TRANSFORMATIVE EDUCATION: EXPERIENCES FROM EARTH AND TRANSFORMING HIGHER EDUCATION INITIATIVE

James B. French and Jose Zaglul[1]

Dr. French is the Director of the Transforming Higher Education project at American University of Beirut (AUB), Faculty of Agriculture and Life Sciences, Secretary General of GCHERA, and previously the First Vice-President of Academics at EARTH University

Dr. Jose Zaglul is the Founding President and President Emeritus of EARTH University and Immediate Past-President of GCHERA.

1. INTRODUCTION

The RUFORUM led TAGDEV2.0 project's (Transforming African Agricultural Universities to meaningfully contribute to Africa's growth and development) primary objective or GOAL is "to strengthen universities and TVET institutions to better serve communities by skilling and empowering Africa's young people and their institutions to drive inclusive, equitable and climate resilient transformation of agriculture and agrifood systems."[2] Therefore, it seeks to transform higher education and technical institutions (TVET's) to create student centered learning ecosystems that prepares ethical leaders and agents of change with the commitment, mindset, knowledge, skills and competencies to transform the agriculture and agrifood systems and "drive inclusive, equitable and climate resilient transformation of agriculture and agrifood systems"(Ibid).

The three strategic outcomes of the project are:

1. Expanded equal work opportunities for young women and men in the agricultural sector;
2. Improved climate adaptive agricultural production and productivity and;
3. Strengthened quality of higher agricultural education outcomes in training, research and innovation.

As an aside, we propose a draft version of Mission and Vison statements for the project based on our reading of the project paper and understanding of Transformative Education:

MISSION:

To strengthen and transform the African Agricultural Universities to educate the ethical leaders and agents of change that will guide the African continent into one of prosperity for all, sustainability and justice.

[1] Dr. French is the director of the Transforming Higher Education project at AUB Faculty of Agriculture and Life Sciences, Secretary General of GCHERA, and previously the First Vice-President of Academics at EARTH University during its first 15 years; Dr. Jose Zaglul is the Founding President and President Emeritus of EARTH University and past-President of GCHERA (2019-2025).

[2] Taken from RUFORUM, "Transforming African Agricultural Universities to meaningfully contribute to Africa's growth and development"(TAGDev 2.0 project proposal, p3.)

VISION

The African Continent will be a role model of sustainable development for the world where its people will live in peace and harmony.

Higher education institutions must be committed to the goals and outcomes of the project for them to become a reality. This commitment must come from the top administrators, faculty, staff and all involved in the academic program including their governing Boards. All involved must be trained and make this mission and vision a personal goal and promote it across the curriculum.

Values must be at the heart of every action, teaching and research.

The TAGDEV2.0 project identifies several barriers affecting the potential for agricultural universities in Africa to strengthen the institutions and prepare their graduates to "drive inclusive, equitable and climate resilient transformation of agriculture and agrifood systems" (Ibid: TAGDev 2.0 project proposal, p3):

- **Traditional educational models** at **universities and TVETs inadequately equip young women and men with requisite knowledge and skills to make them change agents in the agricultural sector.**
- **Policies, systems and practices in universities and TVETs do not enable institutions to be transformative.**
- **Limited university and TVET capacity for entrepreneurship education and commercialization of innovations.**
- **Limited generation of climate adaptive technologies and weak integration of technology users, especially for young people in the input and output markets, affect agricultural production and productivity.**
- **Limited capacity of agricultural extension/advisory services** to facilitate smallholder transitions from subsistence-production to farming-as-a-business and
- **Weak collaboration between educational ecosystems actors** limits ability to unlock work and business opportunities for young people.

The premise of the project is that African institutions of higher education (TVET's and Universities) need to become quality higher education centers focused on preparing students to become agents of change based on the principals of transformative education (Strategic Outcome 3) enabling them to prepare professionals with the knowledge, skills and competencies necessary to meet the demands of employers in the agriculture and agri-food systems; prepare graduates to create business enterprises and employment opportunities (Strategic Outcome 1); and prepare them to collaboratively contribute to the development of more productive, sustainable and climate smart agrifood research systems. The universities will graduate professionals who are ethical leaders and change agents with a vision and drive to change the rural economies and society across Africa.

The Transformative Education literature has argued that universities must offer a Transformative Education to offer Quality Education as defined by the Sustainable Development Goals and that and to graduate agents of change with the knowledge skills, and capacity to contribute to the changes envisioned in the project. To achieve this, we must consider the barriers listed above in creating a Transformative Education ecosystem.

This paper explores the concept of Transformative Education and its relations to the goals and expected outcomes of the TAGDEV2.0 project. It also shares the experiences from the creation and success of EARTH University as a Transformative Education case study, and the experiences of the Transforming Higher Education project in transforming pilot universities into Transformative Education institutions. This project, financed by the WK Kellogg Foundation, has been led by the American University of Beirut in partnership with GCHERA and EARTH University since 2018 and partners with pilot universities, three from the Yucatan Peninsula, Mexico and one from Haiti. Based on these experiences, the paper addresses key elements and steps involved in creating a transformative educational ecosystem, lessons learned from the process, and the need to measure success and impact. Success in the implementation of Transformative Education and success in the effective education of change agents through the transformed university ecosystems, and its potential impact.

2. TRANSFORMATIVE EDUCATION AND LEARNING

The Agricultural Universities and TVET's must become transformative education and learning institutions to graduate ethical leaders and change agents to reach the goal of this project: for "Africa's young people and their institutions to drive Inclusive, equitable and climate resilient socio-economic development in their society" (Ibid).

The key question is what does it mean to become a transformative education and learning institution? To answer this question, we need to describe what is meant by transformative learning by the students and what are the key elements of transformative education.

a. **Transformative learning**[3] focuses on adult education and learning by young adults. Key elements of the theory of learning include:
   - There are many ways that learning takes place and every person has a preferred way of learning that is most effective for them. There are benefits to offering different learning opportunities and mechanisms and university professors should consider this in designing learning processes.
   - Transformative learning theory is based on the idea that learners will adjust their thinking when exposed to new ideas that challenge their existing understanding of the world.
   - Jack Mezirow, considered the founder of Transformative Learning, defined learning as "an orientation which holds that the way learners interpret and reinterpret their sense experience is central to making meaning and hence learning." (quote taken from WGU, 2020). It is considered that what we have learned as children when exposed to new experiences or "disorienting dilemmas, this will lead to self-reflections, anslysis, and potential shifts in our understanding and thinking, hence learning. As stated by WGU (2020) "Put in simple terms, transformative learning is the idea that learners who are getting new information are also evaluating their past ideas and understanding and shifting their very worldview as they obtain new information and through critical reflection."

The Theory of Transformational learning considers that adults will go through a series of phases as part of their learning. They begin with a "disorienting dilemma", a disruption to something that they have

[3] This section on Transformative Learning is taken from Western Governors University (WGU), 2020. "What is Transformative Learning Theory" found online: https://www.wgu.edu/blog/what-transformative-learning-theory2007.html.

previously believed they knew or understood or now see in a different light. This then leads to critical examination of what they thought they knew, a critical assessment of the assumptions, then they will develop a plan of action that focuses on what they need to learn to better understand the issue, they will acquire the knowledge and skills necessary to their plan of action, thus creating transformational learning. Then they will explore the application of their new learning to real world situations so that to reinforce their new learning. Transformative learning will create proactive learners, that will build their confidence as learners and as future professionals.

b. Transformative Education

To create Transformative Learning at higher education institutions, to graduate ethical leaders and change agents, it follows that we need to create Transformative Education learning systems. Transformative Education is based on the premise that the present traditional educational systems or models do not prepare youth to face the challenges confronting the world today, they do not create meaningful transformative learning, which goes beyond learning professional knowledge, competencies and skills. We need to transform our educational systems so that they are more relevant, meeting the needs of society, employers and our graduates. But beyond this, it is argued that we need to transform our educational systems so that we produce graduates "that transform people who can transform societies and build a better future" (UNESCO, 2021. Or as stated by Steps for Kids (2024) "Transformative education refers to a pedagogical approach that aims to create profound changes in individuals by challenging their existing beliefs, values, and assumptions. It goes beyond imparting knowledge and skills; instead, it seeks to foster critical thinking, self-reflection, and personal growth".

As leaders in higher education, we must contribute to changing the world for the better through the transformation of our educational systems. As stated by Mary Kalantzis and Bill Cope "we have the power to change our educational systems, have the power to transform our classrooms and our schools. As we embark on these transformations, we also make our own contribution to the transformation of the broader society. Better learners will better contribute to the making of a better society".

Transformative education seeks to create a learner centered culture at the university where students become the driving force behind the learning process as proactive learners who are committed and motivated to drive learning based on the application of theory to practice, where students are responsible partners in the creation of learning, As stated by Steps for Kids, "The principles of transformative education revolve around creating a supportive and inclusive learning environment that encourages open dialogue and exploration of diverse perspectives. It emphasizes the importance of learner agency and empowerment, enabling individuals to take ownership of their learning journey. This approach also recognizes the interconnectedness of personal, social, and global issues, promoting a holistic understanding of the world."

However, Transformative Education goes beyond the preparation of future professionals with a critical view of the challenges facing the world. It aims to prepare future ethical leaders that actively seek solutions to the global challenges. In the words of Step for Kids, "**Transformative education goes beyond acquiring knowledge and skills; it empowers learners to become agents of change**." This is the goal of the TAGDEV2.0 project, to prepare future leaders who will improve Africa agriculture, contributing to improving the lives of small farmers, creating employment, improving the value of agricultural products while enhancing climate smart agriculture and technologies as catalyst for inclusive, equitable, and resilient socio-economic improvements and sustainable development In Africa.

