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## Article

# Training Teachers to Cope with Refugee Children's Needs through the Lens of SDGs

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**Abstract** Increasing numbers of refugee children enter host countries' public schools. Yet, most refugee children's education is carried out through refugee community schools, mainly by unqualified teachers. This study examines critical elements impacting teacher training satisfaction, emphasizing instructors' preparedness and skill, and the effectiveness of training outcomes within a post-graduate program to improve education for refugee children. It supports the Sustainable Development Goals (SDGs), especially SDG10, which calls for lowering inequality, and SDG4, which strongly emphasizes high-quality education. A sizable sample of 306 out of 386 individuals who had finished the RefTeCp capacity-building program participated in the study. These people worked in various educational environments, such as community schools for refugees and private establishments. The study guaranteed its legitimacy through a thorough reliability analysis and content evaluation. Multiple regression techniques were used in data analysis to identify the crucial factors influencing teacher training satisfaction. According to key findings, the efficiency of teaching materials and instructors' abilities to manage blended learning environments substantially correlate and explain teacher training satisfaction. The study's results highlight several essential facets of teacher professional development, such as focusing on suitable high-quality blended learning materials and resources to improve refugee students' learning needs and experiences. Continuing teacher capacity-building interventions, and allowing refugee teachers to participate, can significantly contribute to reducing inequities and, ultimately, to a more equitable and just society.

**Keywords** SDGs; refugee education; teacher training; Egypt; training satisfaction; blended training mode; training materials

## 1. Introduction

The Middle East Region and Europe have faced one of the most critical refugee crises in history, with global and regional consequences [1,2], which have unavoidably led to an education crisis [3]. At the end of 2023, due to war, violence, and violation of human rights, 117.3 million people were forcibly displaced globally, of whom 37.6 million were refugees, and most of them were under the age of 18 [4]. Sixty-nine percent of refugees were hosted by neighboring countries such as Egypt, which received 240,507 refugees by 2023 [5]. Displaced people are often excluded from public institutions, including education [6], which has raised voices for offering suitable treatment to refugee children [7]. Refugee teachers also face significant barriers to credentialing their knowledge and experience in the host countries [8]. Children of refugee background also face various problems, not limited to education, as they try to adjust to the host countries' societies and educational systems [9]. The inclusion of refugee children in the host countries' education systems is not only a human right but also a basic need that reflects several Sustainable Development Goals (SDGs) such as SDG3 (Good Health and Well-being), SDG4 (Quality Education), SDG10 (Reducing Inequality), and SDG16 (Peace, Justice, and Strong Institutions). Human rights lie at the core of the 2030 Agenda. However, it has to be stressed that refugees, a vital part of the most vulnerable population, are not directly integrated into any of the 17 Goals. The

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## Highlights of Science

only exception is that an explicit reference to refugees is only made under SDG10, Target 10.7, stating the need for “orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies” [10].

The UN Agenda envisages a world of universal respect for human rights and dignity, the rule of law, justice, equality, and non-discrimination, respect for race, sex, ethnicity and cultural diversity, and equal opportunity, permitting the full realization of human potential and contributing to shared prosperity. It envisions a just, equitable, tolerant, open, and socially inclusive world in which the needs of the most vulnerable are met. However, when a low-income country faces a sudden influx of hundreds of thousands of refugees, accommodating them in national schools can be a significant challenge, especially when schools in the hosting area are overcrowded and under-resourced [11]. SDG4 highlights the importance of supporting the education system to be “*inclusive, responsive and resilient*” [10]. This suggests that the education process should continue to serve all who need it, regardless of nationality, social, economic, legal, or political background. It also emphasizes providing education at various stages of the humanitarian crisis, from the early emergency phase to recovery and the longer-term development phase. Upholding those rights means that children and young people continue to have the opportunity to access education despite the dynamic conflict.

