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# ADAPTING AND VALIDATING A NEED FOR ACHIEVEMENT SCALE FOR COOPERATIVE EFL WRITING CONTEXTS

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**Abstract:** The Need for Achievement (nAch), a key motivational variable in psychology, has received limited attention in the field of foreign language learning (FLL) due to a lack of measures specific to the area. This study reports the development and validation of a measure of nAch focused on the context of English as a Foreign Language (EFL) writing, specifically within cooperative learning (CL) activities. The measure was developed and adapted based on established theories of nAch and scale development through a multi-step validation ring process. The first step involved producing an initial item pool and seeking input from experts (n = 5) to establish content validity, which yielded excellent results (Scale-Content Validity Index/Average = 1.00). Next, a pilot study (n = 25) was conducted which revealed a clear five-factor model (striving for excellence, persistence & effort, preference for challenges, feedback responsiveness, and cooperative motivation) through Exploratory Factor Analyses (EFA), and good internal consistency (Cronbach's α = 0.82). The newly revised questionnaire was placed in the field with a final sample of 70 third year English as a Foreign Language (EFL) students at an Algerian university. Results of Exploratory Factor Analysis (EFA) indicated a strong fit for the five-factor model, which also showed excellent reliability and validity. The resulting final 25-item measure demonstrated strong reliability (α = 0.89). Findings provide strong evidence for the reliability and validity of the measure. This scale fills major methodological gap of providing researchers and educators with domain specific scale measure of achievement motivation in collaborative EFL writing pedagogy, which provides researchers the ability to conduct more exploratory studies and educators a strong rationale for instructional intervention.

**Keywords:** Cooperative Learning, EFL Writing, Exploratory Factor Analysis, Motivation, Need for Achievement (nAch), Psychometrics, Scale Validation

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## 1. Introduction

The desire for excellence and achievement are important elements of human nature that are conceptualized in psychology as the Need for Achievement (nAch). McClelland (1961) was the first to comprehensively study nAch and defines it as the "extent to which an individual desires to do well... to master skills, to control, or to reach a high standard." (Wirthwein et al., 2013, p. 45). This variable plays an important role in understanding motivated behavior across a variety of contexts from entrepreneurship to academic achievement. Regarding education, students with high nAch tend to assign themselves difficult goals, delight in becoming proficient in difficult material, and expend sustained attention on their studies. In addition, the construct and empirical significance of nAch is well-known in educational psychology and general psychology, the specific influence of nAch in the broad domain of foreign language learning, particularly in skill domains, like writing in English as a Foreign Language (EFL), has not received considerable attention. This is most likely more methodological, clearly we do not have any measurements for nAch for these context-specific cognitive, linguistic and social requirements in the EFL learning setting. Zhang and Zhang (2020) highlight this limitation by remarking “the lack of domain-specific motivation measures, obstructed our understanding of how motivational forces function in a particular learning environment” (p. 112). Therefore this study hopes to fill this gap by developing and validating a domain-specific measure of the Need for Achievement in cooperative EFL writing environments in the Algerian educational context.

The theory of nAch provides a theoretical anchor from which we may understand learner motivation in what many may perceive as a hard task, specifically writing in a foreign language. McClelland’s (1961) concept, which has been updated and adapted by researchers today, states that nAch individuals seek out mastery and achievement rather than simply external rewards. Hence, for foreign language learners, a learner with high nAch is triggered by internal needs to develop proficiency in the foreign language rather than just performance. They seek out difficult language tasks, and forge ahead with the challenges of learning a new system of language. This corresponds with fundamental ideas of FL motivation studies, as stated by Boo et al. (2015) “motivation in a foreign language environment is heavily dependent on a future-oriented vison of oneself as a competent user, a vision that fuels persistence and a mastery-oriented approach to learning challenges” (p.149).

A learner who imagines themselves as being competent in the English language, allows that imagining to develop the competence to write well. In addition, nAch ties in with mastery vs performance goal orientation. A student with nAch in writing would likely have mastery goals, rather than performance goals that would emphasize outperforming peers with writing activities as the primary goal. Despite these theoretical links being apparent, nAch has frequently been integrated into more comprehensive constructs of motivation with the various aspects of the nAch model left poorly explored regarding its individual predictive capacity for demonstrating effort over prolonged periods of time and ultimately achievement in a complex skill such as foreign language writing.

Equally important, the context in which writing is learned and practiced is paramount, and collaborative learning (CL) is a pedagogical approach which may provide extensive impact on student motivation. Based on social interdependence theory (Johnson & Johnson, 2018), CL is an organized group work where students work together to achieve common learning goals, and create positive interdependence and individual accountability. The evidence base of CL in providing improvement of educational outcomes in diverse subjects, including foreign language education, is strong. As Namaziandost and Nasri (2019) found in

their meta-analysis, “cooperative learning strategies have a moderate to large overall effect on EFL writing outcomes in many varied contexts” (p. 92).

From a motivation perspective, CL situations can act on motivation very specifically. They can improve self-efficacy through peer modeling and contributed support, intrinsic motivation through providing a social dimension to learning, and a shared purpose. Eventually for nAch, a well-designed CL situation can create an illustration of achievement-oriented processes in the classroom. The collaborative context can create striving for excellence as an expectation, provide immediate meaningful peer feedback, and define challenging writing tasks as shared problems to be solved. As Namaziandost and Nasri (2019) state, ”in effective cooperative learning situations, students’ achievement motivation becomes mediated socially and collectively” (p. 85). Ultimately, CL does not simply teach writing, it has the potential to create an environment that fosters the drive to achieve in the writing process.