The Role of Teachers and Professors in higher education must change to reflect this cultural change and focus on student learning. Instead of the absolute holders of knowledge in their technical areas, they become "Facilitators of Learning" responsible for designing learning environments, mentoring students, acting as role models, and guiding students through their journey of discovery. The teachers/professors must recognize that they are not just providing technical knowledge and skills but preparing future leaders and agents of change, that must be able to proactively apply the theory to real life problems, and with soft skills including critical thinking, problem solving, team work, communication, ethical leadership, contribute to more sustainable, equitable, and inclusive agricultural and rural eco-systems. UNESCO states in the article "Five Questions on Transformative Education", that "Teachers are expected to transform their teaching, for example, ensuring that the curriculum, pedagogy, learning materials, schools or learning environments are meaningful in the natural, political, economic, and cultural contexts." This is no longer business as usual. We must transform the learning-teaching culture of the university so that the focus is on student centered learning.

The United Nations Sustainable Development Goal #4 Quality seeks to "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all ". UNESCO highlights that: "For education to be of high quality, it must be transformative".

Several characteristics or principles of Transformative Education have been identified by the Transformative Education Forum (TEF) and UNESCO by Mukadam Ajetunmobi (2025) which allow us to better understand what Transformative Education would look like, although this will vary from institution to institution. Based on these principles the TAGDEV2.0 partner universities and TVET's must define their own Transformative Education program in a Transformative Education Framework. The framework would include the project goals, the principles of inclusion, gender equality, social justice, and sustainable and climate-based agriculture systems. From these we can develop a process for monitoring and evaluating the inclusion of the key elements within the defined Transformative Education system. More on the elements of the learning ecosystem below.

The following principles of Transformative Education have been cited by TEF and UNESCO:

The first five make up the core principles of Transformative Education and the following 7 are specific to the pedagogy of Transformative Education.

Core Principles

Human Rights; Sustainable Development; The Importance of Value Systems: Morality, Ethics and Spirit; Diversity; and Economic and Social Justice/Equity

These principles emphasize that the universal idea of human rights should be fundamental to a healthy society and that ethical leaders and agents of change should be led by the principle that a "conscientious global citizen with an emphasis on empathy and compassion and with the understanding that science, technology, engineering and mathematics, * without the underlying values of planet and human sustainability, is devoid of meaning". (TEF Principle 2).

Seven Specific Principles relevant to the pedagogy of Transformative Education

The other seven principles are specific characteristics to the pedagogy surrounding Transformative Education. They include Peace Education and Conflict Resolution; Holistic Education; Community Based

Learning and Indigenous Wisdom; Experiential Learning including Simulation; the Incorporation of New Brain Neuroscience and Critical Thinking Skills (Transformative Education shall promote and incorporate transformative, pedagogical practices that develop whole brain, critical thinking/feeling abilities and capacities.); Use of Technology for Greater Connection not Alienation; and the Sanctity of Human Learning and Life.

3. Building a Transformative Education University: The CASE of EARTH University

EARTH was created by Costa Rican Law in 1986 as an international university of higher education and began operations in 1989. From its creation EARTH University focused on incorporating new thinking in agricultural education. The Founding Board of Trustees of EARTH University had unsuccessfully tried to convince some higher educational institutions to transform their educational models to be adapted to the new agricultural practices in harmony with the environment and the social impact. This required a new approach where values were at the center of the academic program. Due to the lack of interest of some of the academic institutions they approached, they decided with the support of Foundations like the Kellogg Foundation, USA AID, and others to start a new institution that will follow these principles

On the very first day, at the "Corner Stone Laying" ceremony, the newly elected president made it clear that EARTH university will form the **ethical leaders and the change agents** the world needed. (inauguration speech, March 1989, Los hijos de la tierra).

EARTH started with an analysis of the needs of the agricultural sector and society and defined the profile of the graduates that society needs, a graduate capable of being an agent of change, to lead improvements in the agricultural sector for the benefit of more sustainable agriculture and rural society. It incorporated innovative pedagogy, from the input of innovative thinkers in agricultural education, and several key elements that are fundamental to the principles of Transformative Education and Learning shared previously. The EARTH University Transformative Education system, created over 35 years ago, includes many of the principles of the Transformative Education system shared above.

EARTH University, from the very beginning, committed to reach out to the most economically disadvantaged regions of Latin America give opportunities to the most marginalized to have a university education. To achieve this, EARTH has been very successful over the years raising the funds required to provide the scholarships necessary to bring disadvantaged youth.

EARTH University created a student-centered learning ecosystem with experiential learning as its dominant pedagogy. Independent, autonomous, proactive learning was encouraged and enabled as the core of the university student culture. Value based education was central to the educational system at the institutional level, cutting across all university activities and led by senior management and faculty, including everyone at the institute. The general agricultural curriculum incorporated three fundamental programmatic areas critical to becoming an agent of change in agriculture, sustainable agriculture, sustainable natural resource management and social entrepreneurship, critical to developing a more sustainable and commercially viable agricultural sector.

Experiential learning was adopted as the primary pedagogy to be practiced at the university, and the curriculum was designed to provide opportunities for students to learn theory, combined with its application in real life situations, in the classrooms, in the agricultural fields, in the laboratories, and in

projects. Several prominent curricular programs demonstrated the essence of experiential learning at EARTH. Field experience and professional field experience two days a week, living and working with farmers and community members as part of field experiences, field trips, and special academic initiatives. Others included the entrepreneurial projects program, internships with agricultural enterprises in other countries, and student affairs and living designed to contribute to leadership, responsibility, independent learning, among other activities. This includes the senior students taking leadership and responsibility for organizing the EARTH International Fair which invites the community to share the culture of the more than 45 countries where students and faculty are from. The money raised goes to support the bringing student's parents to the graduation ceremony, who would not otherwise be able to attend.

Community engagement is another outstanding example of experiential learning that creates a two-way bridge with the community where the university brings sons and daughters from the community to learn, with the vision that they will return to their communities as agents of change to contribute to sustainable, economic and social development. The university learns from the farmers, community leaders, business leaders, who readily share their knowledge, culture, experiences, and perspectives with the university and students. Students learn from their experiences, gain greater understanding of their challenges and they develop empathy, understanding, and respect for community members. A component of university engagement with the community is to carryout problem based research in collaboration with the community so that students with faculty contribute to a more sustainable and climate smart agriculture, and to improving the livelihood of the community. Community engagement is a key principle for Transformative Education and the TAGDEV2.0 project.

The Entrepreneurial projects program takes place over three years and includes a series of courses designed around the development of a commercial enterprise on the part of a team of 4-5 students, that begins with the development of ideas, the development and defense of a business plan, approval for financing, the implementation of the business, and its successful completion. While developing the business students learn the theoretical concepts of business organization and law, finances, accounting, report writing, business plans, marketing, and environmental impact assessments. The students are given the loan to implement their business plan through marketing. They must pay all costs, including environmental impact taxes, as well as their labor. They are taxed on the profits and what remains is distributed among themselves as profits. Students are responsible for all actions related to their project, including decision making, finding markets, analyzing the potential, implementing the project, and selling their products.

The internship experience allows the students to put their learning to the test, to understand the needs of commercial agriculture, extension services, research programs in their home countries or in other parts of the world. They are expected to contribute and demonstrate their leadership and professional capacity, and the values they have learned at the university. But they are also required to carry out a social development project in their local community, where they have to identify, propose, find partners, and implement themselves as part of their internship experience. The internship program develops confidence in the students, as they successfully demonstrate their leadership skills, their professionalism, problem solving skills, and their proactive nature and capacity.

Student life at the university is managed by academicians that seek to instill in students a series of values and the development of many soft skills including ethical leadership, communication, teamwork, responsibility, problem solving, among others. One key component is critical to students success living

among diverse cultures, with levels of social interaction and potential conflicts, this includes how to manage conflict through dialogue. This is a skill instilled among students throughout their academic studies and more particularly across student life, directed by educators in student affairs. Student life includes living among diverse cultures, membership in student clubs, student government, and the management of the International Fair mentioned above.

Besides the above dominant areas within the curriculum at EARTH University the following specific points demonstrate **Transformative Education and Learning at EARTH University**. They include:

- The vision that student's will be transformed into agents of change through the transformative education model that allows them to apply theory to real life experiences, to become proactive learners and participants in creating a better world. It is expected that upon graduation and further learning, they will meet the expectations and needs of their parents, farmers, their rural community, commercial agriculture, potential employers, and will create employment by the creation of their own innovative initiatives.
- Graduate Profile. EARTH University early on carried out a diagnostic study to evaluate the expectations of employers of agricultural professionals and graduates in the field with regard to attitudes, knowledge and technical and hard skills required or needed to be successful in their careers. What do they know do start a successful business. As part of this study, a literature review was carried out. The results of the studies and experiences through the years have demonstrated that besides the technical knowledge and skills required to be an specialist in agriculture, other commitments and soft skills are required including: behavior according to values and ethics; sensitivity to social and environmental needs and commitment to generating change; the ability to work in teams; inclusive and positive personal interrelationship skills; ethical leadership; effective communication skills (written, speaking, use of mediums, and social interaction); proactive and autonomous learning; critical, creative, and structured problem solving skills; entrepreneurial and business skills; ability to apply science and technology; and consciousness and commitment to sustainable agriculture and natural resource management. [4]
- Training of the faculty on innovative student learning focused on pedagogy, experiential learning, soft skills, faculty as facilitators, among others was critical to the creation of the Transformative Education ecosystem. It was critical to change thinking and expectation of the faculty, that student learning was priority and that students learn better through experienced based learning. The faculty and students were motivated to learn from failures. When students fail in an exam or in any learning activity, they and the faculty understand that failure can be transformed in a condition to improve and learn from the failures. The importance of education is to learn and not to be penalized from failures. It is clearly understood that if you don't learn from failures then you don't succeed. The culture today among the faculty is clear, the faculty defend the EARTH educational model.
- EARTH sought to identify outstanding candidates to study regardless of their economic capacity, creating scholarships for over 70% of students. This provides more equitable opportunities for disadvantaged youth.