Despite a growing number of refugee education interventions over the past years, access and quality remain significant challenges [12]. While some countries, such as Egypt, allow refugees to access public education, others only offer informal education for non-registered refugees [13]. Furthermore, many refugee children live in learning poverty, lacking essential reading, writing, and numeracy skills [14,15]. Findings also indicate that refugee-receiving schools must involve refugee learners’ families in their children’s education [16]. Other studies reveal that attention should be given to refugee community leadership to empower community members [17]. Previous research shows a general lack of robust evidence on what works to improve quality learning for refugee children [3]. There is also little understanding and knowledge of how teachers experience, perceive, and assess their teaching capacities to address refugee learners’ needs within the school environment [18]. Refugee children’s well-being is addressed by SDG3, which also aims to ensure healthy lives for all ages. Health and well-being are essential at every stage of life, starting from the beginning. In general, although teachers are recognized to play an instrumental role in promoting refugee children’s cognitive skills along with social and psychosocial support, there has been little effort to understand how teachers interact with refugee and migrant learners [19,20], especially in promoting children’s well-being, social, and emotional skills [21,22].

Previous research also highlights the transformative potential of culturally responsive teaching, especially if combined with action research in cooperation with members of the dominant ethnic and cultural group [23–25]. Similarly, previous research reveals that although teachers, especially in the faculties of education, are very conscious of the needs of refugee children, they stress that they have few opportunities to deal with these needs [26,27]. Without proper recognition and support for both preservice and in-service teachers, the education of children affected by displacement remains at risk. If not tackled, we will fail to achieve Sustainable Development Goals, especially SDG4 (Inclusive and Quality Education) and SDG10 (Reduced Inequality). Indeed, equitable access to education and resources and the quest for refugee-friendly school curricula have been highly acknowledged [28]. Particular emphasis is given to teachers’ critical role in providing quality education [29,30]. Teachers are vital for integrating immigrant, refugee, and asylum-seeking students into education. Reducing inequalities (SDG10) ensures equal opportunity and access to education and social services, including eliminating discriminatory policies and practices [31,32]. Tackling the various forms of inequality facing refugee children in the host countries is a critical step in the struggle against poverty (SDG1), food security (SDG2), and improving social cohesion (SDG10).

However, they are not often prepared or supported to meet the needs of refugee learners [33]. Teacher training programs rarely focus on strategies and interventions for refugee learners’ needs and even less on their particular socio-psychological and emotional problems, leaving teachers mainly unprepared to deal with these issues [34]. Teachers of classes with refugee learners are expected to develop strategies specific to the needs of refugee students, including general classroom management strategies and empathic and multicultural thinking, and comply with SDG4 and SDG10. Thus, teachers must develop new skills and knowledge to tackle refugee students’ social, emotional, and cognitive development and provide an effective learning-teaching environment using new teaching methods and special classroom management skills [35,36]. The lack

of teachers' training on refugee students' learning and psychosocial needs is highlighted in previous research [37].

Accordingly, both Egyptian and refugee teachers should undergo training to be responsive to refugee learners' cognitive, emotional, social, and psychological needs. In particular, the issue is giving access to qualified refugee teachers in higher education institutions to gain the knowledge and skills to tackle the problems refugee learners face in their host countries. In addition, many unqualified teachers serve the refugee community schools. Providing educational opportunities for qualified and unqualified refugee teachers will significantly contribute to their professional development and, by extension, to quality education. By qualified teachers, we mean those who have graduated from teacher education schools and have been working as teachers in their countries, and by unqualified, those teachers who, although serve refugee community schools, have not received an education degree.

These problems and challenges were tackled by developing an innovative in-service teacher certification program (RefTeCp) enabled through a blended training mode in four partner universities in Egypt. More specifically, the RefTeCp project addressed two crucial issues: 1) the lack of teacher education in preparing pre-service and in-service teachers to respond to the pedagogical and socio-psychological challenges facing refugee learners, and 2) the need to develop an innovative in-service training program that gives access to refugee teachers in Egyptian Higher Education through a post-graduate diploma focusing on refugee pedagogy, including flexible learning paths and blended training modes. The RefTeCp teacher capacity building project combined off-the-job and on-the-job training, primarily through reflective practice, integrating peer coaching and mobile mentoring. It also developed a strategic partnership between four universities that have pre-/in-service teacher training and were associated with public and refugee community schools. Besides the development of a blended in-service teacher training program leading to a post-graduate diploma of 60 ECTS (European Credit Transfer and Accumulation System) in the four Faculties of Education, there was a focus on aligning curriculum, teaching, learning, and research in the area of refugee children education as well as developing training materials suitable to blended training and more concretely of an e-Tool Kit addressing refugee children cognitive, social and psychological needs. The key objective of the current study was to assess the impact of the RefTeCp capacity-building undertaken to train Egyptian teachers and teachers with refugee backgrounds. The hypotheses tested are as follows:

H1: The trainees' satisfaction with the content of the training is expected to be significantly predicted by a) instructors' training skills and knowledge of refugee education, 2) the suitability of training materials, 3) the learning outcomes achieved, and 4) trainees' satisfaction with the blended training mode.

H2: The instructors' capacity for refugee education is expected to be significantly predicted by a) the trainees' satisfaction with the content of training, 2) the suitability of training materials, 3) the learning outcomes achieved, and 4) trainees' satisfaction with the blended training mode.

H3: The learning outcomes achieved are expected to be significantly predicted by a) the trainees' satisfaction with the content of training, 2) the suitability of training materials, 3) the instructors' training skills, and 4) trainees' satisfaction with the blended training mode.

## 2. Materials and Methods

### 2.1. Subjects and Procedures

In total, 306 out of 386 trainees who attended the RefTeCp capacity-building program responded to the evaluation survey. Regarding the distribution of responses, 25% were trained at Al Azhar University, 28% at Aswan University, 20% at Zagazig University, and 27% at October 6 University. In total, 67% of all those trained were females. The data collection took place in February 2022, two months after the end of training. The respondents were informed about the study's aim, and the authorities' agreement for data collection was ensured before conducting the survey. Participants were also notified about the anonymous treatment of the data.

### 2.2. Research Instrument

A structured questionnaire was developed based on 20 variables measuring: a) the trainees' satisfaction with the subject and content of training; 2) the effectiveness of the instructors in dealing with refugee teaching; 3) the suitability of the teaching and learning materials developed and used for the training; 4) the learning outcomes of training; and 5) the trainees' satisfaction to the

blended training sessions. More specifically, satisfaction with the training measured how well the subject was covered during the training time available, the quality of the training in terms of the trainees' expectations, and the usefulness of the training to their (anticipated) professional needs. Evaluation of the instructors measured the extent to which the trainees perceived that the instructors had a broad and deep knowledge of the subject, how they explained and answered questions well, whether or not they used relevant examples when applicable, motivation to learn, provision of sufficient support and feedback for the learning process and fulfillment of their roles and obligations. Evaluation of the training materials included items measuring the type and effectiveness of teaching and learning materials for the training. In contrast, assessment of the learning outcomes measured knowledge and understanding of the training subject, tackling refugee children's needs, ability to collaborate and work in teams, specialized expertise in refugee teaching, and ability to locate and analyze information related to the refugee children's teaching and learning needs. Finally, the evaluation of the blended training mode measured how well the instructor used the blended training mode and how much the blended sessions contributed to a better understanding of the training content. Participants were asked to rate their level of agreement on a 5-point Likert scale from 1 (lowest rate) to 5 (highest rate).

### 2.3. Type of Analysis

Multiple regression was used to examine the hypotheses set. It is a type of analysis used when we want to predict the value of a dependent variable based on the value of two or more other independent variables. This method also allows us to determine the regression model's overall fit (variance explained) and the contribution of each predictor to the total variance explained. Descriptive statistics were also used to check the data distribution, the independence of observations (i.e., independence of residuals), and the absence of significant outliers. In addition to that, an examination of multicollinearity, which occurs when two or more independent variables are highly correlated, was carried out using the variance inflation factor (VIF) and tolerance metrics.

