Tessien Family, Tim Roof, and USAID, already evaluate the strength of the Fabretto's program via statistics on retention and enrollment. Cost is low due to ease of gathering data and calculating the formula, and it can be used to demonstrate the functioning capacity of the school program.

Average Teaching Experience *Raw Score 56/Weighted Score 390*

This cost effective and sustainable indicator directly links to Fabretto's objective to "deliver quality education." Favorable results will demonstrate to donors that Fabretto hires experienced educators. It is simple to calculate and Fabretto may already have access to necessary data. Given the sustainability, ease of use, and connection to donor interests, we rate this as a medium priority indicator.

Student Graduate Employment Rate *Raw Score 49/Weighted Score 364*

Favorable results from this indicator may increase donors' confidence in Fabretto's ability to achieve their long-term goals and contribute to the country's economic development. It will require significant time to establish communication channels with and collect information on graduates, but having greater connection with past students may have beneficial outcomes in the long-run.

Average Starting Salary Ratio for Teachers *Raw Score 45/Weighted Score 353*

This UNESCO indicator may be used to investigate the starting salary of an SAT teacher/tutor at Fabretto in relation to the starting salary of a teacher at a typical Nicaraguan government school. Donors will be interested to know if Fabretto is compensating their teachers as much or more than other school programs, but they have not specifically requested it.

Gross Intake Ratio *Raw Score 43/Weighted Score 338*

GIR is proposed as an education indicator by UNESCO, a leading developer of international standards in education evaluation. This indicator can offer Fabretto a quantitative assessment of the capacity of its program to enroll children in target communities. The target audience of donors will be familiar with this indicator, but it may be costly to regularly collect community data. Due to the high costs, we rank this as medium priority.

Employment Acquired *Raw Score 43/Weighted Score 324*

Many donors are interested in data relating to economic success and this indicator would display employment / economic opportunities available to and acquired by Fabretto graduates. Moreover, it is important and beneficial for Fabretto to understand the employment and economic possibilities that have been available to graduates in the past so it can prepare future graduates accordingly. Collecting the data will require significant time, however, as former students will need to be tracked down and better communication channels will need to be established.

Education of Students vs Parents *Raw Score 47/Weighted Score 316*

UNESCO, the World Bank, and other prominent institutions agree that for each additional year of schooling, the individual and the nation benefit economically. Taking its inspiration from UNESCO's School-Life Expectancy, this indicator will show over the course of a generation whether or not Fabretto's programs are succeeding in empowering students, improving livelihoods, and increasing economic opportunity across the past generation. We give this a lower priority rating, however, due to the significant costs in time and resources to obtain the necessary data.

Ratio of Funds per School per School Population *Raw Score 53/Weighted Score 303*

This low cost indicator investigates the distribution of funds among Fabretto's schools. It can be useful both internally and externally, and having equitable programs can improve donor confidence. While this is an important indicator to consider, equity reports are not currently requested by any of Fabretto's donors. For this reason, we give this a lower priority rating.

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