[4] The graduate profile was taken from the Presentation by Dr. Yanine Chan, Dean and Academic Vice-President of EARTH University.

- Students are recruited from rural areas through an intensive interview process, led by the members of the faculty, that seeks to identify youth from low-income families, and others, committed to a more environmentally friendly and sustainable agriculture and the development of their communities, the creation of agricultural enterprises and value added throughout the agroecosystem. It has been found that committed and interested students to agriculture are more successful in an intensive program like EARTH University than students selected just based on academic capacity. The faculty involvement in the selection of students creates ownership and a commitment by them to ensure student success.
- EARTH sought to ensure a gender equity by seeking a 50-50 balance among males and females. It's first recruitment class it reached 12% females. This was due to cultural bias across Latin America. However, EARTH has now achieved a 50% male-female balance today.
- **Students become proactive learners**. The focus at EARTH is to create a dynamic learning environment focused on student learning where students are expected to become proactive learners, become more responsible for their own learning, independent from the classroom, seeking knowledge and understanding from whomever and wherever they can find it. To learn from farmers, businesspersons, community leaders, other professors, their classmates, and through the use of modern information technology to seek answers to their questions.
- **Professors and teachers become Facilitators of Learning**. It is expected, therefore, that the role of the professor or teachers transforms from being the holder of all knowledge or the "teacher" to becoming a "Facilitator of Learning". The person who manages the learning process; designs learning scenarios, and methodologies, that guides the students throughout their learning process, acts as their mentor, and as a sources of knowledge or person that can steer them in the right direction.
- EARTH professors involve students in all phases of the learning process, including designing learning activities, responsibility for planning and organizing, activities including field trips and projects, providing feedback on the course designs and methodologies, and in supporting their students in sharing their experiences. Students are allowed to make mistakes and to learn from them. Opportunities are provided to allow students to learn by discovery along lines of enquiry according to interests, to explore on their own.
- **The relation between faculty and students is critical to the experiential learning process**. EARTH recognizes that students have diverse backgrounds, learning abilities, strengths, and weaknesses. Students must be guided and encouraged, recognizing these differences in the creation of learning opportunities that build on their weaknesses and play to their strengths. Provide them with successes to build up their confidence and direct them in areas where they need more work.
- **Education at EARTH University is value-driven**. Education without values creates professional s that are not worthy. Honesty, respect, justice, ethics are demonstrated institutionally, practiced by all the authorities, professors and staff. The university community acts as a role model for the students.
- **EARTH University's Mission, Vision and Values statement reflect the educational model of the university**. It is the driving force for all decisions at university, including on the curriculum.
- EARTH University discovered very early that the students when they returned from their **internships** were completely transformed into confident, capable, professionals. This led to a need to modify the original fourth year of the curriculum to treat fourth year students as

professionals, and to provide them with leadership experiences within the university learning ecosystem. They are now given responsibilities to work more independently, they supervise students during their work experience activities, they lead community development initiatives, and they provide respected input to the professors on the design of curricular activities.

- The **entrepreneurial business projects program** is one of the most innovative and impactful experiential learning programs at the university. The students form teams of 4-5 students and develop the entrepreneurial projects on their own, with guidance from faculty, and outside advisors. They learn to work together as a team, make decisions, resolve conflicts, think critically, to be creative, envision a future to achieve, and to interact with the ecosystem and rural communities. It helps students develop an entrepreneurial mentality, to think as entrepreneurs, and to be leaders and has had an impact among graduates where over 25% have created and have their own businesses.
- Critically, for a Transformative Education and Learning ecosystem to successfully function at the university, the total involvement of all actors in the university must comprehend and commit to creating and implementing that ecosystem. The senior administration provides leadership and direction, but finance, administration, transportation, purchasing, human resources and talent, all must understand what is required within a transformative education ecosystem. AT EARTH University, everyone understands and feels participative in the educational model. This is a critical strength at EARTH University.

4. Building Transformative Education and Learning Institutions: Pilot Universities of The Transforming Higher Education project

The Transforming Higher Education project provides the case of transforming already existing higher education universities-creating Transformative Education ecosystems. The W.K. Kellogg Foundation, convinced by the impacts they observed from the EARTH University experience, promoted sharing that experience globally, and introducing the model to universities in Mexico and Haiti. In 2018, the Transforming Higher Education project initiated, led by the American University of Beirut in partnership with GCHERA, EARTH University and the WK Kellogg Foundation. The objective of the project was to share globally the five elements of success and experiences; to promote the need for university transformation; and to collaborate with selected pilot universities on the transformation of their educational models by introducing the five elements of success. There were four selected pilot universities (3 in Mexico and 1 in Haiti) that demonstrated openness and commitment to the transformation process and its significance for their graduates of agricultural to become ethical leaders and change agents, and contributing to improving small farmers lives, rural communities and economies, and social systems. The five elements of success[5] are all included as principles of a Transformative Education System, including:

I. Experiential/participatory learning pedagogy
II. University engagement within communities which leads to authentic community development outcomes and opportunities.
III. Integration of entrepreneurial education and business development training focusing on economic, environmental and social impact as part of the technical study program.

[5] This is taken from Jim French et.al. 2020. “Theory of Change for Transforming Higher Education. “

IV. Ethical and value-based leadership urgently needed for peace, inclusiveness, sustainable development, harmony and opportunities; values including integrity, honesty, respect, environmental sustainability, gender, and racial equality, as well as ethnic inclusion (including indigenous populations); and
V. Systemic education of decision making based on problem-solving and conflict resolution through dialogue. and the integration of environmental consciousness, creativity, and innovation.

The EARTH University experience was unique as it was envisioned from the beginning to be what is now considered a Transformative Education and Learning institution. The Transforming Higher Education project experience has focused on introducing transformative changes to existing educational models. The first step in this experience was to select universities that were committed to the change process at the highest levels in their institution, Directors, Presidents, Deans, among others. Without their commitment, continuous support, and involvement, the change process would not be successful. Once this commitment was demonstrated, the transformation process began. The transformation of universities educational systems is a proves that given the nature of higher educational institutes, would be evolutionary, involving senior leadership, faculty, staff, administrators and of course the students.

The following steps were taken to implement transformation at these universities:

- A Transformation Steering Committee was created that would lead and oversee the change process at the university, including the head of the faculties that would be the target of the transformation. The Steering Committee will drive the transformation process with the direct support of the Transformation Facilitator.
- Faculty were assigned to lead each critical element to the change process. Each leader would be a member of the Transformation Steering Committee.
- **A Transformation Coordinator or Facilitator** was named to facilitates the Transformation Process within the College, Faculty or School that is targeted and across the university. He or she is responsible for coordinating, organizing, and administering the change process at the university. This persons is the spokesperson for the transformation process, advocates, motivates, and drives the transformation process, providing support, follow up, monitoring and coordination with key leaders and the project director. This is the person who drives the process, together with the and would also be a member of the Steering Committee. He or She is the Champion for University Transformation with the principal leadership. The Facilitator will have technical and administrative support making up the **Facilitation Team**.
- **Develop a Strategic Change Agenda**, which highlights the long-term goals and strategic objectives of the transformation, (in this case the introduction of the five elements of success), the targets for each, and the timeline and responsibilities.
- **Identifying the enabling changes in critical areas** such as university policies, resources, infrastructure, curriculum, pedagogy, training, that are necessary to successfully introduce the new elements to the educational model. For instance, it may be necessary to introduce changes in university policy on the need for teachers to have open offices, or time programmed in the communities, or problem-solving research, etc. New infrastructure may be necessary, more faculty in critical areas, among others. The enabling elements coincide with the barriers to change for the TAGDEV2.0 project.

- Faculty training was carried out that is necessary to successfully introduce changes must be identified and carried out.

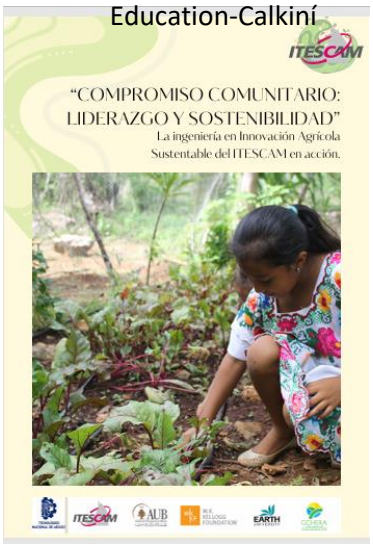
- Once the change agenda was defined an Action Plan was developed to including the interventions that would be necessary to successfully introduce the elements of success. Responsible persons, timelines, key performance indicators and targets, were develop for the implementation of changes to the educational model including the enabling components and the key elements of success. This was in essence the implementation plan that would lead to the successful transformation of the educational model of the university. (This Strategic Change agenda in a sense includes the critical components of a Transformative Education Framework).
- Periodic monitoring was carried out to ensure that the universities were implementing the change agenda and the action plan. The change agenda was reviewed and updated occasionally based on monitoring and experiences requiring modifications. .

