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**| RESEARCH ARTICLE**

# Teacher Training Dynamics: Positive and Negative Interdependence in Moroccan Training Centers

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**| ABSTRACT**

This study explores the dynamics of competition and collaboration among trainee teachers at the Centres Régionaux des Métiers de l'Éducation et de la Formation (CRMEF) in Morocco. Given the increasing precarity in teacher training centers and the heightened emphasis on effectiveness and academic excellence, the research examines how these factors shape trainees' learning environment and professional development. Using Social Interdependence Theory, the study assesses how varying levels of competition and collaboration impact trainees' attitudes, behaviors, and overall performance, offering insights into their educational experiences and outcomes. The study employed an exploratory sequential design, beginning with data from two focus group discussions to develop a survey, which was then administered to 157 participants from three regional academies. The findings reveal high levels of competition at the CRMEF, contributing to increased stress and reduced teamwork effectiveness. However, trainees demonstrate strong collaboration in group tasks while displaying competitive behaviors during individual tasks. The study suggests that team-based assessments could mitigate the negative impacts of competition and enhance collaborative efforts.

**| KEYWORDS**

Teacher Training - Professional Development - Social Interdependence Theory, Team-Based Assessment.

**| ARTICLE INFORMATION**

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## 1. Introduction

Understanding the dynamics of competition and collaboration among trainee teachers is crucial for fostering an effective learning environment, especially in the Moroccan context. In Morocco, university graduates aspiring to a teaching career must complete a one-year training program at the Centres Régionaux des Métiers de l'Éducation et de la Formation (CRMEF). Throughout this program, trainee teachers engage in both theoretical and practical training, where they are expected to collaborate with their peers while simultaneously competing for top grades. Those who excel are often rewarded with the opportunity to be assigned to more desirable geographical areas after graduation. In this environment, shifts in higher education, particularly within teacher training programs, have resulted in increased precarity and a heightened emphasis on effectiveness and productivity, thereby intensifying the dynamics of competition and collaboration. These shifts can create a competitive and sometimes hostile culture (McAllister & Brown, 2024). Within this context, the balance between competition and collaboration plays a significant role in the professional development of trainees, influencing their attitudes, behaviors, and ultimately their future teaching practices.

Collaborative approaches not only improve teachers' self-perception and job satisfaction but also offer valuable opportunities for peer learning (Johnson, 2003). Hargreaves (2021) further highlights that both formal and informal collaboration can bring substantial benefits to students, teachers, and educational reform overall. However, other research suggests that while collaboration promotes the sharing of knowledge and resources, thereby fostering a more supportive learning environment,

competition can yield both positive and negative outcomes depending on how it is managed (Dillenbourg, 1999; Johnson & Johnson, 1989).

In the context of the current study, Social Interdependence Theory provides a valuable framework for analyzing the dynamics of competition and collaboration among CRMEF trainees. The theory posits that the nature of interdependence—whether positive or negative—can significantly impact teamwork, stress levels, and overall performance (Deutsch, 1949; Johnson & Johnson, 2005). This paper explores the balance between competition and collaboration at the CRMEF, investigating how these dynamics manifest and their implications for training outcomes and future professional practices.

### *1.1 The present Study*

The research problem for this study focuses on the complex interplay between competition and collaboration among trainee teachers at the CRMEF in Morocco. In this context, trainee teachers are required to engage in both collaborative and competitive activities as part of their training. They must work together on group projects while simultaneously striving for individual excellence to secure desirable teaching placements upon graduation. This dual focus creates a complex dynamic where the positive aspects of collaboration—such as shared learning and mutual support—can be undermined by competitive pressures that foster stress and rivalry. The challenge lies in understanding how these dynamics interact and affect trainees' professional development, attitudes, and overall effectiveness in their future roles. By investigating these interactions, the research aims to identify strategies to enhance collaboration, manage competition effectively, and ultimately improve the training outcomes and professional practices of future educators. To maintain a focused approach, the current study has formulated the following three questions to guide the investigation:

- What are the impacts of a competitive environment on the learning experiences of teacher trainees?
- To what extent does competition among trainees influence their willingness to collaborate?
- What alternative strategies or policies could be implemented to promote collaboration among teacher trainees in a competitive setting?

The primary objectives of this research are to measure the degree of competitiveness among teacher trainees at the CRMEF and to examine how this competitive environment influences their overall learning experiences. The study also aims to investigate the extent to which competition hinders collaboration, an essential component of autonomous professional development. Furthermore, the research seeks to identify and recommend alternative strategies and policies that can alleviate the negative effects of competition, enabling training centers to become more collaborative and supportive learning environments for teacher trainees.

## 2. Insights from Social Interdependence Theory

As detailing the extensive empirical literature on competition and collaboration is beyond the scope of this study, this section will focus primarily on discussing the theoretical framework. Social Interdependence Theory, developed by Morton Deutsch and further refined by David and Roger Johnson, provides a robust framework for analyzing how individuals within a group interact based on their perceived goal structures (Coleman, 2011). This theory is especially pertinent for understanding the dynamics of collaboration and competition among teachers, an area of increasing interest in educational research.