## 3. Results

### 3.1. Descriptive Statistical Results

Table 1 shows the five composite variables described in the methodology section, the number of measuring items in each; the mean corrected inter-item correlation coefficients (MIIC) of each composite variable scale, and the result of Cronbach's reliability coefficient. The reliability test shows that the instrument is excellent, ranging from  $\alpha = 0.80$  to  $\alpha = 0.95$ . The standard deviation (SD) values depicted in Table 2 ranged from 0.45 to 0.61, the level of skewness ranged from 0.10 to  $\pm 0.80$ , and most kurtosis values were below 2.00. These results show that there are some narrow spreads around the mean, the tails are a bit lighter than the normal distribution, and, in general, a relative spread from the normal distribution can be accepted in this statistical analysis [38,39]. The mean of the items measuring these five key factors determining the quality and successful implementation of the RefTeCp capacity-building program ranged from 4.5 to 4.6 on a 5-point Likert scale. Table 2 indicates that all the correlation indices were statistically significant among the five composite variables at  $p < 0.001$ . The highest intercorrelation observed was the one between blended modes of training and training outcomes ( $r = 0.73$ ) compared to the lowest one with training content satisfaction ( $r = 0.48$ ) and teaching and learning materials ( $r = 0.47$ ). The next highest intercorrelation was between training outcomes and instructors' teaching capacities ( $r = 0.62$ ). The results concerning collinearity measured by the VIF metrics for the regressed variables ranged from 1.7 to 2.4. The tolerance score was found between the range of 0.40 and 0.61. Thus, there is no multicollinearity problem when carrying out a regression analysis.

**Table 1.** Reliability test results.

Composite Variable Scale	Number of Items	MIIC	Cronbach's $\alpha$
Training satisfaction	4	0.74	0.88
Instructor's capacity	6	0.76	0.92
Teaching & Learning Materials	3	0.64	0.80
Learning outcomes	5	0.66	0.92
Blended training mode	2	0.76	0.86
All RefTeCp items	20	0.66	0.95

**Table 2.** Intercorrelations between the key implementation factors.

	<b>Instructor</b>	<b>Materials</b>	<b>Outcomes</b>	<b>Blended</b>	
Instructor	0.53**	1.00			
Materials	0.59**	0.59**	1.00		
Outcomes	0.48**	0.62**	0.53**	1.00	
Blended	0.48**	0.59**	0.47**	0.73	1.00
Mean	4.6	4.6	4.6	4.5	4.6
S.D.	0.51	0.45	0.51	0.61	0.58

\*\*  $p < 0.001$  (two-tail).

### 3.2. Multiple Regression Analysis Results

The first hypothesis to be tested (H1) aimed to find out the extent to which the trainees' satisfaction with the subject and content of the training is expected to be significantly predicted by a) instructors' training skills and knowledge of refugee education, 2) the suitability of training materials, 3) the learning outcomes, and 4) trainees' satisfaction with the blended training mode. The refugee training content was concerned with:

- The subject coverage during the training time is available.
- The quality of the training concerning trainees' expectations.
- The usefulness of the training concerning anticipated professional needs.

The results of this analysis showed that trainees' satisfaction with the quality of training was highly explained, first by the quality of the teaching/learning materials used ( $\beta = 0.372$ ,  $p = 0.000$ ), second by the instructors' skills ( $\beta = 0.202$ ,  $p = 0.001$ ), and lastly, by the blended learning mode ( $\beta = 0.156$ ,  $p = 0.018$ ). The value of the adjusted  $R^2$  was found to be 0.415, which shows that 41.5% of the explained variation is attributed to these three statistically significant predictive factors: 1) training materials, 2) instructors' capacities, and 3) blended training (Table 3). The remaining 47.5% score was due to factors that could not be traced in the regression model or other uncontrolled factors: the  $p$ -value or sig. = 0.000, less than 0.005, is highly significant, and the F-test rejects the null hypothesis of zero association. The Durbin-Watson (DW) statistic was used as a test to check autocorrelation in the residuals of the regression analysis. The DW value at 1.93 falls below the 2.0 mean, showing positive autocorrelation, meaning that satisfaction with the training is in line with increases in the other three factors. The step-wise regression analysis showed that trainees' satisfaction with the teaching and learning materials contributed to 34.4% (F Change = 182.14), followed up by the instructors' teaching skills with 5.8% (F Change = 29.76), and lastly the satisfaction with the blended training mode of instruction added with 2% (F Change = 10.67).