The experiences from implementation taught the universities and the project leadership many key issues that should be considered in creating a Transformative Education system. Important lessons learned are listed here:

- Each university is different and therefore their change process will be different. There are differences in resources available, existing policies, student cultures, geopolitical influences, whether it is private or public, governance structures, leadership, among many other differences. Because of this, each university should create their own transformation process. There is no set path that bridges the gap from now to the transformed university. At the same time, the final product, the Transformative Education ecosystem will be different.
- Each university incorporated a consistent and strategic communication strategy on the vsion of the Transformative University. This messaging was led by heads of the university, the facilitators, key faculty members, champions of change, among others. It explained the process, the vision for the future, how students, graduates and communities would benefit. The message is communicated continuously throughout the university, to everyone, as well as new students. faculty, and employees. This is a critical exercise to reach a transformative cultural shift among the faculty, students, and staff, critical to institutionalization of the new model. One university developed banners that were developed by students, designing the message to ensure relevance.

- The transformation process at a university is not a simple or straight path given university cultures. It must involve leadership, faculty, staff, and students in many parts of the process. It must be innovative, which involves taking risks and learning from mistakes. It is an evolutionary process instead of a straight line. For this reason, of the project Theory of Change conceptual map (Jim French, et al, 2020) displays the outcomes process in a circular interactive fashion supporting by the enabling factors..
- The university transformation process should be university wide, involving most critical areas of the university, including administrative, academic, student affairs, university leadership, among others.
- **Development of Systemic Programs for each element of the change agenda**. The introduction of transformative changes within the university system of a given college or faculty is complicated and involves curriculum, pedagogy, faculty, students, leadership and therefore the overall changes must be seen as the introduction of systemic changes in the university. For example, if you are to introduce community engagement, who will lead this process, what is the goal or strategic objectives, what is the scale and range that will be reached (will it involve all students?). What are the key courses within the curriculum that will be included as part of community engagement, what are the complementary courses which will support the process, is problem-based research involved, what are bridges or partners that need to be identified and included, what professors, what resources will be required, when does It initiate, the first semester of the first year, will it involve all four years? What are the soft skills that you seek to develop in the students through community engagement? All of these elements and questions need to be defined and answered as part of the systemic program of community outreach.

Systemic Program of Community Engagement for the Technological Institute of Higher Education-Calkiní



- It is expected that students will become proactive learners. This has shown to be the case as the students advance through their studies. This is based on anecdotal evidence and the results of a student survey shared below.
- The faculty are expected to focus on student learning; design stimulating learning scenarios and ecosystems; and manage the learning processes for the students. Experiential learning must include reflection, open debate, questions, and learning through errors. All of these are critical to building the students competencies, soft skills (including critical thinking skills) and technical learning.
- Resistance to the university transformation on behalf of some of the professors and teachers is expected. Some resist because they do not understand the new model; others resist because they to not believe that change is possible, while still others resist because they are not interested in changing. This last group has a tendency to be older professors, on the verge of retiring, and who are set in their ways. However, many professors are early and enthusiastic adopters, because they immediately identify with the changes. However, for a few, generally a a minority, change will never take place. Resistance to change among professors can be overcome via communication, assigning enthusiastic adopters as leaders or champions of the new model. Others will change as they become more familiar with the expectations, or as they receive more training and see the impact on the students. Some may need other incentives to induce them to change. But again, the transformation of the university is a process and change will not take place overnight.
- Students will see and appreciate the benefits very early on and will demonstrate excitement and commitment. Some students may take more time to see or feel the benefits or may be convinced that parts are not relevant to them. Those who come from the surrounding communities will identify more with the community engagement activities. Those who have lived or work in agriculture will appreciate more the field work, and community engagement, or entrepreneurship, understanding its importance and relevance for them as future professionals

The Transforming Higher Education project recently held a partner's workshop (August 11-13, 2025) where the universities shared experiences on several aspects of the project including Leadership of the Change process, the experiences of implementing the five elements of success, results of surveys of students, faculty, and graduates as well as an intensive day visit to EARTH University. Below are some of the highlighted results that came from the different sessions.

Session: "Implementation of the five elements of success: Results obtained and lessons learned."

- **Student empowerment is fundamental to their learning**, Students are not just recipients, but active agents of change, leading projects and bringing knowledge to their communities. They needed to be provided with an ecosystem which recognizes them as future professionals, providing leadership opportunities and responsibilities.

- **Adaptation of the transformation process** is key to success. Each institution has adapted the model to its own reality, resources, and structure, demonstrating its flexibility.

- The impact goes beyond the classroom. **The transformation process has strengthened the bond between the universities and their communities**, generating tangible benefits and solving real problems.
- **Cultural change within the university is possible**. Although initial resistance is a common challenge, perseverance, leadership support, and evidence of positive results generate a cultural shift that progressively involves more faculty and staff.
- **Student and Faculty Ownership and Leadership is key**. The faculty and students have taken ownership of the change agenda and actions in support of the community. Upon changes in university leadership, the faculty, and even more the students, hae defended the Transformative Education model with enthusiasm and ownership. They will ensure the continuance of the Transformative Education model.
- **Community engagement has strengthened the relationship between the community and the universities**. Students have taken on leadership roles and demonstrated respect for the producers and the community cultures and traditions (Mayan communities). They have observed how graduates that have gone through the completely transformed university culture have now become change agents, developing projects aimed at improving the communities socio-economic conditions.
- **There is a promising future**. The project's success lays the groundwork for its expansion to other programs, institutions, and regions, with the potential to generate a large-scale impact on higher education.

Panel on the institutionalization of educational transformation

- **The sustainability of the transformation depends on a dual strategy** that combines 1. **the creation of formal and "hard" structures** (policies, administrative planning systems, committees, curriculum integration) with **2. the promotion of "soft" and cultural elements** (passionate teachers and transformed students, visible management support).
- **At EARTH University, the Transformative educational philosophy is so deeply ingrained** that it is part of the culture for everyone, from the teacher to the person who works in the cafeteria. The following are critical to the institutionalization of Transformative Education and Learning.
    - **The Professors**. Their passion, faith, and the way they "champion the model" are vital and highly compelling elements.
    - **The students.** They have "a different mindset" and a "changed perspective." Their goal is not just to find a job, but to "grow as leaders" and make an impact. Students have developed a **mindset focused on being leaders and agents of change in their communities**, beyond just seeking employment.
- **The Power of Graduates**: The role of graduates was emphasized as living proof of the model's success. Strategies such as the following were suggested:
    - Alumni Talks: Inviting them to share their real-world experiences.
    - Mentoring: Involving them in mentoring entire classes.

    - Data Collection: Measuring the impact of graduates in their communities to present solid evidence to policymakers.

- **Use of Data for Sustainability**: It was proposed to collect longitudinal data to evaluate the success of program graduates in their communities. This data would serve as concrete evidence to convince educational policymakers and other faculty members of the model's effectiveness, thus justifying curricular changes.
- **Institutionalization is Bureaucracy and Passion**: The main finding is that success lies in the combination of formal structures (policies at AUB, committees at Conkal) with cultural commitment (the passion of teachers and students highlighted in the discussion). One cannot be sustained long-term without the other.
- **Leadership is the Cornerstone to Institutionalization of the changes**: There was complete agreement that visible, synchronized, and consistent support from senior management is the enabling factor that allows for the allocation of resources and gives legitimacy to changes.
- **External Support is an Accelerator, not a Crutch**: It was concluded that, while institutions are building internal capacity, external support acts as a crucial catalyst. It provides not only funding but also constructive pressure, new perspectives, and a collaborative network that significantly accelerates progress.

Experiences and Challenges of Change Implementation

- The panel concluded that the “transformation journey” has been a resounding success despite the numerous and complex challenges. **The key to success has been perseverance, creativity in overcoming limitations, and the ability of the teams to adapt to the particularities of each institution and community.**

- The **shared experiences demonstrate** that the project has not **only improved educational models** but has also **empowered students to become effective and environmentally conscious agents of change.**

- The **challenge for the future** is to **consolidate these achievements, ensure the sustainability of the programs**, and **continue fostering a culture of innovation and social commitment in higher education.**

- The panel emphasized that the **project's success lies not only in the positive results** but also in the **institutions' ability to navigate a complex and often adverse environment**. The details shared during the panel reveal a constant struggle against bureaucracy, resource scarcity, instability, and entrenched mindsets.

- **However, it is precisely these details**—a student teaching in Mayan, a team defending their project before a new director, a university persisting amidst war—**that demonstrates the depth and sustainability of the change achieved.**

- The **transformation has been possible thanks to** perseverance, continuous support, the identification of local "champions," and intelligent adaptation to each specific context.

GENERAL CONCLUSION OF THE WORKSHOP

- **The Impact is Reflected in the Students**: The clearest proof that the transformation works is the change in the students themselves. The panelists observed a greater interest in research, more maturity, and greater commitment when involved in practical, community-based projects. They mentioned that “seeing students take ownership of the project is a key indicator of success.”

5. HOW DO WE KNOW WHEN WE HAVE ACHIEVED THE CREATION OF ATRANFORMATIVE EDUCATION AND LEARNING ECOSYSTEM? WHAT ARE THE MEASURES?