At the core of Social Interdependence Theory is the concept of interdependence, which refers to the way people's goals are connected. This connection can be positive or negative, significantly influencing how individuals interact with one another (Diac, & Grădinariu, 2023). Positive interdependence occurs when individuals perceive that their goals are linked in a way that achieving one person's goal helps others achieve theirs (Johnson, & Johnson, 2005). In an educational setting, this might manifest as teachers collaborating to share resources, strategies, and support, with the understanding that their collective success will benefit their students and themselves. When positive interdependence is present, it often leads to cooperative behaviors, enhanced relationships, and more productive outcomes for all involved.

Conversely, negative interdependence arises when individuals perceive their goals as being in conflict, meaning that achieving one person's goal hinders others from achieving theirs. In a school context, this might occur if teachers feel that recognition, promotions, or resources are limited and must be competed for. Such perceptions can lead to competitive behaviors, where teachers may withhold information or resist collaboration, potentially leading to increased stress, conflict, and reduced overall effectiveness (Darnon et al., 2023).

Applying Social Interdependence Theory to the study of teacher dynamics allows for a deeper understanding of the factors that drive collaboration or competition in educational settings. When teachers operate in an environment characterized by positive interdependence, they are more likely to share ideas, support one another, and collectively work towards the common goal of

student success. However, in environments where negative interdependence is perceived, competition may dominate, leading to a less collaborative and potentially more hostile atmosphere.

This theoretical perspective not only helps explain the behaviors of teachers within their professional communities but also offers practical insights into how educational leaders can foster a more collaborative environment. By promoting positive interdependence through shared goals and rewards, the CRMEF can create a culture where collaboration is the norm, ultimately leading to better outcomes for both trainers and trainees.

## 3. Methodology

### *3.1 Approach and Design*

This study is grounded in the mixed-methods tradition, specifically employing an exploratory sequential design (Creswell & Plano Clark, 2011). In this approach, qualitative data is initially collected and analyzed, with the insights derived from this phase informing the development of a quantitative instrument. This instrument is subsequently administered to a larger sample, enabling the assessment of the generalizability and transferability of the findings. The study seeks to examine the dynamics of competition and collaboration through this integrative methodological framework.

This approach has many merits. First, it ensures that the instruments used in the second phase are directly relevant to the specific context and experiences uncovered in the first phase (Cohen et al., 2000). This increases the relevance and validity of the quantitative data. Second, the design allows for flexibility, as the qualitative phase can reveal unexpected insights that shape the direction of the subsequent quantitative research (Creswell, 2012). This adaptability is particularly useful in exploring a topic that has received little academic attention in the Moroccan context. Besides, the integration of qualitative and quantitative data provides a more comprehensive understanding of the research problem (Jonker & Pennink, 2010). This design is particularly powerful for studying complex social phenomena where multiple perspectives and layers of meaning are essential, with the study of the dynamics of competition and collaboration serving as a good example.

### *3.2 Research Instruments*

#### *3.2.1 Focus Groups*

The qualitative phase of the study, which took place at the Rabat-Salé-Kenitra Regional Academy, involved conducting two focus group discussions with 11 teachers. The first group consisted of six trainees, while the second group included five teachers in their first year of service. This approach provided valuable insights from two distinct cohorts. Using focus groups as a qualitative tool offers numerous advantages, making it particularly suitable for the purposes of the current study. First, focus groups facilitate a comprehensive exploration of participants' attitudes, beliefs, and experiences. The group dynamic tends to elicit more detailed and nuanced responses than individual interviews (Jarrell, 2000). Additionally, the interaction among participants can uncover a range of perspectives and stimulate discussion, leading to richer data that might not emerge in one-on-one settings. Furthermore, focus groups are often associated with lower levels of anxiety compared to face-to-face interviews, which can enhance participant openness and engagement. Parker and Tritter (2006) summarize the advantages of using focus groups in exploratory studies, noting that:

> In focus groups … the objective is not primarily to elicit the group's answers … but rather to stimulate discussion and thereby understand (through subsequent analysis) the meanings and norms that underlie those group answers. In group interviews the interviewer seeks answers, in focus groups the facilitator seeks group interaction (p. 26).

#### *3.2.2 The Survey*

The survey comprised items designed to measure six key axes, along with a demographic section. The axes assessed were: competition level, collaboration, the impact of competition on collaboration, the positive and negative impacts of competition, and informants' suggestions. The demographic section gathered information on participants' background characteristics to provide context for the survey findings. The following chart provides detailed information about each item:

| Ax/ variable | Item | Item source (focus group) |
|---|---|---|
| Competition levels | 1. I rate the level of competition among trainees in class as;<br>2. I find myself comparing my performance to that of my peers.<br>3. I feel pressured to outperform my peers in my class.<br>4. I compare my grades to others' no matter how good my grades are<br>5. I feel that there is an unspoken competition among trainees in my program<br>6. I am curious about the grades that others receive<br>7. Trainers encourage competition among trainees | FG1<br>FG1<br>FG2<br>FG1<br>FG1<br><br>FG2<br>FG1 |
| Collaboration | 8. My classmates exchange documents and learning materials<br>9. We use social media groups to share learning materials.<br>10. My classmates encourage others when they receive a low grade<br>11. Some trainees prefer not to share certain documents deliberately (the item was reverse-coded)<br>12. My classmates are supportive and offer help to one another<br>13. We demonstrate better collaboration during group assignments.<br>14. I feel supported by my peers during team activities.<br>15. I feel supported by my peers even when working on individual assignments. | FG2<br>FG1<br>FG2<br>FG2<br><br>FG1<br>FG1<br>FG2<br>FG1 |
| The impact of competition on collaboration | 16. Competition among trainees makes them reluctant to share information and resources with others.<br>17. Competition undermines trust among trainees, affecting our collaborative efforts<br>18. Competition among trainees weakens the teamwork in our study groups | FG1<br><br>FG2<br><br>FG2 |
| Negative impacts of competition | 19. The level of competition in my program increases my stress and anxiety about my performance<br>20. The competitive environment discourages collaboration and teamwork among trainees<br>21. Competition among trainees negatively impacts personal relationships. | FG2<br><br>FG1<br><br>FG2 |
| Positive impacts of competition | 22. The competitive environment in my program motivates me to perform better academically<br>23. The competitive environment helps trainees get better grades. | FG1<br><br>FG1 |
| Suggestions | 24. Using team-based assessments can reduce the impact of competition among trainees.<br>25. Assessments should include an evaluation of our ability to collaborate with other trainees<br>26. The curriculum should include a module on teamwork and other important soft skills | FG2<br><br>FG2<br><br>FG1 |

The survey was piloted with 15 participants. Piloting a survey provides several key benefits, including the opportunity to identify and address potential issues in the survey design before full-scale implementation. It enables researchers to evaluate the clarity and relevance of the questions, ensuring they are understood as intended by respondents. In this pilot phase, the primary feedback received concerned the clarity of certain items, allowing for targeted revisions to enhance the overall effectiveness of the survey.

After administering the survey, a reliability test was conducted (see Table 1). The results of the test were generally satisfactory, indicating that the survey items were consistent and reliable in measuring the intended constructs. The test yielded alpha scores ranging from 0.625 to 0.904 for the five constructs. This reliability ensures that the survey is a robust tool for obtaining accurate and dependable data in future research.

**Table 1. Cronbach's Alpha reliability test.**

| Construct | Number of items | Cronbach's Alpha |
|---|---|---|

| | | |
|---|---|---|
| Competition level | 7 | ,750 |
| Collaboration | 8 | ,904 |
| Impact of competition on collaboration | 3 | ,771 |
| Negative impacts | 3 | ,868 |
| Positive impacts | 2 | ,625 |

### *3.3 Participants in the Quantitative Phase*

The study included a total of 157 participants, comprising 35 males and 122 females. Of these, 119 were trainee teachers, and 38 were practicing teachers in their first year of service. The participants belonged to three regional academies: Rabat-Salé-Kenitra, Fès-Meknès, and Casablanca-Settat. This diverse sample offered valuable insights from two distinct cohorts, providing a comprehensive perspective on the research topic and enriching the study with the experiences and viewpoints of both emerging and early-career educators. The population included teachers across nine subjects, as detailed in Table 2 below:

**Table 2. Distribution of research population by subject**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Primary school | 24 | 15,3 | 15,3 | 15,3 |
| | English | 64 | 40,8 | 40,8 | 56,1 |
| | Math | 18 | 11,5 | 11,5 | 67,5 |
| | Sport | 6 | 3,8 | 3,8 | 71,3 |
| | French | 12 | 7,6 | 7,6 | 79,0 |
| | Arabic | 14 | 8,9 | 8,9 | 87,9 |
| | Physics | 7 | 4,5 | 4,5 | 92,4 |
| | History and geography | 7 | 4,5 | 4,5 | 96,8 |
| | Science | 5 | 3,2 | 3,2 | 100,0 |
| | Total | 157 | 100,0 | 100,0 | |

## 4. Results

### *4.1 Data Characteristics*

Before proceeding with the quantitative analysis, the data distribution was assessed for normality using both the Kolmogorov-Smirnov and Shapiro-Wilk tests. The results of the Kolmogorov-Smirnov test yielded p-values ranging from 0.000 to 0.009, while the Shapiro-Wilk test produced p-values ranging from 0.006 to 0.006 (Table 3). In both tests, all p-values are well below the standard significance level of 0.05, indicating a significant deviation from normality across all variables.

Given these results, the data exhibits characteristics that are not conducive to parametric testing, which assumes normality. Therefore, it was appropriate to consider non-parametric methods for further analysis to ensure the validity and reliability of the statistical inferences. The statistical methods employed in this study included the Mann-Whitney U test to examine significant differences between groups (e.g., male vs. female, teachers of different subjects, and professional status). Additionally, Spearman's rank correlation coefficient (Spearman's rho) was used to assess the relationships between variables.