But a methodological roadblock has prevented evidence of this potential link from being investigated in practice, which concerns a lack of a precise measurement tool. Measurement approaches for nAch, like Hermans’ (1970) classic Achievement Motivation Questionnaire, are helpful but function as general, context-free measures. They are general, decontextualized questions about a person's drive for success. A student’s response to a question like “I try hard to succeed” would not provide information about his/her specific drive in a situation to compose a coherent argumentative essay in a foreign language in Algerian context where English is a foreign language behind Arabic and French. As it would not negotiate both content and language in a peer group, for their cognitive load, linguistic insecurity, and social dynamics in particular. As Wang and Bai (2017) state, “context-specific measures are necessary to accurately capture learning motivation construct in learning domains” (p. 940). For example, a student can have high general nAch and low EFL writing nAch or vice versa. General measures are clearly not reliable as they do not provide an accurate picture and do not detect teachers’ pedagogy impact in situations like CL. What is needed is an instrument that captures nAch as it appears within this context ; a survey that asks questions like, "I strive for excellence with my English writing," "I am able to get through difficulties in writing," and "I am propelling along with the feedback from my peers and teacher on my writing" within the foreign language learning context in Algeria.

The scarcity of a measurement tool is an impediment for research and practice. As researchers, we are unable to measure how CL strategies influence EFL writers’ achievement motivation within the foreign language context. As educators, there are not sufficient tools to be diagnosticians to discover those students who might benefit from some motivational support (alongside the language instruction) who have poor writing specific nAch. Without a scale that is specific to the domain, the impact of a potentially powerful pedagogical practice (CL) and a powerful motivation construct (nAch) within a critical skill a student is learning in the language (writing) cannot be fully realized in foreign language learning context. Boo, Dornyei, and Ryan (2015) state, “the advancement of context-sensitive instrumentation is a step closer in consolidating our understanding of foreign language motivation processes” (155).

To address this issue, the current research developed and validated a new tool: the Need for Achievement in Cooperative EFL Writing Scale. This study is unique to the development of a psychometrically sound tool that adequately measures the multi-faceted context of nAch in the context of foreign language learning in Algeria.

This study addressed the following research questions:

1- What is the content validity of the adapted nAch in EFL Writing questionnaire?
2- What is the underlying factor structure of the questionnaire explored with Exploratory Factor Analysis (EFA)?
3- What is the internal consistency reliability of the questionnaire?

The answers to these questions were developed to provide foreign language teaching, EFL writing, and educational psychology researchers and practitioners with a validated instrument intended to create a context-specific and detailed understanding of achievement motivation, thus striving toward becoming a more motivating and effective foreign language learning environment in Algeria and beyond EFL learning contexts.

## 2. Literature Review

### *2.1 Theoretical Basis of Need for Achievement: From Murray to Present Uses*

The theoretical basis of Need for Achievement (nAch) can trace its roots back to Henry Murray's (1938) seminal work, which located achievement as a primary psychological need in Murray's exhaustive taxonomy of human motives. Murray defined nAch as the desire to "accomplish something difficult; to overcome obstacles and attain a high standard; to excel oneself; to rival and surpass others" (p. 164) and placed nAch with a relational systems of other psychogenic needs like, autonomy, affiliation, and power. His projective assessment methods, particularly, Thematic Apperception Test (TAT), offered the empirical basis of measuring implicit achievement motives, thus establishing nAch as unconscious, personality-based constructs rather than situational fractional responses.

Drawing on Murray, David McClelland (1961) formalized nAch and developed achievement motivation theory, which described nAch as a stable trait that includes pursuing personal judgement excellence involving moderate challenge toward a particular task. McClelland highlighted the specific patterns of behavior high-nAch participants demonstrated: selecting tasks with moderate levels of challenge, pursuing goals even in the face of obstacles and challenges, or working with and responding to mastery-concept feedback. McClelland's theory has been criticized as being too Western individualistic or empirically weak in terms of self-report measures (Spangler, 1992), however, basic principles have strong explanations for educational settings related to achievement-motivational learners and how they pursue a challenging task like EFL writing.

The conceptual differences between nAch and extrinsic motivation was developed further by Deci and Ryan (1985) with Self-Determination Theory model describing nAch as a form of intrinsic motivation based on internal standards/excellence, compared to other externally regulated behavior. This distinction matters in EFL settings due to evidence it holds of need for achievement as greater engagement, greater persistence in the face of obstacles, and greater self-regulation skills compared to extrinsically-motivated learning (Dweck 2006). The distinction of the underlying ground research is also applicable, indicating intrinsic achievement motivation reflects the core of human behavior instead of extrinsic reward behavior.

In current educational settings, and particularly in group cooperative EFL writing, Murray's original idea about the relationship of achievement need and affiliation need could be useful here. Evidence from research suggests cooperative learning with appropriate and scaffolded structure is one suitable way to meet achievement need with appropriately challenging writing tasks and at the same time meet the affiliation need of collaborative structures socially (Johnson & Johnson, 2018). Having student needs fulfilled together, could

represent the ideal form of expression for developing achievement, relating to the theoretical base of Murray originally, and theorists afterward, offering fundamental insight for understanding motivation of complex constructs in EFL writing.

*2.2 N-Ach and Language Learning*

N-Ach has been found to be connected to numerous aspects of foreign language learning (FLL). Vocabulary has emerged as one of the most highly correlated areas of interest to investigate. Tseng et al. (2006) first established this aspect of language learning and found a significant difference in vocabulary retention in high N-Ach learners, who could retain vocabulary faster and longer than low N-Ach learners. The authors also established that the differences were highlighted in intentional learning contexts, where the high N-Ach learners used more cognitive encoding strategies such as semantic mapping, spaced repetition, and the metacognitive ability to monitor their vocabulary knowledge (Tseng et al., 2006). Tseng et al. (2006) support McClelland's (1985) claim about achievement motivation that high N-Ach motivation is associated with goal-oriented behavior. Vocabulary learning yields discernible milestones that allow achievement-oriented learners to monitor their progress and achieve mastery satisfaction.

Another noteworthy difference relates to the quality of the vocabulary knowledge of high and low N-Ach learners. While all learners can superficially learn how to recognize words, in general, achievement-oriented learners are likely to develop more extensive semantic networks and greater lexical flexibility (Meara, 2009). N-Ach learners generated more diverse and semantically rich associations, indicating deeper integrations of new items into their mental lexicons, according to studies that employ word association tasks Saito et al. (2019). As high N-Ach learners are even more conscious of word relationships and registers, this deeper processing also applies to collocational knowledge (Webb & Kagimoto, 2009). These qualitative variations imply that N-Ach affects vocabulary depth as well as breadth, which has consequences for both receptive and productive language.