It is very important to measure whether you have been successful in the creation of a transformative education culture within your university or educational institution. This requires that it be clearly defined what is meant by Transformative Education (introduced in Section 2) and what this will look like for a specific institution. In section 3 it is mentioned that EARTH defined itself through the definition of its Mission, Vision and Values and in the definition of its graduates expected characteristics would be through its exit or graduate profile. Its educational model was designed to achieve that **GRADUATE**. In the case of the pilot universities, each university developed a change agenda which defined the overall objectives and the strategic objectives that defined the expected changes that would be made in its educational system. The Transformative Education model should be designed around the graduate profile that has been defined for a specific institution. But it should share the characteristics or principles Transformative Education as shared by the Transformative Education Forum (TEF) and Mukadam Ajetunmob (2025).

Building a Transformative Education system is complex involving making transformative changes at the cultural level within the university. The key question is: when have you successfully achieved the creation of a Transformative Education system. We must first evaluate whether we have been successful in the intermediate term in introducing the strategic changes or reached the expected outcomes (introducing effectively experiential learning, community engagement, entrepreneurial and business, values based education, and conflict resolution among other components that can be considered) and the complementary/ enabling changes (policy, infrastructure, resources, curriculum, human resources, etc.).

The process of measuring the advancement of the project begins first with the action plan. Will this lead to the transformation you envision the outcomes that have been defined in the Theory of Change? Then we must monitor the planned actions and outputs of your project interventions. The action plan should specify indicators that indicate that you are implementing the plan as proposed. And if not, why not? Monitoring should evaluate whether you have conducted the planned training, reviewed the study plan or curriculum, reviewed policies and proposed adjustments and whether these have been carried out on schedule. The monitoring should be part of the normal management process on a periodic basis, which can be quarterly, semesterly, or annually.

The Transformation of Higher Education process required the pilot universities and the project director to prepare monitoring reports every six months, which were reviewed and incorporated into yearly reports by an external evaluator. The semester reports were used by the project management and the pilot universities to ensure that they were on track and to make the necessary adjustments if not. The pilot universities, in a review meeting of the project, **highlighted the importance and utility** of these plans to ensure that they kept on track and moving forward.

The key question for this paper is how we know when the "transformation" has been achieved, in other words, have the outcomes of the project been reached. The theory of change for this project (JBFrench, et al, 2020) indicates that outcomes of the project were the implementation of the five elements of success which make up the Transformative Education model. However, the transformation was a process that took place over the life of the project. It involved the integration of the five elements of success into the university system, which began with introducing preliminary changes, reviewing those experiences, introducing more changes, reviewing those continuously. The transformation is an evolutionary process.

There are many diverse strategies to implement the changes that must be decided. Do you make changes in all years of the curriculum at the same time, or do you begin making changes to the first year for the first incoming class of students and gradually add changes as this class moves through the curriculum (we had pilot universities do each). Do you expect all the faculty to adopt experiential learning at once, or will it be gradual. You will identify needs during the process, and you will seek resources, and then adjust the process over time. You may have a vision and introduce a major, outstanding change that modifies your entire program. It is a learning process to determine what works within the realm of the possibilities of each institution.

Therefore, can we say when we have successfully achieved the expected outcomes since the process is evolutionary? The project's Theory of Change (J.French, et al, 2020) includes a series of peofewaa indicators to evaluate the process of the implementation of the components of the Transformative Education model and whether the implementation reached the outcomes established as part of the project. The principle Transformative Education and Learning model included the incorporation of systemic programs in experiential learning, community engagement, value-based education and ethical leadership, entrepreneurial education, and conflict resolution via dialogue, as the core outcomes. Therefore, the indicators were directed at creating measurements for whether these were incorporated into the educational models at the pilot universities and to what extent. For instance, have they achieved the introduction of experiential learning by 50% or 75% or 100% according to the Facilitators perception.

To achieve these outcomes, and to make them more effective, it is also necessary to incorporate changes in several enabling factors, such as policies, resources, infrastructure, among others. Therefore, it is essential that indicators are created for each of these. However, given that the transformation process is different for each institution, according to their own circumstances, these indicators must be very general and the targets very flexible.

The real challenge is how do you determine that effective change has been instituted. For instance, if we expect to include experiential learning across the curriculum, how do we measure that this is taking place and is being effective. If we institute a policy that indicates that all faculty should incorporate

experiential learning as their core pedagogy, we can evaluate that. But how do we evaluate effectiveness?

To evaluate whether we have effectively created the Transformative Education and learning system, we need to look at two core questions. Have we changed the learning culture at universities? And have we changed the teacher-facilitator culture among the faculty and the culture of the students. We can observe and provide anecdotal evidence as a first step, based on observations and conversations with the people involved. As part of the periodic evaluations, we have interviewed students, faculty, parents of students, university leadership, and based on their feedback you get a feel for whether there has been a systematic change in the culture, the thinking and actions of the students and faculty.

Another method is to undertake systematic surveys of the groups that you wish to evaluate to gain their perspective on whether we have achieved the effects of the changes made. The Transforming Higher Education project has recently undertaken a survey of students, teachers, and graduates of the three pilot universities in Mexico. We are still analyzing the results, which in first analysis are very informative. We will provide some evidence of one of the universities based on the students perspectives of the characteristics of the new Transformative educational and learning model that has been introduced.

A. CASE of ITESCAM – Student Survey

We share an analysis of the student survey applied at the Technological Institute for Higher Education at Calkiní (ITESCAM).[6] Students of Engineering of Sustainable Agriculture Innovation (IIAS) were surveyed which has been the target of transformation process. This group was compared to students from other programs in the Institute who were also surveyed. The results provide the perspective of the students on many areas related to the implementation of the key components of the Transformative Education and Learning program. The comparison is based on the percentage of the surveyed students who answered the questions at a satisfactory level: 8 or higher on a scale of 1-10 indicating their level of satisfaction.

The survey included 63 students from IIAS and 23 students from the control group of students from other academic programs. Students were included in all five years of the academic programs.

The survey questions were distributed into 4 groups of questions:

1) Satisfaction with the educational model
2) Effectiveness of the learning process
3) Development of entrepreneurial skills
4) Community engagement

[6] The survey and analysis were carried out by ITESCAM Professors Dr. Angel Can, Dr. Felipe Gonzalez, Dr. Mario Ben-hur Chuc, Dr. Gonzalo Quetz, Dr. Marlene Méndez Moreno and M.Sc. Mildred Yazmin Uc Yah and will be included in a future publication.

Figure 1 Level of Satisfaction with the experiential learning educational model

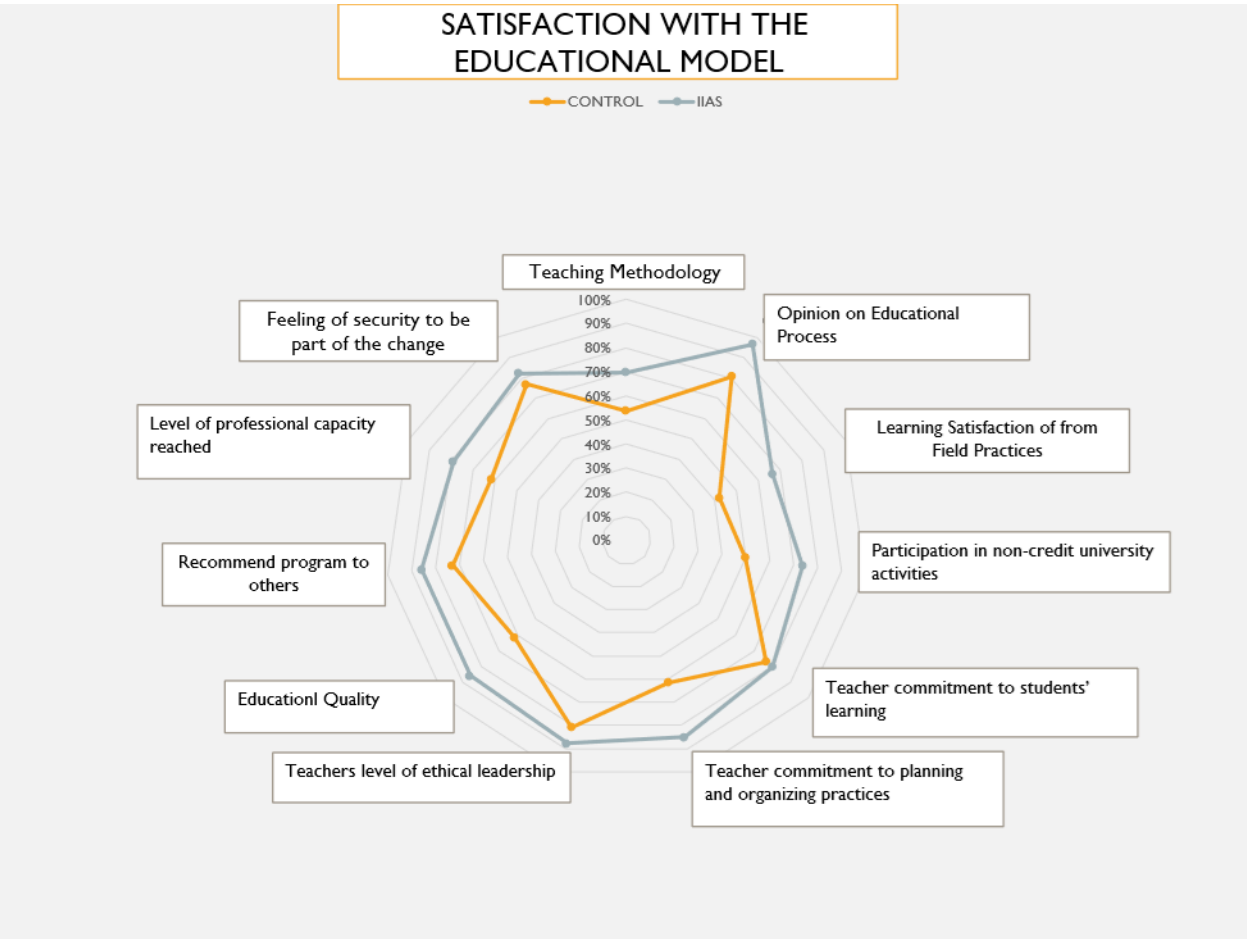


Figure 1 provides the level of satisfaction of characteristics related to the educational model as implemented at ITESCAM. There are several things which stand out here.