**TABLE 3. Tests of normality**

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Competition level | ,084 | 157 | ,009 | ,975 | 157 | ,001 |
| Collaboration | ,203 | 157 | ,000 | ,913 | 157 | ,006 |
| Impact of competition level on collaboration | ,190 | 157 | ,000 | ,926 | 157 | ,000 |
| Positive impacts of competition | ,184 | 157 | ,000 | ,934 | 157 | ,000 |
| Negative impacts of competition | ,125 | 157 | ,000 | ,965 | 157 | ,000 |
| a. Lilliefors Significance Correction | | | | | | |

### *4.2 Level of Competition*

In the focus group discussions, participants largely agreed that the level of competition at CRMEF is notably high. It was commonly acknowledged that competition among trainees is a fundamental component of the courses; the primary focus is on outperforming

peers rather than simply attaining high grades. In other words, the value of a high grade is contingent upon its relative standing, with the grade being considered significant only if it ensures that no other trainee exceeds it. In this regard, Hanane notes that "we feel that there is an unspoken competition; trainees seem more concerned with knowing others' grades than focusing on their own."

Most trainees concurred that the heightened level of competition is largely driven by the allocation of service placements based on academic performance. Specifically, those who attain higher grades are given priority for assignments in more attractive and sought-after locations, such as major cities or developed areas. In contrast, trainees with lower grades are assigned to less desirable, more remote locations. This linkage between academic performance and future placement creates significant motivation among trainees to excel, intensifying the competitive environment within the program. Nada elaborates on this in the following testimony:

> Everyone will agree with me that the intense competition in our class is very high. We all know that the trainees who achieve the highest grades will be assigned to work in more desirable locations, such as major cities, while those with lower scores will be placed in more remote, rural areas. This knowledge drives us to strive for top grades, as the prospect of working in a prestigious location adds significant motivation to our efforts.

Another negative aspect of the competition, as described by some participants in the focus group, is the emergence of an atmosphere of hypocrisy. The intense competition among trainees fosters such an atmosphere in the workplace, where outward expressions of support and goodwill mask underlying feelings of rivalry and self-interest. In such an environment, trainees may publicly wish success for their peers and offer superficial encouragement, but privately, they might harbor resentment or hope for the failure of others in order to advance their own standing. This pretense can create a disingenuous and strained atmosphere, where authentic collaboration and mutual support are undermined by the pervasive drive to outperform one another.

Samira contrasts the current competitive atmosphere at the CRMEF with the supportive environment she experienced at university, noting how the genuine sense of solidarity and encouragement has been replaced by a more competitive and insincere atmosphere. She says, "I often long for the days at university when we genuinely wished success for one another. Now, it feels as though everyone is secretly hoping their peers do not perform as well because higher grades for others reduce their own chances of securing a desirable placement"

The quantitative data largely corroborate the qualitative testimonies. The survey comprised seven items designed to measure the level of competition. These items assessed various aspects, including the desire to outperform others, the stress associated with performing better, the tendency to compare one's performance with that of peers, and attitudes toward competition among trainers. This variable was measured using a Likert frequency scale, with responses ranging from 1 ("never") to 5 ("always"). The analysis produced a mean score of 3.81, indicating a strong endorsement of the variable (Table 4). This high mean indicates that respondents frequently agreed that the level of competition at the CRMEF is very high, aligning with the insights revealed during the qualitative phase.

**Table 4. The level of competition among trainees**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Competition level | 157 | 2,86 | 3,81 | 3,7862 | ,32857 |
| Valid N (listwise) | 157 | | | | |

To enhance clarity and avoid ambiguity, the survey included a direct question designed to assess trainees' perceptions of competition in the classroom. Respondents were asked to rate the level of competition as either "Not competitive at all," "Slightly competitive," "Moderately competitive," "Very competitive," or "Extremely competitive." This straightforward approach aimed to provide a precise measure of how trainees perceive the competitive environment within their classes. The responses yielded a mean score of 3.80, indicating a clear tendency among participants to perceive the classroom environment as highly competitive (Table 5).

**Table 5. Participant's perception of the level of competition**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| I rate the level of competition among trainees in class as: | 157 | 1 | 5 | 3,80 | ,904 |
| Valid N (listwise) | 157 | | | | |

The research population in the quantitative phase comprised both teacher trainees and first-year practicing teachers. This approach, as previously explained in this paper, was intended to incorporate insights from two distinct cohorts. Statistical analysis reveals no significant differences in the mean scores between these two groups (Table 6). This finding indicates that both cohorts perceive the level of competition in the training program similarly.

**Table 6. Comparison of mean perception of competition between trainees and practicing teachers**

| Competition level | | | |
|---|---|---|---|
| Professional status | Mean | N | Std. Deviation |
| Teacher trainee | 3,7719 | 119 | ,34259 |
| Practicing teacher | 3,8308 | 38 | ,27958 |
| Total | 3,7862 | 157 | ,32857 |

To deepen the analysis, a Mann-Whitney U test was conducted to determine whether the differences in the means between the two groups were statistically significant. The results of the test indicated that the null hypothesis could not be rejected, suggesting that there is no significant difference in how the two groups perceive the level of competition within the training program (Figure 1). This finding implies that both teacher trainees and first-year teachers experience and perceive the competitive environment in a similar manner, with any variations in their responses likely attributable to random variation rather than a substantive difference between the groups.

**Hypothesis Test Summary**

| | Null Hypothesis | Test | Sig. | Decision |
|---|---|---|---|---|
| 1 | The distribution of competitionlevel is the same across categories of Professional status. | Independent-Samples Mann-Whitney U Test | ,425 | Retain the null hypothesis. |

Asymptotic significances are displayed. The significance level is ,05.