These findings' pedagogical implications lend support to appropriate remedial measures. Positive results are obtained from these strategy instruction programs, which include goal-setting, self-regulation, and reflection systems, especially when connected to growth mindset theory (Dörnyei & Ryan, 2015). Immediate feedback provided about individual learning using an adaptive learning program that progressively increases the complexity of lexical items will generally help high N-Ach learners motivate greatly, as they seek moderately challenging learning situations that fit a motivated achievement environment (Nation, 2013).

*2.3 The Cooperative Learning Context: Fostering Achievement Motivation*

As Johnson and Johnson’s (2009) conceptually develop it, Cooperative Learning is not merely group work, but an instructional strategy that is based on five formalized processes of learning: Positive Interdependence (we ”sink or swim together”), Personal Accountability (everyone in the group will be held individually responsible for achieving their goals), Promotive Interaction (face-to-face help) , Social Skill (deliberate instruction in collaborating, communicating and conflict managing,) Group Processing (evaluation and analyzing group results). This leads to a transition from the individual student learning in isolation to a network of interdependent learning communities.

This structured interdependence leads CL to be a particularly unique context for fostering the Need for Achievement (nAch). nAch is often considered an individual trait, but CL focuses that motivation through a social lens. The principle of Positive Interdependence creates a micro-environment where personal achievement is dependent on the group’s

achievement. Personal achievement is not lost through CL, however, there is also an element of social responsibility. Students' intrinsic desire to "accomplish something difficult" (Murray, 1938) is additionally strengthened through the explicit expectations of their peers that are relying on them to contribute their part. This makes the assignment transition from a personal effort to a social accountability effort, increasing the 'stakes' and enhancing the motivation.

Moreover, CL already provides the "moderately difficult tasks" that McClelland saw as the ideal level of challenge for high nAch peers. For instance, the negotiation of the complex writing task of co-constructing an argumentative essay through a series of interdependent roles (researcher, outline creator, draft writer, and editor) scaffolds the process to be appropriate and challenging for students. Hence, the task level is optimal to challenge, rather than overwhelm, a student's achievement drive. **The Promotive Interaction** and **Group Processing** components of CL contribute to productive formative feedback ; a characteristic high nAch students uniquely seek better than students with lower achievement. Moreover, a group provides immediate task specific feedback from multiple points that students can instantly apply to make improvements and advance knowledge and skills faster than a traditional teacher-centered learning, including writing.

Finally, CL adequately combines cooperation with a competitive feature. CL becomes cooperative for accomplishing goals within the group, but oddly enough, a competition emerges between groups within the task, or "friendly competition." This competitive feature strengthens nAch by utilizing the desire to "compete and outperform others." The groups ultimately end up trying to create the best essay or make the most coherent argument or the best final product that draws on the overall participatory goal. This suggests that CL does not extinguish individual achievement motivation but balances it effectively into a social network that makes the decisions and achievement as a socially-reinforced, and a socially-mediated process of developing EFL writing skills.

*2.4 Synthesis and Rationale*

The literature review above set the basis for an interesting theoretical framework yet created serious methodological concerns. On one hand, we have a solid theoretical understanding of Need for Achievement (nAch) as a strong intrinsic motivator of goal-directed behavior, perseverance, and mastery. From Murray's conceptualization (1938), to McClelland's organized theory and clear distinction of intrinsic versus extrinsic motivation (Deci & Ryan, 1985), nAch is clear, and its relevance in education is explicit. On the other hand, there is ample research that suggests Cooperative Learning (CL) based on the evidence of positive interdependence and individual accountability (Johnson & Johnson, 2009), is, as a motivational and interpersonal context, a relevant and different space that is extraordinarily useful for catalyzing learners' goal directed actions.

In theory, the two areas fit nearly perfectly. CL provides the particular context in which the nAch theory states this motivation can thrive: a context with moderated challenges, timely feedback via relationship-building, and a social setting that puts individuals' aspirations to be part of a group. nAch should in theory be a powerful impetus and launcher of potential nAch in defined areas like FL writing.

Despite there being theoretically solid bases, the investigation methodology has not been taken up adequately to address or explore this intersection. Theoretically, nAch is clearly defined, and we know CL stimulates motivation, we simply do not have a measure of need for achievement strong enough to measure the mechanism of the "cooperative learning interventions" on achievement motivation in the domain of FL writing. Existing general

nAch tools are simply not designed to measure the types of ways nAch is demonstrated in the delineated cognitive, linguistic and social constructs of working together to write with peers in a foreign language. Is a student's nAch drive pinpointed on linguistic accuracy, rhetorical finesse, or cooperative efficacy? A scale that is decontextualized simply cannot help us with that. So, researchers have settled upon somewhat general measures of motivation or dispositions of academic achievement to measure need for achievement triggers, and changes in ideal types of excellence, persistence and types of goal directedness that CL can instill in writers. That's a problem for research and practice. Without a domain-specific measure, we are stuck with simply being able to say "CL motivates" and not be able to specifically delineate what types of achievement motivation are being most activated and how those changes impact ultimate success in writing language. Educators do not have a diagnostic tool to identify students who have low nAch and create necessary CL intervention programs to activate those dimensions of motivation.

This study aims is to create and develop a validating Need for Achievement in Cooperative EFL Writing Scale, providing a psychometric measure that is contextually guided for study researchers with students a precise, valid, frameable, theoretical basis for researching CL.