- The implementation of experiential learning at the university has resulted in higher levels of satisfaction among the IIAS students than the control group. There are several components that stand out in terms of the perspectives on the part of the IIAS students versus the control group.
- In general, almost 100% of the IIAS students are happy with the experiential learning education model versus around 80% of the control group are satisfied with their model.
- The level of learning from the field practices is much higher for the IIAS, close to 70%, than the control which is around 40%. Based on in person interviews with students on their internships they felt that there was a need for more practical experiences as part of the learning process. There are currently very few field practices during the first and second year. This may explain why the percentage of satisfied IIAS students is only 70% although much better than at other programs.
- Student participation in non-credit university activities is higher in the IIAS group, a little over 70% of students feel they participate, versus 50% for the control group.

- There is a high percentage of students who feel that the commitment by teachers to planning and organizing practical activities for the students is at satisfactory levels, at around 85% while for the control group it is around 50%.
- The other most outstanding result related to educational model is that there is almost 90% of the IIAS students are satisfied with the quality of the education versus around 60% for the control group, indicating greater satisfaction with the introduction of experiential learning, and the commitment of producers to their education.

Figure 2: Learning Effectiveness at IIAS-ITESCAM

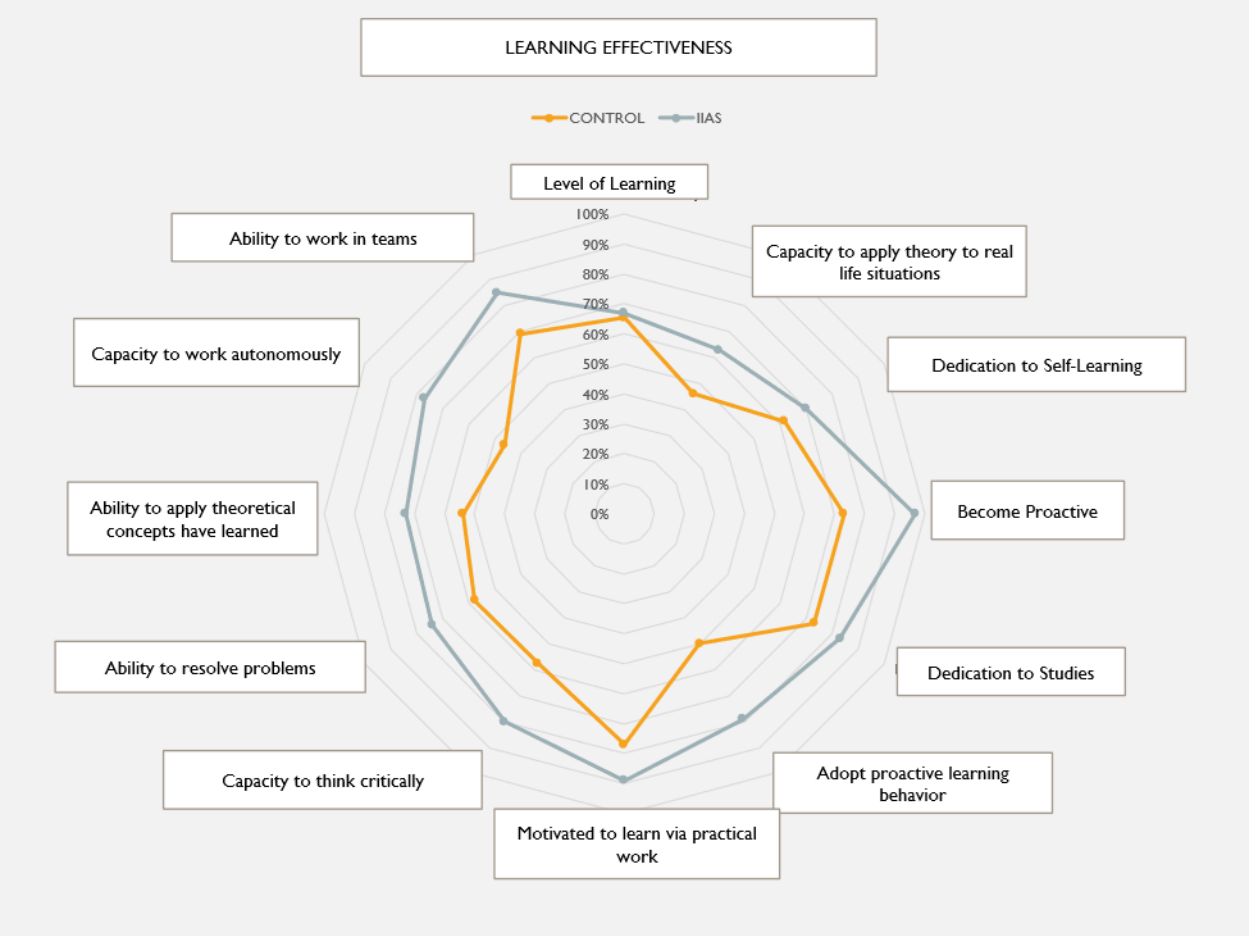


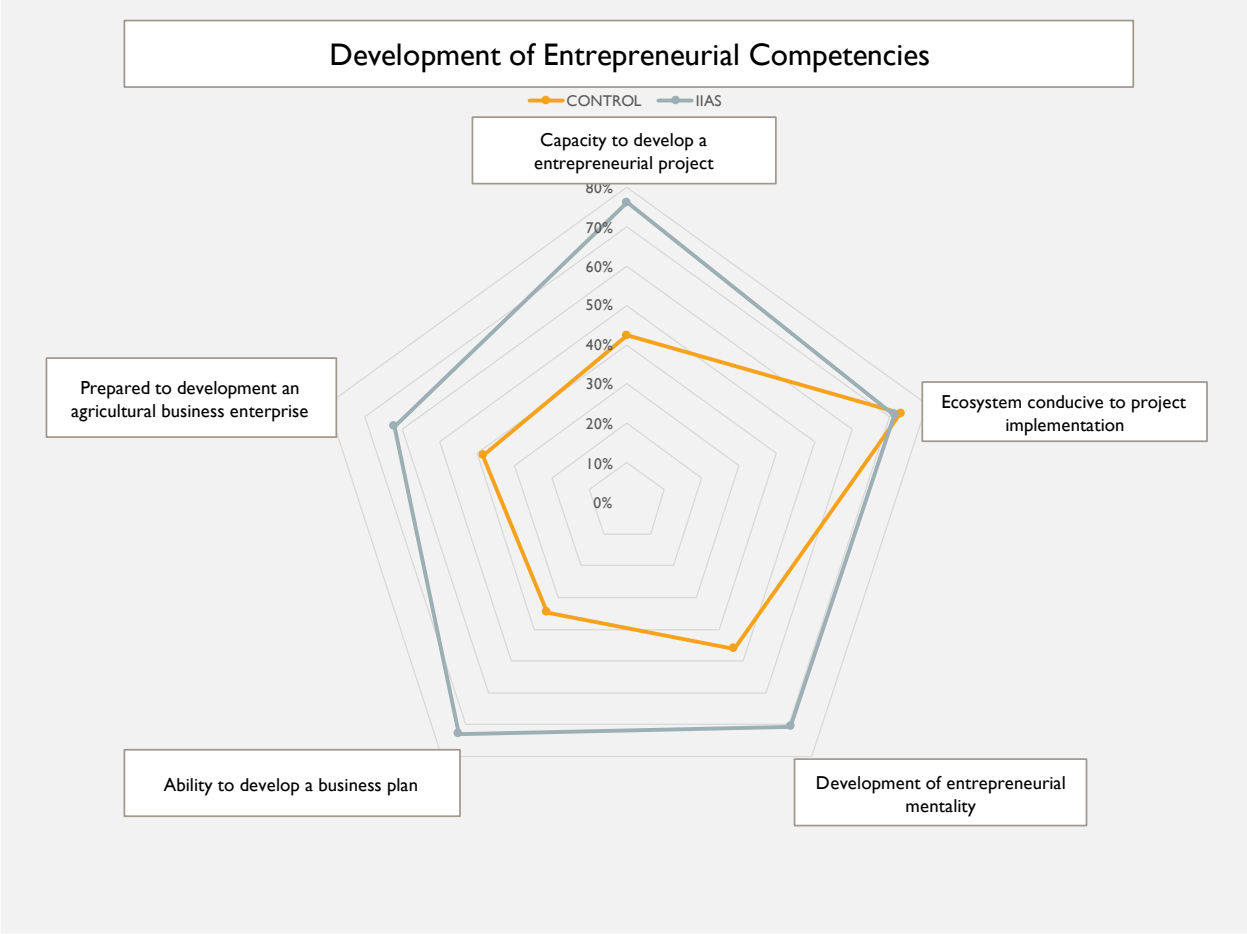
Figure 2 addresses the question of whether the students are taking advantage of the Transformative Education experience and whether there has been a cultural shift in the thinking and actions of the students.