**Table 3.** Multiple regression results of training content satisfaction.

						Model	Beta	T	Sig.
1	0.415	0.390	1.93			Constant		4.37	0.000
Model	Sum Sq.	Df	Mean Sq.	F	Sig.	Instructor	0.202	3.28	0.001
Regression	34.154	4	8.538	56.03	0.000	Materials	0.372	6.70	0.000
Residuals	46.629	306	0.152			Outcomes	0.043	0.63	0.531
Total	80.763	310				Blended	0.156	2.37	0.018

Dependent Variable: Training content satisfaction.

Predictors: Instructor's capacity; Teaching & Learning Materials; Outcomes; Blended training.

The second hypothesis to be tested (H2) aimed to determine the extent to which the instructor's teaching capacity was predicted by trainees' satisfaction with the content of training, the effectiveness and suitability of teaching and learning materials developed and used during the training, the learning outcomes achieved, and satisfaction concerning the blended training mode. More specifically, instructors teaching capacities to address refugee children's cognitive, social, psychological, and emotional needs were rated to the extent they:

- Have broad and deep knowledge of the subject.
- Motivate trainees to learn and participate.



- Provide sufficient support and feedback for the learning process.
- Fulfill their obligations (is punctual and consistent concerning lectures, office hours, and grading scale).
- Provide and use sufficient teaching materials.
- Explain clearly and answer questions well, using relevant examples when applicable.

The results presented in Table 4 revealed that the instructors' teaching capacities were highly explained, first by the learning outcomes achieved through the training ( $\beta = 0.269, p = 0.000$ ), second by the quality of the teaching/learning materials used ( $\beta = 0.255, p = 0.000$ ), followed by the blended learning mode ( $\beta = 0.190, p = 0.001$ ) and lastly by training content satisfaction ( $\beta = 0.168, p = 0.001$ ). The results show that the overall multiple linear regression test for explaining the instructor's refugee teaching capacity was statistically significant (adjusted  $R^2 = 0.513$ ,  $F(4, 306) = 82.64, p = 0.000$ ). This implies that 51.3% of the variance to the four critical predictors tested explained the instructor's refugee teaching and learning capacity. This high score connects learning outcomes, teaching and learning materials, training content, and blended learning to the instructor's capacity to tackle refugee children's cognitive, social, and psychological needs. The Durbin-Watson value at 1.92 is below the 2.0 measure, which indicates positive autocorrelation. This means that satisfaction with the training is in line with increases in the other four factors. The stepwise regression analysis revealed that the learning outcomes of training contributed to 39% (F Change = 197.34, at  $p = 0.000$ ), followed by teaching and learning materials contributed to 9% (F Change = 53.08, at  $p = 0.000$ ), training content satisfaction adding 2.4% (F Change = 14.72, at  $p = 0.000$ ), and lastly, the blended learning mode with 1.6% (F Change = 10.19, at  $p = 0.002$ ).

**Table 4.** Multiple regression results of instructor's refugee teaching capacity.

Model	Adjusted R <sup>2</sup>	Std. Error	Durbin-Watson			Model	Beta	T	Sig.
1	0.513	0.317	1.92			Constant		7.15	0.000
Model	Sum Sq.	Df	Mean Sq.	F	Sig.	Outcomes	0.269	4.39	0.000
Regression	33.351	4	8.338	82.64	0.000	Materials	0.255	4.86	0.000
Residuals	30.871	306	0.101			Training	0.168	3.28	0.001
Total	64.222	310				Blended	0.190	3.19	0.001

Dependent Variable: Instructor's capacity.

Predictors: Learning outcomes; Teaching & Learning Materials; Training content; Blended training.