## 3. Methodology

### *3.1 Phase 1: Scale Refinement and Content Validation*

#### ***Item Generation***

The Need for Achievement in Cooperative EFL Writing Questionnaire (NA-EFLWQ) started with a systematic item adaptation based on previous theoretical and empirical bases. The item was adapted mainly from Hermans' (1970) Achievement Motivation Questionnaire (AMQ) which encompassed topics related to achievement motivation in large areas of achievement motivation. We supplemented design and theoretical specifications based on nAch from McClelland's (1961) so that the centering around nAch, originally McClelland's primary conceptualization of achievement motivation, remained intact.

The item adaptation protocol exemplified the procedural models used for contextualization across the purposes hereof, in which various types of general items were modified for adapted purposes towards EFL writing and a group context. This would be achieved in ways including:

**Domain Specificity.** Whereas previous references to general achievement contained no domain specificity, item references instead framed references with "English writing," "essays," and "writing tasks." For example, the general item "I work hard to achieve" became "I work hard to achieve a good quality for my English writing task."

**Contextual Framing.** Framed to fit cooperative learning, items were changed to make specific reference to "group work," "feedback from peers," and "collaborative writing goals." For example, "I like hard challenges" became "I like hard writing challenges when working in a group."

**Dimensional Referencing.** Referencing of five nAch areas theoretically grounded around collaboration; (1) Striving for Excellence, (2) Persistence & Effort, (3) Preference for Challenges, (4) Feedback and Responsiveness, and (5) Collaborative motivation.

This resulted in an initial 40-item pool (8 items representing each of the 5 hypothesized dimensions). Items were developed as declarative statements containing language that is accessible to higher education EFL learners.

***Expert Panel***

Five experts have been chosen for their particular expertise and experiences. The panel consisted of:

Two applied linguistics professors with experience in EFL writing instruction and more than 15 years of experience in teaching, one associate professor in TEFL, two experienced EFL instructors with magister degrees and over 10 years of pedagogical experience.

Experts in the panel were given a comprehensive description of the definition of the constructs, five theoretical dimensions, and the context of cooperative EFL writing, to help in their judgment.

***Procedure for Content Validity Index***

Content validity was conducted in accordance with a systematic procedure by Polit and Beck (2006). Experts evaluated each of 40 items in isolation under a structured four-point rating scale:

1 = Not relevant

2 = Somewhat relevant

3 = Quite relevant

4 = Highly relevant

The Item-Level Content Validity Index (I-CVI) was reported for each item, with the number of experts rating the items. Using contemporary standards for validation (Polit & Beck, 2006), an I-CVI of 0.78 or higher was acceptable for five experts on a panel. The Scale-Level Content Validity Index (S-CVI), calculated two ways: the Universal Agreement (S-CVI/UA), which is the proportion of items, rated a 3 or 4 by all experts, and the Average (S-CVI/Ave), calculated as the mean of all I-CVIs.

The expert panel provided qualitative feedback on each item's clarity, wording, and appropriateness for the target population and was reviewed for common themes and used, where possible, as part of the process for amending items, which had acceptable content validity but needed clarity. Items rated below the threshold of 0.78 based on I-CVI ratings were either substantially modified or dropped from the pool.

The validity of the process allowed for 34 items to be retained to provide excellent content validity, each item with an I-CVI of 1.00 and a S-CVI/Ave of 0.91 with unanimous expert judgment for the relevance of each constructed item. This final 34 item version with content validity, was advanced to the pilot testing stage for psychometric evaluation.

*3.2 Phase 2: Pilot Study*

*Participants and Setting*

The pilot study involved a sample of 25 third-year EFL students from Bejaia University, distinct from the main study sample to maintain the independence of the validation process. Participants were selected via convenience sampling from parallel classes that were not engaged in the experimental intervention. There were 15 women (60%) and 10 men (40%) in the sample, and they were all between the ages of 20 and 23 (M = 21.4, SD= 0.89). This demographic representation was comparable to the target population for the primary study and facilitated the validation of the piloting for instrument revisions. Participants exhibited diverse levels of writing proficiency, as indicated by their grades from

the preceding semester in written expression courses, to ensure variability in psychometric validity.

*Procedure*

Pilot administration occurred during standard class sessions within a regulated classroom environment to preserve the authentic testing context. Before the study began, it was noted that ethical procedures were followed: all participants were told what the study was about, and their privacy and anonymity were guaranteed. Participants were clearly told that they have the choice to take part or not in the study and that it wouldn't affect their grades.

Students were given both spoken and written instructions that made it clear they were being asked to answer honestly, based on their own experiences with EFL writing. The administration took approximately 20 to 25 minutes to complete. Following the quantitative data, a structured debriefing with all participants after completion of the questionnaire for qualitative reasons, regarding clarity, significance, and real-life use of the instrument was conducted. Participants were asked directly about each response about whether they had issues with items that were unclear, confusing, or difficult to answer, and a question regarding the overall clarity of the instructions and formats of responses.

*Data Analysis for Pilot Study*

The data analysis for the pilot study approached the item deductions in a sequential mixed methods approach. In the first step, we analyzed the qualitative data from debriefing sessions thematically to identify the items that people struggled to understand. In the second step, we analyzed the quantitative data, beginning with item-level descriptive statistics (i.e., means, standard deviations, item-total correlations), to identify items that were low in variability or were ineffective in discriminating between groups.

The main quantitative analysis was an Exploratory Factor Analysis (EFA) using Principal Component Analysis with varimax rotation in SPSS version 24. The aim was to investigate an initial factor structure and eliminate problematic items according to the following criteria:

- Factor loadings for all factors are less than 0.40.
- Cross-loadings that are higher than 0.40 across factors
- Items that did not conceptually correspond to their primary factor.

We used Cronbach's alpha to check for internal consistency, paying attention to whether or not removing items would make the subscale more reliable. We ultimately made the decision on whether to retain or remove items using evidence from all three data sources and data collection insights: qualitative data, descriptive statistics, as well as factor analysis. This approach allows us to maintain theoretical coverage, while improving psychometric properties and practical usability for the intended population. The outcome from the pilot analysis yielded a reduction of 15 items with statistical or qualitative issues resulting in a 25-item refined version used for the main validation study.