Figure 1. Perception of competition by professional status: trainees vs. practicing teachers

However, a subtle difference was observed in the perception of competition between male and female participants. Female participants rated the learning atmosphere at the CRMEF as more competitive compared to their male counterparts. This discrepancy is reflected in the mean scores, with males averaging 3.49 and females averaging 3.89 (Table 7). Responses were collected using a Likert scale, where 1 = Not Competitive at All, 2 = Slightly Competitive, 3 = Moderately Competitive, 4 = Very Competitive, and 5 = Extremely Competitive.

Table 7. Gender differences in perceptions of competition

| **Report** | | | |
|---|---|---|---|
| I rate the level of competition among trainees in class as | | | |
| Gender | Mean | N | Std. Deviation |
| Male | 3,49 | 35 | 1,067 |
| Female | 3,89 | 122 | ,835 |
| Total | 3,80 | 157 | ,904 |

To enhance the analysis, a Mann-Whitney U test was performed to evaluate whether the differences observed between groups were statistically significant (Figure 2). This non-parametric test was chosen due to its suitability for comparing medians between two independent groups when the data does not meet the assumptions of normality. The outcome of the test resulted in the rejection of the null hypothesis, suggesting that the differences in the perceptions of competition between the groups were

significant and not due to random variability. This implies that the observed variations are likely to reflect true differences in perceptions rather than chance fluctuations in the data.

**Hypothesis Test Summary**

| | Null Hypothesis | Test | Sig. | Decision |
|---|---|---|---|---|
| 1 | The distribution of I rate the level of competition among trainees in class as is the same across categories of gender. | Independent-Samples Mann-Whitney U Test | ,034 | Reject the null hypothesis. |

Asymptotic significances are displayed. The significance level is ,05.

Figure 2. Gender differences in perceptions of competition.

### *4.3 Impacts of Competitive Environment on The Learning Experience as a Whole*

#### *4.3.1 Negative Impacts*

The high level of competition at the CRMEF, as detailed in the previous section, profoundly impacts the overall learning experience for trainees. This competitive atmosphere permeates various aspects of the program, shaping how trainees interact with one another and approach their studies. Numerous testimonies from the focus group discussions emphasize that the pressure to outperform peers often overshadows collaborative learning and mutual support. Instead of fostering a community of shared growth and development, the competitive environment can lead to increased stress and anxiety among trainees, as they become more focused on ranking and placement rather than on mastering the content and skills necessary for their future careers. This intense competition also creates a divisive atmosphere, where trainees may view each other more as rivals than as colleagues, potentially hindering the development of professional networks and relationships that are crucial in the teaching profession. A good example from the data that underscores this point is the following testimony:

> Instead of being excited about mastering new skills or simply enjoying the process, I find myself constantly worried about how I'm measuring up against my peers. It's frustrating because I used to love learning, from high school through my BA studies, and even during my master's program. But now, the joy of learning has been overshadowed by the pressure to outperform others and by the high-stress level (Manal)

The competitive environment, as experienced by the trainees, has a direct impact on several factors that contribute to a negative study atmosphere. It strains professional relationships, fosters a high level of stress, and increases anxiety among participants. Sami sums up all these when he says: "The program causes so much stress that I've almost forgotten how happy I was to get the job in the first place. Even though some of my colleagues are friendly and helpful, most of them don't show that kind of spirit.

The quantitative findings align with these testimonies. The survey included three items that addressed the negative impacts of competition, specifically focusing on stress, personal relationships, and teamwork. The mean score for these items was 3.73, based on the previously referenced frequency scale (Table 8). This result supports the notion that competition adversely affects these aspects of the trainees' experience.

**Table 8. The mean score for the negative impact of competition**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Negative impacts of competition | 157 | 1,50 | 5,00 | 3,7357 | ,73720 |
| Valid N (listwise) | 157 | | | | |

A critical finding from the qualitative data was the high level of stress reported by participants. This insight is further supported by the quantitative analysis, where the mean score for stress was 3.91 (Table 9). This relatively high mean indicates that participants consistently reported significant levels of stress associated with their experiences. Such a score suggests that stress is a prevalent issue among the participants, underscoring its importance as a major factor impacting their overall experience.

**Table 9. Stress level as experienced by participants**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| The level of competition in my program increases my stress and anxiety about my performance | 157 | 1 | 5 | 3,91 | ,910 |
| Valid N (listwise) | 157 | | | | |

Another key finding from the qualitative data was the effect of competition on personal relationships. This observation is reinforced by the quantitative results, where the mean score for this variable was 3.86 (Table 10). This elevated mean suggests that participants often experience competition as detrimental to their professional interactions. The data reflects a widespread perception that competition is negatively impacting relationships among colleagues, pointing to a need for interventions to enhance cooperative and supportive professional environments.