In the third hypothesis (H3), the aim was to examine the extent to which the learning outcomes achieved were expected to be significantly predicted by a) the trainees' satisfaction with the content of training, 2) the suitability of training materials, 3) the instructors' training skills, and 4) trainees' satisfaction with the blended training mode. In other words, the hypothesis tested the extent to which the trainees benefited from the training in terms of the following learning outcomes:

- Knowledge and understanding of the training subject following the training courses.
- Tackling refugee children's needs.
- Ability to collaborate and work in teams.
- Specialized knowledge in refugee teaching.

The results presented in Table 5 revealed that the training outcomes achieved were highly explained, first by the blended training mode ( $\beta = 0.520, p = 0.000$ ), followed by the instructors' refugee teaching capacities ( $\beta = 0.220, p = 0.000$ ). The quality of the teaching/learning materials used ( $\beta = 0.142, p = 0.004$ ), while the trainees' satisfaction with the subject and content of the training was statistically insignificant. The multiple regression results show that the overall multiple linear regression test was statistically significant (adjusted  $R^2 = 0.60$ ,  $F(4, 306) = 118.01, p = 0.000$ ). It was found that the four factors significantly predicted 60% of the learning outcomes, a result that is considered a very high score. The step-wise regression analysis showed that the blended learning mode of training contributed 53.3% (F Change = 352.19), followed by the instructors' teaching skills (5.9% (F Change = 44.22)) and, lastly, satisfaction with the teaching and learning materials (1.5% (F Change = 11.58)).

**Table 5.** Multiple regression for outcomes of learning.

Model	Adjusted R <sup>2</sup>	Std. Error	Durbin-Watson			Model	Beta	T	Sig.
1	0.602	0.389	1.83			Constant		−1.25	0.211
Model	Sum Sq.	Df	Mean Sq.	F	Sig.	Instructor	0.220	4.40	0.000
Regression	71.503	4	17.87	118.01	0.000	Materials	0.142	2.93	0.004
Residuals	48.352	306	0.151			Blended	0.520	11.33	0.000
Total	117.855	310				Training	0.030	0.627	0.531

Dependent Variable: Outcomes of training.

Predictors: Instructor's capacity; Teaching &amp; Learning Materials; Blended training; Training satisfaction.

#### 4. Discussion

This study was a part of the RefTeCp teacher capacity-building project funded by the European Commission to address refugee learners' needs in Egypt through the lens of the SDGs. This endeavor was seen as a continuous process to manage transformations: 1) at the individual teacher level, 2) at the institutional level, and 3) at the societal level. At the individual teacher level, training teachers to address refugee children's cognitive, social, psychological, and other needs is paramount for equitable and quality education. The research results showed that those trained highly rated their satisfaction with the subject and content of the training. Trainee satisfaction is a critical factor that has both practical and theoretical implications. From a practical point of view, the results provide inputs that directly connect with the anticipated effectiveness of the training program. Additionally, by gauging teachers' satisfaction levels, educational institutions as key training providers are more likely to further support and maintain the training program beyond its funding period. Previous research pointed out that teachers' attitudes towards refugee children are positive [40], and educating them is critical regarding their future expectations, life goals, and commitment to their host society [9,41]. Thus, providing continuous access to training opportunities, especially for teachers with refugee backgrounds, is paramount for refugee children's well-being.

The study results also showed that trainees' satisfaction with the quality of training was highly explained, first by the quality of the teaching/learning materials used and second by the instructors' skills to address trainees' needs to cope with refugee children's demands. In addition, the blended training mode also contributed to explaining trainees' satisfaction with the subject and content of the training. These results imply that education policymakers should prioritize developing effective and suitable training materials for the subject and content of training delivered through skillful instructors who can manage blended training requirements. This result seems to be explained by the effectiveness and suitability of the e-training Toolkit developed for the RefTeCp training program. The contribution of the training materials was also connected with the blended training mode of instruction, a finding that further supports our assumption. It also implies that instructors' preparation should include familiarization with the blended training mode, especially concerning designing and developing suitable training materials and resources. The learning outcomes were also significantly explained by the suitability and quality of the teaching and learning materials, satisfaction with the training, the quality of teaching and teaching/learning materials, the blended training mode, and the instructor's refugee teaching and learning capacity. Using learner-driven materials enriched with audio-visual resources is critical in blended training, especially in refugee education [42–44]. As pointed out in previous research, the main challenge in blended learning and training is that most instructors do not know enough about the pedagogical and organizational factors associated with blended learning and training environments [45,46]. Previous research shows that the most effective blended learning programs are context-specific, modular, optimized for online and offline technology, and delivered by well-equipped teachers [47]. Other studies show that the urgent issue of carrying out blended training in teacher professional development is putting forward suitable training materials and delivery methods for the flexibility of blended training and learning [48–50]. The effectiveness of providing more choices for content delivery demands special skills in designing and developing training and learning resources. The digital age has generated changes in teaching, learning, and curriculum development, breaking down barriers to training accessibility and expanding educational opportunities for students and teachers. Such a transformation has a profound societal impact, making education more equitable and accessible to teachers with refugee backgrounds, which highly contributes to SDG4 and SDG10.