*3.3 Phase 3: Primary Study Validation*

*Participants and Setting*

We conducted the main validation study with a sample of 70, 3rd-year EFL students in a Written Expression course at Bejaia University, Algeria. A sample of 70 students is deemed appropriate for conducting a Factor Analysis, supported by strong indicators for sampling appropriateness (KMO=0.87) (Tabachnick & Fidell, 2019). Participants came from

intact classes but were not included in the pilot study group to provide validation for an independent group. Demographic data for the participants in our main validation study are shown in Table 1.

**Table 1.**

*Demographic Information for Participants in Main Validation Study (N=70)*

| Characteristic | Category | Frequency | Percentage |
|---|---|---|---|
| Gender | Female | 52 | 74.29% |
| | Male | 18 | 25.71% |
| Age | 20–23 | 57 | 81.43% |
| | 23–28 | 13 | 18.57% |
| Group Distribution | Experimental | 34 | 48.57% |
| | Control | 36 | 51.43% |

All students were from similar socio-economic backgrounds with the same study program. The experimental and control groups were distributed similarly for all demographic variables; this shows that the sample for the validation study was representative.

*Data Collection Procedure*

Data were collected for the main validation study in the first week of the academic semester before any instructional interventions were emplemented. In this way the participants would not be familiar with the questionnaire items prior to the study. The questionnaire was administered in a controlled classroom setting during regular class time to increase participation rates. The questionnaire process followed the same standardized administration procedures: participants received both verbal and written instructions about their rights to voluntary consent and confidentiality.

Ethical precautions included the right to withdraw from the study at any time without penalty, and the anonymity of participants throughout the entire study procedure (i.e., participants were assigned coded identifiers). The researcher supervised the administration to standardize conditions and answer any questions from participants. Participants completed the questionnaires in approximately 20 to 25-min of their time. The final sample size was 70 and all participants completed the questionnaires resulting in 100% response rate with no missing data.

*Data Analysis for Main Study*

The data were collected from the Main validation study (N=70) and were analyzed to find the general psychometric properties of the 25-item Need for Achievement in Cooperative EFL Writing Questionnaire. The data were analyzed in sequential order to determine factor structure, reliability and descriptive statistics, and provide evidence for validation of the instrument.

*Factor Structure Validation*

The final factor structure was evaluated via Exploratory Factor Analysis (EFA) using the data from the current study. As a first step prior to conducting the EFA, the suitability of the data for factor analysis was reviewed via the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, which returned a value of 0.87, which is above the recommended level of 0.60. Bartlett's test of sphericity was significant ($\chi^2 = 1254.32$, $p < 0.001$), which demonstrated that there were sufficient correlations among the items for factor analysis.

An Exploratory Factor Analysis using Principal Component Analysis with varimax rotation was performed to determine the underlying factor structure. The criteria for factor extraction utilized several metrics, specifically eigenvalues exceeding 1.0, the inflection point of the scree plot, and the conceptual clarity of the factors. The EFA only accepted items that had a primary factor loading of 0.50 or more and a secondary factor loading of 0.40 or less. This method was very strict, and it only let items that had clear and strong links to its factors be included in the final scale structure.

*Analysis of Reliability*

The total scale's internal consistency reliability was measured using Cronbach's alpha coefficient. The reliability coefficients were interpreted according to the recommended guidelines: 0.70 or above was acceptable for research purposes, 0.80 was good reliability, and 0.90 was excellent reliability. We also looked at item-total correlations to see if each item was related to its subscale well enough.

*Descriptive Statistics*

Means, standard deviations, ranges, and skewness were calculated for the total scale, as well as for each of the subscales. Descriptive statistics provide the necessary normative data to contextualize future research and to draw some broader comparisons between the various demographic groups in the sample.

Therefore, this particular blended analytical design specification provides strong evidence of the structural validity and reliability of the survey and provides psychometric rigor for the need for achievement in cooperative EFL writing instrument in the Algerian educational setting. The factor analysis, reliability, and descriptive statistics procedures allow for the instrument to meet standards of educational research. Table 2 summarizes the different tools adopted in this study, as well as the appropriate statistical analyses for each one.

**Table 2**

*Summary of Tools and Statistical Analyses*

| Phase | Primary objective | Instruments | Statistical Analyses | When implemented | Interpretation criteria |
|---|---|---|---|---|---|
| 1. Scale adaptation and content validation | Establish content validity | Initial 40 item pool<br>Expert panel (n=5)<br>4-point rating scale | CVI<br>I-CVI<br>S-CVI | Before pilot study | I-CVI ≥ 0.78<br>S-CVI ≥ 0.90 |
| 2. Pilot study | Refine item pool | 40-item questionnaire | EFA<br>Initial Cronbach α<br>Qualitative analysis | After content validation, before main study | Remove items with loading < 0.40<br>Eliminate cross-loading items<br>Qualitative feedback |
| 3. Main validation | Establish final | Final 25-item | EFA (final)<br>KMO & | After pilot study | KMO > 0.60<br>Bartlett's < |

| | | | | | |
|---|---|---|---|---|---|
| study | psychometric properties | questionnaire | Bartlett's test<br>Final Cronbach α<br>Descriptive statistics | refinement | 0.001<br>Factor loadings > 0.50<br>α ≥ 0.70 |

## 4. Results

*4.1 Validation of the nAch in Cooperative EFL Writing Questionnaire*

*Content Validity and Pilot Testing*

**Expert Validation (CVI/I-CVI/S-CVI Results)**

The content validity of the initial 40-item pool was assessed by a panel of five experts in Applied Linguistics and TEFL. The experts focused on the appropriateness of items to the construct of "Need for Achievement in a Cooperative EFL Writing Context." The content validity index (CVI) results are summarized in Table 3.

As shown in Table3, the I-CVI for original items varied from 0.40 to 1.00. Of the 40 items, 25 received an I-CVI of 1.00, indicating consensus on appropriateness. Nine items were rated at a level that indicates an acceptable CVI of 0.80. Six items were rated below the acceptable level of 0.78; consequently, they were eliminated due to poor content validity.