- The IIAS students in general perceive themselves with higher levels of learning behavior than the control group. Some specific differences that stand out include:

- Almost 100 % of IIAS students indicate that they have become proactive participants within the learning process whereas the control group indicates around 70% feel the same. And around 80% of the IIAS students feel they demonstrate proactive learning behavior, while around 50% of the control group feel that way.
- Close to 80% of the IIAS students feel they are able to think critically while around 60% of the control group feel the same.
- Around 75% of the IIAS group are satisfied that they are able to resolve problems and apply the theory to real life situations, while the percentage of the control group that fee that way is is much lower at around 55%.
- Around 80% of the IIAS students are satisfied that they are able to work autonomously, while for the control group only 50% feel the same. This is a clear demonstration of the impact on the students of an experiential learning system.
- The students of IIAS indicate a higher ability to work in teams with around 85% students that are satisfied compared to around 70% for the control group.

All of these demonstrate a cultural shift of the students perceived abilities and learning behaviors.

Figure 3: Development of Entrepreneurial Competencies



The survey had a series of questions directed at evaluating the competencies of the IIAS students to develop businesses. Figure 3 displays the results of the IIAS group compared to the control. Again, the IIAS group has higher percentage of students that are satisfied with their abilities in this area than for the control group. The following points distinguish themselves.

- The IIAS students are more prepared to develop an entrepreneurial project with almost 80% of the students reporting satisfaction versus around 45% for the control group. This clearly indicates that there is a clear emphasis in the development of this competency in IIAS whereas this competency may not be emphasized in other academic programs at ITESCAM.
- A little over 70% of the IIAS students report that they have satisfactorily developed an entrepreneurial mentality whereas less than 50% of the control group report a satisfactory level.
- Over 70% of the IIAs students report they are satisfied that they are able to develop a business plan while the control group reports less than 40 % believe are able to do so.
- Just a little over 60% of the IIAS group are satisfied that they are able to create an agricultural business while only 40% of the control group feel the same (in the control group the question was changed to develop a business, not an agricultural business).

Figure 4: Community Engagement

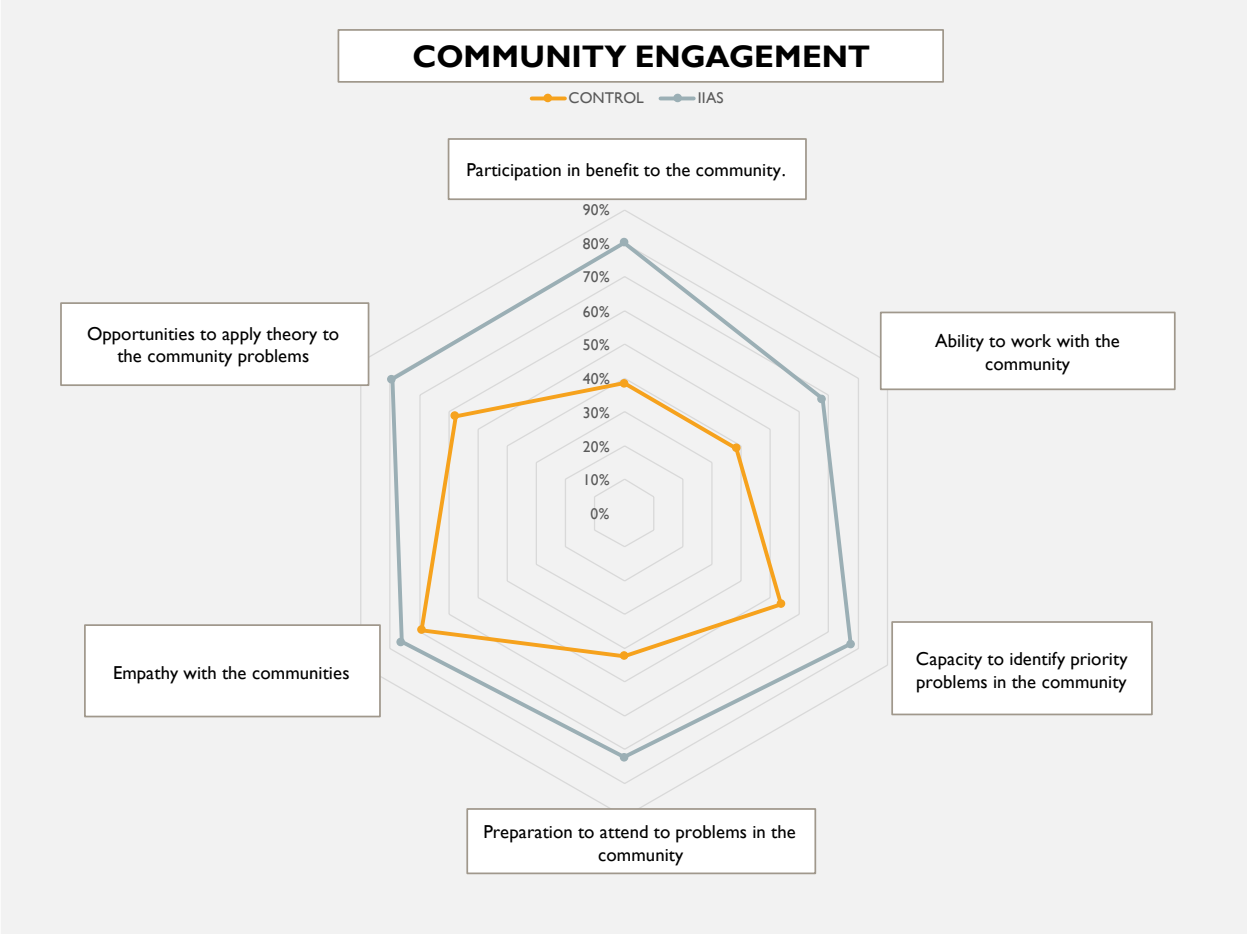


Figure 4 reports the development of knowledge and skills necessary to interact with and contribute to development in the communities. As seen, the IIAS percentage of students who report satisfaction with the community engagement initiatives is higher than the for the control group for all of the relevant areas except one, whether the students have a strong empathy for the community. This is virtually the same for both groups, which is not surprising as more than 90% of the students at thee Institute come from Mayan communities regardless of their academic studies.

- Over 85% of the IIAS students feel that they satisfactorily participate in benefit to the communities, whereas for the control group around 40% of the students feel they have the opportunity to participate in benefit to the community.
- Around 70% of the IIAS students feel that they have satisfactorily developed the tools necessary to work with the communities while this is around 40% for the control group. Students in IIAS are offered skills in later years in the curriculum, which probably explains for the 70% as the population surveyed includes students from the first to the fifth and final year of their studies.
- Almost 80% of the IIAS students feel that they have the capacity to define priority problems working with the community, whereas a little over 50% of the control group feel that way.
- A little over 70% of the IIAS students feel that they have the preparation necessary to work with the community in the solution to their problems while for the control group it is just a little over 40%.
- And finally, while 80% of the IIAS students feel that they have the opportunity to apply the theoretical concepts they have learned to solving community problems, the control group only reports that 60% feel that they have this opportunity.

As this analysis demonstrates, the Transforming Higher Education project has developed opportunities, knowledge, skills and competencies for contributing to learning, business development, and contributing to community and small producer development. The students clearly express that they have changed and become more proactive learners and participants with the capacity to contribute theoretical concepts that they have learned in class to developing community projects, businesses, and to further their own learning.

We must review whether the faculty have changed their culture. The students feel that they have.

B. CASE of EARTH University – Impact of its Graduates

Measurement of the impact of a project or in the creation of a Transformative Education System requires having a very good understanding of what the expected impacts are. EARTH University offers scholarships to at least 70% of its students globally. This is an investment in the contribution that its students will make to creating a more sustainable prosperous agriculture and rural ecosystems sector and a society which is more prosperous and aligned with its Mission and Vison.

How do you evaluate the graduates impact? The expected impacts that we would want to evaluate are first on whether the students have graduated with the competencies and capacity to act as change agents, to make contributions to sustainable agriculture and the development of the rural communities and society. Secondly we would want to evaluate whether via the new educational system the university and the graduates are achieving the impacts that are expected.

EARTH University reports on their webpage that they have graduated over 3,000 person who are distributed among 55 countries globally. [7] Of these, 24% have their own businesses, 63% are involved in improving agricultural production, 46% contribute to the adaptation and mitigation of climate change within the agricultural sector, and 73% of these hold managerial-leadership positions, including Ministers of Agriculture and the Environment, Vice-Ministers, Directors of Research and Extension within the ministries, CEO's of their business, CEO's of ONGs, as well as other managerial positions.

How would you evaluate whether the EARTH University graduates have the characteristics or the exit profile required to be employable, to create businesses, to contribute to sustainable development of the agriculture and rural communities? EARTH has defined these characteristics in their graduate profile, and it has designed its curriculum and learning environment to prepare graduates with this profile. The graduate profile includes the following components or characteristics:

1. Exercise leadership – the ability to make decisions, promote change, ensure that others do so at local and global levels.
2. Behaves in accordance with EARTH's Values and Principles-respect towards the principles that govern The Universal Declaration of Human Rights, driven by EARTH University's values to contribute to sustainable development and build a prosperous and just society.
3. Is sensitive and committed to solving social and environmental problems-ability to identify needs and commit to opportunities that promote human and the planet's welfare.
4. Communicates Effectively-capacity to communicate in an effective, assertive and multimodal manner.
5. Builds effective interpersonal relationships and teamwork-ability to interact collaboratively and with emotional intelligence, in diverse, intercultural, and interdisciplinary contexts, motivating and leading teams towards common goals.
6. Has a commitment to lifelong learning - attitude to learn and keep themselves updated.
7. Solves problems in a structured way-ability to identify, raise, and solve issues in a critical, creative and structured way.
8. Has a solid technical foundation-ability to solve agricultural, community development, and environmental management problems.
9. Possess managerial and entrepreneurial capacity-ability to develop and manage projects based on the identification of rural community development and environmental management opportunities, with a global and entrepreneurial perspective.
10. Works for the sustainable development and management of agriculture and natural resources.
11. Applies science and technology-ability to create, promote and manage technological change, produce new scientific knowledge and technologies for sustainable rural development.