The institutionalization of the blended training mode supported by ICT laboratories in each partner university has become a focal point for supporting the professionalization of academic teaching staff and trained teachers, especially refugee teachers. Due to these resources, at the institutional level, all partner education faculties involved in the RefTeCp capacity-building project are now in a position to support the continuous implementation of the training of Egyptian and refugee teachers. This is expected to significantly impact the partner institutions' roles as providers of professional development for teachers who teach refugee children, which in turn is expected to increase their contribution to SDG4 (Inclusive and Quality Education). As refugee issues become increasingly complex, individuals, teachers, and higher education institutions must possess diverse skills to address these challenges effectively. This aligns with previous research stating that diversifying teaching skills helps promote culturally responsive pedagogical knowledge, essential for refugee children's education [51–53].

The quality of the teaching and learning materials developed for the course modules and the support for the RefTeCp implementation also significantly explained the instructors' training skills. Above all, the blended training mode applied, the establishment of the ICT-blended learning tools/labs, and the organization of the blended learning environment contributed to the learning outcomes achieved. Developing blended training and capacity-building programs is crucial for transforming individuals and institutions, leading to a more significant societal impact. These results are also substantiated by previous research [54–56].

Based on the results of this study, it is envisioned that in-service teachers (Egyptian and teachers with refugee backgrounds) have been and will continuously be equipped with new knowledge and skills in the field of refugee teaching, making them able to respond to the educational, psychosocial-emotional, physical, and cognitive needs of refugee children. The continuation and sustainability of the RefTeCp capacity-building program are expected to contribute to both Egyptian and refugee teachers having access to a certified professional development program delivered in each partner university. This, in turn, will help to shift refugee children from attending schools organized by the refugee community, which offer limited accessibility and limited coverage of cognitive needs, to public Egyptian schools. Another implication of this study is that education responses must align with policy pathways for refugee inclusion over the long term, guided by a transformational teaching approach that integrates empowerment and action for building a more sustainable and just society. As UNESCO [57] has pointed out, for host governments, this means adopting policies that enable refugees to access education and proper learning materials. Building on these findings, teacher trainers should devote more time to preparing suitable teaching and learning materials supported by digital and mobile technologies using refugee-friendly and equity-based methods to effectively meet refugee children's cognitive, social, emotional, and psychological needs. In line with previous research [58,59], incorporating sustainability principles into refugee education, which is often missing, is critical for designing suitable teaching and learning materials for diverse learners.

However, it is essential to address professional development barriers at the teacher-school-system levels [60]. Along with the strengths and contributions of this study, it is also necessary to outline the limitations and suggest directions for future research. One limitation is methodological since the results are solely based on quantitative self-reported data, which, despite the high degree of their internal consistency measured through the reliability tests, could be further illuminated and elaborated with follow-up qualitative methods. It is thus recommended, especially in future research, for a follow-up study about the implications of the training in refugee teaching and learning quality using mixed methods.

## 5. Conclusions

This article explores the challenges and opportunities related to education for refugee children through the 2030 Agenda for Sustainable Development (2030 Agenda) lens. It highlights why education matters for refugee children and their host countries to achieve various Sustainable Development Goals, particularly Goals 4 and 10. Educating refugee children is essential to meet SDG4 and, more broadly, to achieve the well-being of all children equally. Exposing all children to equal learning opportunities gives them the fundamental right to education and paves the way for attaining sustainability justice [61].