The S-CVI (using the averaging method) for the original pool of items was determined to be 0.85. After these six items with low I-CVI were eliminated, the average S-CVI for the remaining 34 items was 0.91, which met the recommended standard for excellent content validity. The S-CVI (universal agreement) was 0.63 for the original pool.

Qualitative feedback from the experts focused mainly on specificity and clarity of the items. In terms of specificity, some items were found to be broad in nature (e.g. "Producing high-quality writing is a personal goal for me."), and some items that pertained to social anxiety (e.g. "I would feel bad if my lack of preparation…") rather than achievement motivation were identified for removal. This process resulted in the initial pool of 34 items to be used in the pilot study for statistical refinement.

**Table 3.**

*Content Validity Index (CVI) Results for the Initial Item Pool*

| Metric | Value | Interpretation |
|---|---|---|
| Experts' Number | 5 | |
| Initial Items Number | 40 | |
| I-CVI range | 0.40 – 1.00 | |
| Items with I-CVI = 1.00 | 25 | Excellent relevance |
| Items with I-CVI = 0.80 | 9 | Acceptable relevance |
| Items with I-CVI < 0.78 | 6 | Poor relevance, removed |
| Initial S-CVI | 0.85 | Good overall content validity |
| S-CVI after removing 6 items | 0.91 | Excellent overall content validity |

*Pilot Study Refinement (EFA and reliability with qualitative feedback)*

The updated 34-item questionnaire was pre-tested with a pilot sample of 25 EFL students to check for psychometric properties and qualitative feedback. Data were analyzed using Exploratory Factor Analysis (EFA) and reliability analysis, and results are displayed in Table 4.

The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.81, and the results of Bartlett's test of sphericity were statistically significant ($\chi^2 = 856.32$, $p < 0.001$), however, nine items had either cross-loading > 0.35 or loaded to undesired factors that did not match their construct theory.

The internal consistency of the scale in the pilot study was satisfactory, yielding a total scale Cronbach's alpha of 0.82. Looking at the subscales showed that taking out the nine items of concern that were found in EFA would make each factor more reliable. Qualitative feedback from participants was necessary for enhancing the questionnaire items. Students said that items 5 and 7 ("I aim for perfection..." and "I am satisfied only when my writing meets my high standards") had some things in common. A lot of students said they wouldn't be able to do item 10 ("I volunteer for difficult writing topics...") in a classroom. They also thought that some things could be made easier to understand for readers.

The nine items were taken out of the questionnaire because of the statistical results and the qualitative feedback. Thus, the new 25-item version was established with good psychometric properties and clear understanding for the participant population; this version moved on to the main study.

**Table 4.**

*Pilot Study EFA and Reliability results (n=25)*

| Analysis Component | Results | Interpretation |
|---|---|---|
| KMO | 0.81 | Good sampling adequacy |
| Bartlett's test | $\chi^2 = 856.32$, $p < 0.001$ | Data suitable for EFA |
| Total Variance Explained | 56.7% | Adequate variance explained |
| Number of factors retained | 5 | Matches theoretical framework |
| Items with Cross-Loadings | 5 | Removed for discriminant validity |
| Theoretically misaligned items | 4 | Removed for construct validity |
| Initial Cronbach α | 0.82 | Acceptable initial reliability |
| Final items retained | 25 | Proceed to maintain validation |

### *4.2 Main Validation Study Results*

*Participants' Characteristics and Sampling Adequacy (KMO/Bartlett's)*

The validation study was executed with identified data from 70 third-year students of English as a foreign language (EFL), studying at Bejaia University. The sample consists of 52 females (74.29%) and 18 males (25.71), ages are between 20- 28 years, while most of the participants (81.43%) were between 20- 23 years of age. The students were randomly assigned to either the experimental (48.57%) or control condition (51.43%). Prior to the formal factor analysis, the appropriateness of the data for Exploratory Factor Analysis curriculum was systematically investigated. The Kaiser-Meyer-Olkin (KMO) measure of

sampling adequacy shows that the value of 0.87 is very good, which is higher than the suggested value of 0.60. Bartlett's test of sphericity, with $\chi^2(300) = 1254.32$ and $p < .001$, demonstrates that the correlations among items were sufficiently substantial to warrant factor analysis, indicating that the correlation matrix was not an identity matrix.

According to Kaiser's classification, these results show that the sample is large enough, and the participants' characteristics are in line with those of the intended population of undergraduate EFL learners. The sample size, demographic profile, and indicators of sampling adequacy together make a strong case for continuing with factor analysis and reliability tests of the survey.

**Final Factor Structure (EFA with factor loadings)**

The last Exploratory Factor Analysis (EFA) on the 25-item questionnaire used Principal Component Analysis with varimax rotation. This analysis produced a robust five-factor solution, explaining 66.04% of the total variance, which provides some support to the proposed structure of the Need for Achievement in Cooperative EFL Writing construct.

The 25 items had strong loadings for their own factors, with factor loadings between 0.61 and 0.86. None of the items had significant cross-loadings (all secondary loadings < 0.40), which meant that the five factors were very clear and well-defined.The five factors were intuitively interpretable and in line with our theoretical expectations:

Table 5 provides the factor loadings for the 25 items, providing evidence of a strong simple structure, with all primary loadings at greater than 0.60. The EFA revealed a good simple structure with good factor distinctiveness. This provides good evidence of construct validity for the questionnaire.

**Table 5.**

*Summary of Final Exploratory Factor Analysis Results (N=70)*

| Factor | Number of items | Factor loading range | Eigenvalue | % of variance | α |
|---|---|---|---|---|---|
| 1. Cooperative motivation | 6 | 0.72–0.86 | 5.82 | 23.28 | 0.87 |
| 2. Striving for excellence | 5 | 0.69–0.84 | 3.45 | 13.80 | 0.85 |
| 3. Feedback responsiveness | 5 | 0.71–0.85 | 2.91 | 11.64 | 0.84 |
| 4. Persistence & effort | 5 | 0.68–0.81 | 2.35 | 9.40 | 0.79 |
| 5. Preference for challenges | 4 | 0.61–0.85 | 1.98 | 7.92 | 0.82 |
| Total | 25 | | 16.51 | 66.04 | 0.89 |

*Note*. KMO=0.87, Bartlett's $\chi^2(300) = 1254.32$, $p < .001$. All factor loadings represent the primary loading for each item and exceed the 0.40 threshold.