**Table 10. The impact of competition on personal relationships.**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Competition among trainees negatively impacts personal relationships. | 157 | 1 | 5 | 3,86 | ,997 |
| Valid N (listwise) | 157 | | | | |

### *4.3.2 Positive Impacts*

Despite the numerous perceived negative impacts of the competitive environment at the CRMEF, informants during the qualitative phase identified two significant advantages of this atmosphere within the teacher training program. Firstly, the competition acts as a motivating factor, compelling trainees to put in extra effort and strive for higher academic performance. This drive to excel often results in improved grades and a stronger commitment to their studies. Secondly, the competitive nature of the environment can create a stimulating atmosphere that encourages trainees to push their boundaries and maintain high levels of engagement. Although the competitive atmosphere presents challenges, it can also foster a sense of urgency and drive that can enhance overall motivation and performance. According to Loubna, we often need such a competitive environment. She says, "Sometimes it [competition] is a good thing; without competition, a lot of trainees wouldn't take their studies seriously. Sure, the competitive atmosphere can be stressful, but it's also what pushes us to do our best"

Competition plays a vital role in motivating trainees to excel academically. It drives them to push their limits and achieve higher grades. For instance, during the focus group discussion, Selma recounted her experience of graduating second in her cohort the previous year. She attributed her impressive performance to her strong desire to finish at the top. Selma's story illustrates how the competitive environment not only spurred her to work harder but also helped her maintain focus and determination throughout her studies. She says:

> Competition was a huge motivator for me. Last year, I graduated second in my cohort, and I really wanted to be first. This is what I promised my family. The pressure to outperform my peers pushed me to work harder than I ever had before. This was missing in my university experience.

These two aspects of the competitive environment at the CRMEF were included in the survey to assess their generalizability (Table 11). Informants reported that the competitive atmosphere significantly motivates them to perform better academically, reflected by a high mean score of 3.94. Additionally, they acknowledged that this competitive environment contributes to achieving better grades, as evidenced by a mean score of 3.47.

**Table 11. Impact of competitive environment on academic performance and motivation**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| The competitive environment in my program motivates me to perform better academically | 157 | 1 | 5 | 3,94 | 1,082 |
| The competitive environment helps trainees get better grades. | 157 | 1 | 5 | 3,47 | 1,047 |
| Valid N (listwise) | 157 | | | | |

### *4.4 Competitive Environment and Collaboration*

A significant portion of the focus group discussion was dedicated to analyzing the relationship between the competitive environment at the CRMEF and the level of collaboration among trainees. While many participants mentioned that they collaborate regularly during their training, they also acknowledged that competition is still a dominant aspect of their experience. In this regard, Raja confirms that "collaboration is not a choice, it's a necessity. We're often required to work in groups, and to make the assigned tasks successful, we have to support one another."

Karim agreed with Raja and further emphasized, "We really give our best, especially when we have a group presentation or a lesson to prepare and deliver together. We often spend sleepless nights discussing things on our WhatsApp group. If we could adopt this same collaborative spirit in individual assignments, it would make a big difference.

Karim's testimony was further explored during the quantitative phase. The survey included a direct question about the level of collaborative spirit during individual assignments, and the results indicated that participants received little support in these contexts. The mean score of 2.02 clearly reflects this tendency (Table 12), with this variable being calculated using the same Likert frequency scale described earlier.

**Table12. Support received during individual assignments**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| I feel supported by my peers even when working on individual assignments. | 157 | 1 | 4 | 2,02 | ,812 |
| Valid N (listwise) | 157 | | | | |

In line with this statistical insight, there was a consensus among the interviewees that the underlying sense of competition hinders the full potential of collaboration. Many testimonies highlighted that numerous trainees are hesitant to share learning materials due to the same competitive drives. Manal expressed frustration, noting, "They [the trainees] might have a document you need, but because they know that sharing it could help you score better, they pretend they don't have it. They prefer to keep it for themselves."

Inferential statistics revealed a significant correlation between the sense of competition and the reluctance to share documents and other learning materials. The Spearman's rho test, which measures the strength and direction of association between two ranked variables, produced a correlation coefficient of 0.697 (Table 13). This value indicates a moderate to strong positive relationship, suggesting that as the sense of competition among trainees increases, their tendency to withhold valuable academic resources also rises. This finding highlights that the competitive environment at the CRMEF may discourage trainees from collaborating and sharing information, as individuals are more likely to keep resources to themselves to maintain an edge over their peers. Thus, the data underscores the impact of a competitive atmosphere on the dynamics of information sharing within the learning environment.

**Table 13. Correlation between unspoken competition and sharing learning materials**

| | | | I feel that there is an unspoken competition among trainees in my program | Some trainees prefer not to share certain documents deliberately (reversed coding) |
|---|---|---|---|---|
| Spearman's rho | I feel that there is an unspoken competition among trainees in my program | Correlation Coefficient | 1,000 | -,031 |
| | | Sig. (2-tailed) | . | ,697 |
| | | N | 157 | 157 |
| | Some trainees prefer not to share certain documents deliberately (reversed coding) | Correlation Coefficient | -,031 | 1,000 |
| | | Sig. (2-tailed) | ,697 | . |
| | | N | 157 | 157 |

**. Correlation is significant at the 0.01 level (2-tailed).

In general, the statistical analysis demonstrated a significant correlation between the level of competition and the degree of collaboration among trainees. The survey included seven items to measure the level of competition and eight items to assess collaboration. The resulting correlation coefficient of -0.254** indicates a statistically significant negative relationship between

these two variables (Table 14). This finding suggests that higher levels of competition are associated with lower levels of collaboration. In other words, as the sense of competition intensifies, the tendency for trainees to engage in collaborative activities diminishes. This underscores the impact of a competitive environment on the ability and willingness of individuals to work together and share resources.