EARTH University defined a graduate profile for its graduate early in the development of the university based on the needs and demands of employers, and society. It helped guide all decision making involved in creating an innovative educational model, which has been used as a base in creating Transformative Education and Learning systems for the pilot universities at the pilot universities. The original graduate profile is very similar to this present profile as reported above. An evaluation of the opinions of EARTH

[7] This information is taken from the EARTH University website, Impacto de Graduados – EARTH.

graduates and employers was undertaken in 2019. Irmino Perera (2019) shared these results for the EARTH Graduates where they indicate the level of their competency for each soft skills as reported Table 1.[8]

Table 1 Evaluation of competencies by EARTH University Graduates

Competency	Role	Score	GAP
Ethical Commitment	9.35	8.86	0.49
Teamwork Ability	9.31	8.91	0.40
Leadership	9.17	8.45	0.72
Interpersonal Skills	9.17	8.29	0.89
Ability to Motivate and Lead Towards Common Goals	9.12	8.24	0.88
Commitment to Environmental Preservation	8.98	9.14	-0.16
Creative Ability	8.91	7.90	1.01
Social Responsibility and Civic Engagement	8.90	8.61	0.29
Appreciation and Respect for Diversity and Multiculturalism	8.87	9.08	-0.21
Ability to Work in International Contexts	8.72	8.35	0.37
Commitment to their socio-cultural environment	8,65	8,73	-0,09

This evidence indicates that the EARTH University Graduates in 2019 perceived they have very high levels of competency, in Values and Ethics, Teamwork, Leadership, followed by Interpersonal relationship skills, and their ability to motivate and lead toward common goals, which is related to Leadership. This is very consistent with studies from other parts of the world that highlight Values and Ethics, Leadership, communication skills, interpersonal relationship skills and teamwork as critical soft skills necessary for professional success by employers and graduates (see Crawford et al., 2011).

6. Conclusions

It is very critical that the university carefully and creatively define the characteristics and critical components of the Transformative Education and Learning ecosystem that is appropriate for their university and the Long-Term Goals that they expect their students and the university to reach. In the case of the TAGDEV2.0 project It is clear, that the university will prepare students that are employable, and capable of creating businesses, who will be agents of change that will contribute to the rural development, job creation, and sustainable agriculture and value added agrifood systems. The identification of the characteristics and components should consider the principals of Transformative Education as shared by the TEF-Global Transformative Education Forum.

[8] This table was reported by Irmino Perera, Professor of Ethics and Values at EARTH University, in a presentation "Leadership based on Values" given in the project Orientation and Global Seminar organized for the Transforming Higher Education project pilot universities in 2019. This information was taken from Rodriguez Fenandez, Carlos (2019).

The university must develop a plan, that incorporates leadership, professors, students, and other key staff in the development of a Vision for Change or a Strategic Change Agenda, and Action plan. The vision for change must be communicated continuously, and consistently to everyone in the university and that it is a strategic policy of the university leadership to transform their university educational system as part of the TAGDEV2.0 project and therefore contribute to rural development through its strengthened institutions and partnerships and its graduates.

It is essential that the implementation of the action plan be monitored, evaluated, and modified when necessary. To initiate the transformation of an educational system can meet resistance, especially among faculty, but perseverance, communication, and student enthusiasm will overcome resistance, as long as the university leadership is committed and supports the transformation.

You will recognize when changes are taking place as there will become a change in culture, a change in discourse, and a change in the students themselves as they become more proactive and take ownership of the new educational model. You will recognize that changes are ongoing through observation, conversations, and eventually by taking surveys to get a better understanding of the perspective of key groups.

In the medium to long term, you will be able to measure statistically some key factors. The number of applications is expected to increase as parents and potential students hear about the new programs, it relevancy and the quality of the educational system. The admission numbers are expected to increase as long as there is excess capacity for new students. It is expected that dropout rates will fall as the students become more interested in the university ecosystem offering more opportunities, more exciting classes, and students become more proactive learners. Of course, this data should be evaluated as to the reasons that students dropout (Covid, economic problems, illness, family problems, among others), The percentage of students that began the program graduating is another indicator. It is expected that a greater percentage of students graduating will increase as students become more stimulated, more proactive, more interested, as self-autonomous learners and actors within the university ecosystem.

Of course, the test of whether the new Transformative Educational model is creating the graduates that society needs, that will create the impact and lead to improvements in the rural communities, in the lives of agriculture, in the creation of new agribusinesses and development, requires a more detailed impact analysis. Impact studies on the graduates and their impacts on the rural communities cannot be carried out until at least two years after the first graduates of the transformed educational model system. Although partial studies should be considered. It is possible to do evaluations of the impact of the Transformative Education system on the communities directly through the bridges created with partners in community development and research.

The results of EARTH University, based on anecdotal observations, and discussions with graduates, employers, and other people from their countries, indicate that their innovative educational model has had the desired impact. Their graduates are changing the rural agricultural economies and beyond in their countries. The TAGDEV2.0 will have similar results once the Transformative Education models are initiated and begin to change the university culture and the first students process through the new educational experiences, and contribute to the ongoing transformation process.

7. REFERENCES

Ajetunmobi, Mukadam, 2025. TRANSFORMATIVE EDUCATION-POLICY BRIEF. "Transformative Education: A Framework for Global Citizenship and Sustainable Development." "3/22/2025. Available at: https://www.humantransformativeeducation.com/transformative-education-policy-brief-unesco. Accessed on November 21, 2025.

Arbeiter, Jana Arbeiter and Maja Bučar, 2021. "Transforming Education Bridging Education for Change". Available at: https://www.researchgate.net/publication/354209422_Transformative_Education_Bridging_Education_for_Change. Accessed on November 21, 2025.

Ayales, Ivannia, Susana Rochna, 2025. Dr. Jose Zaglul Slon: The Power of a Seed. Ivannia Ayales Cruz and Susana Rochna Blaya – First Edition – Heredia, C.R.: Authors, 2025

Crawford, P., Lang S. Fink, W., Dalton, R., & Fielitz, L. (2011). Comparative Analysis of Soft Skills: What Is Important for New Graduates? Washington D.C. Association of Public and Land Grant Universities. Available at: https://www.aplu.org/members/commissions/food-environment-and-renewable-resources/CFERR_Library/comparative-analysis-of-soft-skills-what-is-important-for-new-graduates/file. Accessed 21 November 2025.

EARTH University, 2025. "Alumni Impact". Available at: https://www.earth.ac.cr/alumni/alumni-impact/. Accessed on November 21, 2025.

French, Jim; Roula Bachour; and Rabi Mohtar, 2020. Theory of Change for Transforming Higher Education: Project Narrative. American University of Beirut. 2020. Available at : https://transforminghigher.education/wp-content/uploads/2020/12/Transforming%20Higher%20Education%20Project%20Theory%20of%20Change%20Narrative.pdf. Accessed on November 21, 2025.

Kalantzis, Mary and Bill Cope, 2008-2022. New Learning: Elements of a Science of Education (Third Edition), Chapter 2 Life in Schools: Section "Transformative education: Towards New Learning." Cambridge UK/Champaign IL: Cambridge University Press/Common Ground Research Networks, 2008-2022. Available at: https://newlearningonline.com/new-learning/chapter-2/transformative-education-towards-new-learning. Accessed on November 21, 2025.

Paul, L.A. and John Quiggin, 2020. "TRANSFORMATIVE EDUCATION". EDUCATIONAL THEORY, Volume70, Number5, 2020. Available at : https://www.lapaul.org/papers/Transformative%20education%20Paul%20Quiggin.pdf. Accessed on November 21, 2025.

Steps for Kids Editorial Team (2024). “Understanding Transformative Education: Explained in Depth”. November 14, 2024. Available at: https://steps4kids.com/what-is-transformative-education/. Accessed on November 21, 2025.

Rodríguez Fernández, Carlos Manuel (2019) Perfil de Salida del Licenciado en Ciencias Agrícolas en la Universidad. -1a ed. – Guácimo: EARTH University

TEF-Global (Transformative Education Forum), 2025. “PRINCIPLES OF TRANSFORMATIVE EDUCATION”, 2025. Available at: https://tef-global.org/principles-of-transformative-education/. Accessed on November 21, 2025.

UNESCO, 2021, “Five questions on transformative education (Unesco)”. 26 November 2021. Available at: https://www.unesco.org/en/articles/five-questions-transformative-education. Accessed on November 11, 2025.

University of Exeter, 2025. ” Transformative Education at the University of Exeter”. Available at : https://www.exeter.ac.uk/about/vision/successforall/transformativeeducation/. Accessed on November 21, 2025.

Western Governors University (WGU), 2020. “What is Transformative Learning Theory”. July 17, 2020. Available at : https://www.wgu.edu/blog/what-transformative-learning-theory2007.html. ccessed on November 21, 2025.

Yusuf Olawale Owa-Onire Uthman, “How Transformative Education Empowers Social Justice: Bridging the Gap between Knowledge and Action.” COMPETITIVE: Journal of Education, Vol. 2 No. 4 (2023) ISSN : 2964-2345, Journal website. Available at: https://competitive.pdfaii.org/. Accessed on November 21, 2025.