**Scale Reliability (Cronbach α)**

Reliability was determined through Cronbach's alpha, examining the internal consistency of the final 25 item questionnaire. Table 5 shows the reliability analysis demonstrating the total scale was excellent ($\alpha = 0.89$). All the five subscales had good or excellent internal consistency, with coefficient ranging from 0.79 to 0.87 above the 0.70

recommendation, thus supporting that both the total scale and subscales reliably measure their respective constructs with strong internal consistency.

**Descriptive Statistics**

Descriptive statistics were calculated for the final 25-item scale and the sub-scales were analyzed in order to explore score distributions, and provide a baseline for interpreting normative data. Total scale scores ranged from 67 to 118 (max = 125) with a mean of 95.45 (SD=11.63) suggesting high levels of need for achievement overall, but sufficient variability for analysis.

Sub-scales were appropriate and demonstrated sufficient variability in terms of score distribution and also mean values typically in the upper half of possible ranges. As an example, the Striving for Excellence sub-scale had a high mean (M=19.81, SD=2.95), while the Persistence & Effort sub-scale had a slightly lower mean but still represented meaningful levels (M=17.90, SD=3.08).

**Table 6.**

*Descriptive Statistics for the nAch scale and Subscales (N=70)*

| Scale | Possible Range | Actual Range | Mean | Standard Deviation |
|---|---|---|---|---|
| Total Scale | 25–125 | 67–118 | 95.45 | 11.63 |
| Subscales | | | | |
| Cooperative Motivation | 6–30 | 14–30 | 23.87 | 3.45 |
| Striving for Excellence | 5–25 | 12–25 | 19.81 | 2.95 |
| Feedback Responsiveness | 5–25 | 10–25 | 18.65 | 3.12 |
| Persistence & Effort | 5–25 | 9–24 | 17.90 | 3.08 |
| Preference for Challenge | 4–20 | 7–20 | 15.22 | 2.71 |

*4.3 Summary of Psychometric Properties*

**Brief Synthesis of Validity and Reliability Evidence**

The validity process overall provided strong psychometric support for the 25-item Needs for Achievement in Cooperative EFL Writing Questionnaire. The measure had excellent content validity (S-CVI/Ave = 0.91) in that all items received high ratings of relevance from content experts. Exploratory factor analysis revealed a strong five-factor solution that accounted for 66.04% of variance. All items loaded significantly on their designated factors (loadings = 0.61 - 0.86) and there were no cross-loadings that created problems. In terms of internal consistency, the scale also had good internal consistency with total Cronbach's alpha = 0.89 and subscales reliability coefficients ranging from 0.79 to 0.87, all above adequate levels for use in research. Descriptive statistics indicate that scores were finally consistent across subscales with total scores (M = 95.45, SD = 11.63) across the score range (67-118/125), suggesting that the measure can differentiate levels of achievement motivation.

Overall, these evidences provide good support for the questionnaire's validity and reliability to measure the need for achievement in cooperative EFL writing. The scale is supportive from a psychometric standpoint and can be used as an instrument for a research study investigating motivational processing within a similar academic context.

## 5. Discussion

The current study was able to satisfy an important methodological issue in FL motivation research by creating and validating a comprehensive instrument that measures Need for Achievement (nAch) in cooperative EFL writing contexts. The strong psychometric properties, validated through exploratory analyses, indicates that the Need for Achievement in Cooperative EFL Writing Questionnaire has proved to be a reliable source for highlighting nAch as a multidimensional construct. This discussion will summarize the findings, discuss theoretical and practical implications, limitations of the study, and provide suggestions for future studies.

### *Interpretation of the Factor Structure and Theoretical Implications*

As reviewed in the exploratory factor analysis, a 5-factor structure emerged, Cooperative Motivation, Striving for Excellence, Feedback Responsiveness, Persistence & Effort, and Preference for Challenge. This structure significantly suggests that nAch in cooperative writing settings has not a singular trait, but a complex and multidimensional construct where achievement types are dynamically mediated by social and instructional environments. Furthermore, Cooperative Motivation was identified as a positive factor contributor.

Cooperative Motivation indicates that the desire to achieve is intertwined with group work in CL contexts. Items that loaded on this factor show that motivating achievement is based on accountability from peers, with shared goals, or having higher performance standards for the group. This furthers McClelland's (1961) original proposed individual focus of nAch, situating it in contemporary sociocultural conceptions that regard motivation as a socially constructed phenomenon (Dörnyei, 2009). In short, the scale reflects how the psychogenic need for achievement and need for affiliation, which Murray (1938) identified as separate types of need, become integrated under the umbrella of positive interdependence, which is the focus of CL (Johnson & Johnson, 2009).

The other four factors ; Striving for Excellence, Persistence & Effort, Preference for Challenge, and Feedback Responsiveness, are the basic core, individual aspects of nAch but are contextualized in a collaborative context. The strong loadings on Feedback Responsiveness, for example, shows the importance of peers as sources of formative feedback in writing, and this is an aspect missed in general nAch measures. This factor structure provides a comprehensive framework for understanding how internal motivations for achievement are stimulated and manifested within the distinct social and cognitive requirements of collaborative EFL writing.

*Evidence of Psychometric Strengths and Validity*

The questionnaire exhibits exceptional psychometric properties, exceeding established benchmarks for an adapted instrument. The high Scale-Content Validity Index (S-CVI/Ave = 0.91) shows that the items are appropriate and complete from the expert's point of view. The EFA's clear and simple structure, which showed that the model accounted for 66.04% of the total variance, strongly supports construct validity. This shows that the scale does measure the theoretical dimensions it was meant to.