**Table 14. Correlation between competition level and collaboration**

| | | | Competition level | collaboration |
|---|---|---|---|---|
| Spearman's rho | Competition level | Correlation Coefficient | 1,000 | -,254** |
| | | Sig. (2-tailed) | . | ,001 |
| | | N | 157 | 157 |
| | Collaboration | Correlation Coefficient | -,254** | 1,000 |
| | | Sig. (2-tailed) | ,001 | . |
| | | N | 157 | 157 |

**. Correlation is significant at the 0.01 level (2-tailed).

### *4.5 Alternative Strategies*

A primary objective of the current study was to explore and gather suggestions from teacher trainees on strategies to alleviate the negative effects of competition on collaboration within the CRMEF training program. The focus group discussions revealed that many trainees believe that team-based assessments could be an effective approach to address this issue. Participants argued that by incorporating team-based assessments, the emphasis would shift from individual performance to collective achievement, thereby fostering a more cooperative environment. This approach could encourage trainees to work together more closely, share resources, and support one another, ultimately reducing the competitive tension and enhancing collaborative efforts. Such a strategy aims to balance individual and group contributions, promoting a more integrated and supportive learning experience.

In this regard, Samira believes that "team-based assessments would greatly improve our learning environment. It would shift the focus from competing against each other to achieving a common goal. Samira highlights that, "although some modules within the CRMEF program already use group evaluations rather than focusing solely on individual performance, this approach is not commonly implemented across all courses". She points out that where group assessments are used, they foster a collaborative learning environment by encouraging trainees to work together towards shared goals. For her, expanding the use of team-based assessments across more modules could help mitigate the competitive pressures and promote a more supportive and integrated learning experience for all trainees.

Karim took the discussion a step further by suggesting that trainers should evaluate trainees based on their collaborative attitudes. He proposed that incorporating assessments of teamwork and cooperation into the evaluation process could encourage a more supportive and collaborative learning environment. By recognizing and rewarding effective collaboration, trainers could help shift the focus from individual competition to collective achievement, ultimately fostering a more positive and integrated educational experience. He says, "Just as we are evaluated on our participation and attendance, we should also be assessed on our collaboration and willingness to share. If I were a trainer, I would penalize those who don't contribute to the team or who are unwilling to collaborate."

Others suggested that the core issue stems from "a lack of essential soft skills, particularly those related to effective collaboration" (Manal). They proposed that a separate module dedicated specifically to developing these skills could address this gap. This module would "focus on teaching and reinforcing collaborative attitudes, such as communication, teamwork, and mutual support" (Nada). This approach, according to others, aims to integrate soft skills development into the training program, ensuring that trainees are better equipped to navigate the collaborative aspects of their future professional environments.

Statistical data corroborates the suggestions made by participants in the focus group discussion, as illustrated in Table 15. The data, collected using a five-point Likert scale, resulted in mean scores of 3.85, 3.83, and 3.66 for the target variables. These scores reveal a pronounced tendency towards agreement, underscoring the participants' support for adopting team-based assessments and implementing a dedicated module focused on developing soft skills and collaborative attitudes.

**Table 15. Participants' suggestions**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Using team-based assessments can reduce the impact of competition among trainees. | 157 | 2 | 5 | 3,85 | ,986 |
| Assessments should include an evaluation of our ability to collaborate with other trainees | 157 | 1 | 5 | 3,83 | ,912 |
| The curriculum should include a module on teamwork and other important soft skills | 157 | 1 | 5 | 3,66 | ,805 |
| Valid N (listwise) | 157 | | | | |

Several interviewees highlighted a significant rationale for adopting team-based assessments, emphasizing that many trainees exhibit stronger collaboration and greater peer support during group assignments. This observation points to the inherent benefits of team activities in fostering a supportive and collaborative learning environment. Samira notes, "We should take advantage of the high level of collaboration during team activities. I believe that grading us on this would encourage such practices and make them more sustainable." Nada agrees, "This approach would ensure that the practice of working together effectively becomes a sustainable and integral part of the learning process" and this would ultimately contribute to a more cohesive and supportive educational experience"

During the quantitative phase, the data reinforced the arguments presented by the informants. As shown in Table 16, the mean score for demonstrating better collaboration during group assignments was 3.59, while the mean for feeling supported by peers during team activities was also 3.69. These results underscore the participants' acknowledgment of the positive impact of team-based activities on collaboration and peer support. The consistent mean scores highlight a general agreement among participants that group assignments enhance collaborative efforts and provide valuable support, further validating the suggestions for adopting team-based assessments in the training program.

**Table16. Arguments for adopting team-based assessment**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| We demonstrate better collaboration during group assignments. | 157 | 1 | 5 | 3,59 | 1,149 |
| I feel supported by my peers during team activities. | 157 | 1 | 5 | 3,69 | ,854 |
| Valid N (listwise) | 157 | | | | |

## 5. Discussion

The findings of this study highlight several key dynamics at play within the CRMEF, particularly around the issues of competition and collaboration among trainee teachers. These results can be effectively analyzed through the lens of Social Interdependence Theory, which provides a framework for understanding how the structure of goals within a group influences behavior.