In particular, this study attempted to respond to the lack of adequate, job-embedded professional development for teachers to address refugee children's education in four Higher Education institutions in Egypt. While the partner universities are situated in geographical areas with high

refugee populations, none of the refugee teachers serving their community schools had access to any professional development program. Credentialing was one of the most critical factors for refugee teachers' access to training. Most of the teachers, whether Egyptian or with refugee backgrounds, who are serving the refugee community schools have insufficient skills to cope with the problems faced by refugee children. Thus, the great majority of refugee children seemed to attend community schools run by the refugees themselves, providing an inadequate education to refugee children.

This study concludes that access to education by both Egyptian teachers and children with refugee backgrounds is a human right. All countries should grant all children, including migrants and refugees, the enforceable right to education ratified by law [62]. We also share the call for the decolonization of education to pave the way for enforcing refugee education [7]. For the first time, in-service and refugee teachers can attend a certified professional development program by four Egyptian Higher Education institutions. In the future, it is expected to see a shift of refugee children from attending schools organized by the refugee community to public Egyptian schools, served by teachers trained in tackling the refugee children's cognitive, social, and psychosocial needs. Similarly, well-equipped teachers with refugee backgrounds will also serve refugee community schools. Such a vision seems pragmatic through the continuation of the RefTeCp program and its expansion to more faculties of education in Egypt. It may be concluded that accommodating refugee children in national education requires strategic planning and integrating human rights education and quality education. Thus, to achieve SDG4 by 2030, relevant public authorities, teachers, NGOs, and other stakeholders must pay adequate attention.

Summing up, based on the findings and the discussion provided, the following key recommendations can be drawn to enhance the refugee children's education in Egypt, while pointing to the RefTeCp capacity-building project and the Sustainable Development Goals:

1. **Professionalizing Egyptian and refugee teachers' competencies:** RefTeCp partner institutions should maintain and further implement ongoing capacity-building focused on equipping teachers, especially those with refugee backgrounds, to meet the diverse cognitive, emotional, and social needs of refugee children. This should include theoretical knowledge, practical experience, and e-learning platforms.
2. **Focusing on developing quality teaching and learning materials:** Pay close attention to creating culturally relevant teaching and learning materials tailored to refugee children's needs. This includes integrating digital resources contextualized with sustainability issues elicited through SDGs, suitable for blended learning environments.
3. **Blended training modalities:** Foster and institutionalize blended training modes that leverage ICT technologies and facilitate accessibility to enhance engagement and learning outcomes.
4. **Strengthening the institutionalization of the resources:** RefTeCp partner institutions should 1) capitalize on the ICT laboratories established by the program, along with other resources developed to support continuous professional development initiatives, and 2) ensure the long-term sustainability of the professional development program, beyond initial funding phases.
5. **Involving academic leadership, public entities, and refugee communities:** Engage with academic leadership at all levels, the refugee community, and policymakers to raise awareness about refugee children's needs and promote inclusive educational policies that facilitate refugee access to quality education.
6. **Evaluation and feedback:** Regularly assess the training programs using mixed-methods research to identify challenges, strengths, and weaknesses and ensure they are relevant to the social fabric of both refugee and host communities.

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## Data Availability

Data is unavailable due to privacy or ethical restrictions.

### Author Contributions

Conceptualization: V.M., & N.K-M.; Data curation: M.A.; Formal analysis: V.M.; Investigation: O.R., & M.A.; Methodology: V.M.; Project administration: V.M.; Validation: O.R.; Writing – original draft: V.M., & N.K-M.; Writing – review & editing: V.M. All authors have read and agreed to the published version of the manuscript.

### Institutional Review Board Statement

According to the GDPR (General Data Protection Regulation), no ethical approval was necessary for this study. Heliopolis University, the local coordinating institution, approved the research instrument through a letter dated 10 January 2022.

### Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

### Conflicts of Interest

The authors have no conflict of interest to declare.

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