The reliability analysis also shows that the scale gives reliable and stable measurements. The Cronbach's alpha for the total scale ($\alpha = 0.89$) shows that the scale is very

consistent within itself. The reliability of the subscale values is good to very high (α = 0.79 to 0.87), so researchers can use both overall scale (or total) scores and subscale scores alone reliably. Finally, the descriptive statistics offer supplementary evidence regarding the instrument's efficacy, demonstrating suitable variability across the score ranges and providing credible validation that the scale is both effective and sufficiently sensitive to discern variations in nAch levels among EFL students.

*Research and Pedagogical Implications*

The validated measure has a clear research and classroom intervention benefit. This provides researchers a way to pinpoint factors beyond general results in their measures of motivation to apply a more exact and systematic approach to conducting an empirical inquiry. For example; what evidence have certain Classroom Literacy (CL) structures (e.g., Jigsaw, or Peer Editing) provided about their differentiated impact on nAch components? Or have the changes described in Feedback Responsiveness demonstrated any relation to successfully developing more types of writing complexity and accuracy? This provides opportunities for testing complex theoretical designs regarding the causal relationships between pedagogy, motivation, and language learning outcomes.

The questionnaire also has the diagnostic utility for EFL teachers and curriculum designers. Teachers can modify their CL activity design by identifying motivational profiles of their students at the outset of the class. A student who demonstrates low persistence or hard work (measured) may need specific activities breaking down the complexity of the task, in addition to setting a deadline. For students who demonstrate low collaboration, some initial team-building activities that cultivate cooperative interdependence may be warranted. For the teacher to know that the analysis and development of achievement motivation can be facilitated and developed through specific classroom interactions will inform their variations in complexity and the writing experience for students and themselves.

***Limitations and Recommendations for Future Research***

The study significantly contributes to the field and presents limitations that may encourage further research. First, the validation sample, while adequate, originates from a single university in Algeria. Consequently, this may indicate that norms possess restricted generalizability beyond their cultural and institutional contexts. Consequently, cross-cultural validation studies are a crucial subsequent step to investigate the instrument's wider applicability.

Second, the motivation profile of the participating students was assessed at a single point in time. Future research may employ longitudinal or experimental designs to demonstrate the scale's sensitivity to change by incorporating it as a pre-post measure to examine the effects of specific CL interventions on nAch development. Future research may investigate predictive validity, particularly by analyzing the correlation between subscale scores and objective assessments of students' writing proficiency and achievement.

## 6. Conclusion

In conclusion, the Need for Achievement in Cooperative EFL Writing Questionnaire represents a significant advancement in the domains of foreign language learning motivation and writing pedagogy. This study enables researchers to examine more precisely and comprehensively the influence of the collaborative learning context on achievement motivation, utilizing a reliable and valid, context-specific assessment. This establishes a link between traditional motivation theory and modern pedagogical practice, offering researchers a robust foundation for investigation and teachers valuable data to enhance their practice, thereby contributing to a more motivating and productive EFL writing classroom.

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## Appendix

**Questionnaire on Need for Achievement, Cooperative Learning and Writing**

Gender: Male ……□ Female ……☐ Age: …….

**Instructions:** Please read each statement below and indicate your level of agreement or disagreement based on your personal feelings and experiences in your English writing class. There are no right or wrong answers. Please be honest and indicate your feelings.

Use the following scale:

**1 = Strongly Disagree** **4 = Agree**

**2 = Disagree** **5 = Strongly Agree**

**3 = Neutral**

| **Need for Achievement (nAch) in writing** | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1-I take personal pride when I successfully communicate ideas in a well-organised English essay. | | | | | |
| 2-I frequently set higher expectations for my writing tasks than what my teacher has established. | | | | | |
| 3-I find the challenge of communicating complex ideas through written English exciting. | | | | | |
| 4-I seek advice and feedback on my writing because I want to improve it. | | | | | |
| 5-I feel disappointed when I don't think I've produced my best possible written work. | | | | | |
| 6-I find the prospect of a challenging writing task more pleasurable than doing an easy essay. | | | | | |
| 7-A marked improvement in my writing over time is a very important source of motivation for me. | | | | | |
| 8-I spend extra time revising my drafts to produce a better written text. | | | | | |
| 9-I feel confident that I can clearly organise my ideas in an English essay. | | | | | |
| 10-I feel confident in my academic writing skills especially in grammar and vocabulary. | | | | | |
| 11-I think I can become a competent academic writer in English if I continue to practise. | | | | | |

| **Cooperative Learning (CL) Environment** | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 12-Working in groups encourages me to develop my strengths and weaknesses in writing. | | | | | |
| 13-Through observing my fellow students' approach to a writing task, I learn valuable writing strategies. | | | | | |
| 14-I feel responsible for doing my part of work when we are working | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| on a group writing project. | | | | | |
| 15-Helpful suggestions from my group members improve my writing. | | | | | |
| 16-Talking with peers clarifies or improves my ideas for writing. | | | | | |
| 17-I feel perfectly comfortable sharing my unfinished drafts of writing with my fellow students. | | | | | |
| 18-Our group success on a writing project depends on everyone's individual effort. | | | | | |
| 19-I can use other people's feedback to effectively revise my writing. | | | | | |

This section assesses how collaboration influences the individual's drive for achievement.

| **Section C: Interaction of nAch and CL** | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 20- Discussion groups motivate me to hold myself accountable to achieve a higher standard of writing. | | | | | |
| 21- I am more likely to take a risk in writing when I feel supported by my group. | | | | | |
| 22- My peers motivate me to produce high quality writing just by being present in the group. | | | | | |
| 23- There is a healthy competition among my peers that encourages my need to achieve more. | | | | | |
| 24-Helping another group member with their writing challenges helps me re-evaluate my understanding of the concepts. | | | | | |
| 25-Achieving at least a good mark on a group writing project is much more satisfying than achieving the same mark on an individual writing project. | | | | | |

Thank you for your participation