The study identified a high level of competition among trainees, with females perceiving it more intensely than males. According to Social Interdependence Theory, this heightened perception of competition indicates a negative interdependence structure, where individuals view each other as rivals rather than collaborators. Such environments can lead to increased stress, hinder teamwork, and ultimately reduce overall collaborative effectiveness (Hoffmann et al., 2018). Additionally, the literature suggests that women often experience competitive settings as more stressful, possibly due to different socialization experiences and a greater sensitivity to relational dynamics (Buser, 2016; Niederle & Vesterlund, 2007). However, this finding is not consistent with the predictions of Social Interdependence Theory, which assumes that gender does not influence perceptions of competition. The theory posits that all individuals, regardless of gender, experience in similar ways when the interdependence structure is the same (Petersen et al., 1991).

The negative impacts of competition observed among trainees, such as increased stress and poor personal relations, further reinforce the implications of negative interdependence. Social Interdependence Theory posits that when individuals are pitted against each other, the resulting stress can undermine personal relationships and lead to a less cohesive group dynamic (Johnson & Johnson,2017). This finding is also consistent with studies that show competition in academic settings often leads to heightened anxiety and deteriorated peer relationships (Johnson & Johnson, 1989; Rudolf & Lee, 2023).

In addition, the study found that while trainees demonstrate collaboration during group assignments, this behavior does not extend to individual tasks. In group assignments, positive interdependence is likely more apparent, as trainees understand that their success is tied to the success of the group. However, during individual tasks, the perceived interdependence shifts to a more competitive, negative form, where trainees might feel that their performance is solely their responsibility, reducing the incentive to collaborate. This finding aligns with research by Slavin (1996), which suggests that the nature of the task and the way it is structured significantly influence whether students choose to collaborate or compete.

To mitigate the negative impacts of competition and transition from negative to positive interdependence, I recommend adopting team-based assessments, a strategy supported by the majority of informants. This approach aligns well with Vygotsky's Social Learning Theory, which underscores the importance of social interaction in cognitive development (Lantolf & Poehner,2023). Vygotsky posits that learning is most effective when it occurs through social collaboration and guided interactions with more knowledgeable individuals. By adopting team-based assessments, trainees will work collaboratively, share insights, and support each other's learning, embodying Vygotsky's concept of the Zone of Proximal Development (ZPD)

In team-based assessments, the collaborative effort of working in groups allows individuals to scaffold each other's understanding and problem-solving abilities. This not only fosters a supportive learning environment but also enhances each trainee's individual development. The interactive nature of team-based work encourages the exchange of knowledge and skills, which can lead to a deeper and more comprehensive grasp of the material (Johnson & Johnson, 2008). By emphasizing collaboration and mutual support, team-based assessments can transform a competitive environment into one that promotes positive interdependence, thereby addressing the challenges of teamwork and educational development effectively.

I suggest that continuous assessment for trainees be conducted through group work projects, evaluated based on the following criteria: collaboration, leadership, active participation, conflict resolution, adaptability, trust-building, communication, support provision, and empathy. These criteria ensure a comprehensive evaluation of trainees' ability to work effectively in teams, highlighting their interpersonal and collaborative skills.

This assessment mode should carry greater weight than the graduation exam, which, despite being essential for distinguishing among trainees, should hold less weight in the overall evaluation process. By prioritizing group work projects and evaluating criteria such as collaboration, leadership, and communication, this approach offers a more holistic and practical assessment of trainees' abilities, complementing rather than overshadowing traditional exams.

## 6. Conclusion

This study has provided some insights into the dynamics of competition and collaboration among trainee teachers at the CRMEF in Morocco. The findings reveal a high level of competition within the training environment, with significant implications for the trainees' stress levels, personal relationships, and overall professional development. Additionally, while collaboration is evident during group assignments, it is less pronounced in individual tasks, highlighting the complex interplay between competitive and collaborative behaviors.

Despite these insights, the study has notable limitations. Firstly, as a cross-sectional study relying on self-reported data, it provides only a snapshot of participants' perceptions at a single point in time. This design does not capture changes or trends over time, limiting the ability to establish causal relationships between competition, collaboration, and the observed outcomes. Additionally, the sample size of 157 participants in the quantitative phase is relatively small compared to the total population of trainees, which may affect the generalizability of the findings.

Future research could address these limitations by adopting longitudinal designs to track changes in competitive and collaborative behaviors over time. Expanding the study to include a broader range of cultural and educational contexts by incorporating additional training centers across the country would also enhance the generalizability of the findings. Moreover, investigating the impact of specific interventions, such as team-based assessments, on mitigating the negative effects of competition and fostering positive interdependence could offer practical strategies for improving teacher-training programs. Such efforts would contribute to a more comprehensive understanding of how to develop supportive and effective learning environments for future educators.

**Disclosure statement:** The two authors report no potential conflict of interest.
**Data availability statement:** Data available as SPSS files, audio files and transcripts if requested.

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