

PREDICTORS OF ENGLISH PROFICIENCY OF TEACHERS ACROSS Updated Version

Predictors of English Proficiency of Teachers Across

Understanding the factors that influence the English proficiency of teachers is crucial for educational institutions, policymakers, and teacher training programs aiming to improve language instruction quality. The predictors of English proficiency of teachers across various regions and contexts are multifaceted, encompassing personal, educational, professional, and contextual elements. This comprehensive guide explores the most significant predictors, their implications, and strategies to enhance teachers' English language skills.

Introduction to Predictors of English Proficiency Among Teachers

English proficiency among teachers directly impacts students' language learning outcomes. Teachers serve as role models and facilitators of language acquisition, making their competence in English indispensable for effective instruction. Various factors contribute to a teacher's level of English proficiency, which can be categorized into personal attributes, educational background, professional development, and contextual influences.

Personal Attributes as Predictors

Personal factors form the foundation of a teacher's ability to acquire and demonstrate proficiency in English. These include innate language aptitude, motivation, and attitudes toward English.

Language Aptitude

- The natural ability to acquire languages can significantly influence proficiency levels.
- Teachers with higher language aptitude tend to learn and use English more effectively.

Motivation and Attitudes

- Teachers with intrinsic motivation are more likely to invest effort in improving their English skills.
- Positive attitudes toward English and language learning correlate with higher proficiency.

Age and Personal Experience

- Younger teachers may adapt more readily to new language skills.
- Prior exposure to English, such as living in an English-speaking environment, enhances proficiency.

Educational Background

The formal education teachers receive plays a vital role in their English proficiency.

Level of Education

- Teachers holding higher educational qualifications (e.g., Bachelor's, Master's, Doctorate) often have better language skills.
- Specialized language or linguistics degrees contribute to higher proficiency.

English Language Training

- Completion of dedicated English language courses or certifications (e.g., TESOL, TEFL, CELTA) improves proficiency.
- Ongoing language training keeps teachers updated with current language use and pedagogical strategies.

Academic Achievement

- Consistently high academic performance in language courses correlates with better proficiency.
- Exposure to rigorous language assessments enhances competence.

Professional Development and Experience

Ongoing professional development (PD) and teaching experience influence English proficiency levels.

Participation in Professional Development Programs

- Regular workshops, seminars, and courses focused on language skills bolster proficiency.
- Collaborative learning environments facilitate peer support and knowledge exchange.

Teaching Experience

- Longer teaching tenure provides more opportunities to practice and refine language skills.
- Experience in diverse teaching contexts enhances adaptability and language use.

Use of English in Professional Settings

- Teachers who regularly utilize English for lesson planning, communication, and research tend to improve their proficiency over time.

Contextual and Environmental Factors

External factors in the teachers' environment also significantly influence their English proficiency.

Language Policy and School Environment

- Schools with English as the medium of instruction promote daily language use.
- Supportive institutional policies encourage teachers to use and improve English.

Availability of Resources

- Access to quality teaching materials, language labs, and digital tools enhances language skills.
- Availability of English-speaking communities or networks fosters language practice.

Socioeconomic Status

- Teachers from higher socioeconomic backgrounds may have more exposure to English through social and cultural activities.
- Resources for private tutoring or language immersion are more accessible.

Impacts of Cultural and Societal Factors

Cultural attitudes toward English and societal norms influence teachers' motivation and opportunities for language development.

Perception of English's Role

- Societies that value English proficiency see increased motivation among teachers to improve

their skills.

- Cultural attitudes can either facilitate or hinder language learning.

English as a Global Language

- The global importance of English encourages teachers to attain higher proficiency.
- International exposure through media and travel contributes to language competence.

Strategies to Improve Predictors of English Proficiency

Enhancing the predictors of English proficiency requires targeted interventions.

Implementing Comprehensive Training Programs

- Focused language courses combined with pedagogical training.
- Incorporate technology-based language learning platforms.

Promoting Continuous Professional Development

- Encourage teachers to participate in regular workshops and conferences.
- Support peer mentoring and collaborative language practice.

Fostering a Supportive Language Environment

- Create school policies that prioritize English use.
- Develop language clubs and extracurricular activities.

Providing Resources and Infrastructure

- Ensure access to up-to-date teaching materials and digital tools.
- Facilitate exposure to authentic English language contexts.

Conclusion

The predictors of English proficiency of teachers across diverse contexts encompass a complex interplay of personal attributes, educational achievements, professional experiences, and

environmental factors. Recognizing and addressing these predictors through strategic interventions can significantly enhance teachers' language skills, ultimately leading to improved student learning outcomes. Investing in teacher development, creating supportive environments, and fostering motivation are key steps toward elevating English proficiency among educators worldwide.

By understanding these predictors and implementing targeted strategies, educational stakeholders can effectively support teachers in achieving higher levels of English proficiency, thereby enriching language education for students across regions.

Predictors of English Proficiency of Teachers Across Diverse Contexts: An In-Depth Review

In an increasingly globalized world, the importance of English as a lingua franca cannot be overstated. The proficiency of teachers in English significantly influences language acquisition and overall educational outcomes for learners. Understanding the predictors that shape teachers' English proficiency is thus vital for policymakers, educational institutions, and teacher training programs. This article delves into the multifaceted factors that predict English proficiency among teachers across various contexts, examining individual, institutional, and contextual variables through a comprehensive, evidence-based lens.

Introduction

English proficiency among teachers is a critical determinant of effective instruction, learner motivation, and language outcomes. Despite its significance, proficiency levels vary widely among teachers across different regions, educational levels, and backgrounds. Investigating the predictors of such proficiency can inform targeted interventions, curriculum design, and professional development initiatives. This review synthesizes existing research to identify key predictors and explores how they interact within diverse educational environments.

Individual-Level Predictors of English Proficiency

At the core of English proficiency are individual characteristics and experiences. Several personal factors have been shown to influence teachers' language skills, often acting as foundational predictors.

1. Formal Education and Language Certification

Formal educational background, especially degrees in English or related fields, correlates strongly with proficiency levels. Teachers with higher academic qualifications in English or linguistics tend to demonstrate superior language skills. Additionally, the possession of recognized language certifications (e.g., TOEFL, IELTS, Cambridge CELTA) often serves as a reliable indicator of language competence.

2. Years of Experience in Teaching and in English Language Use

Experience plays a nuanced role. Teachers with extensive teaching experience, particularly in English-medium instruction, tend to develop greater fluency and accuracy over time. Moreover, exposure to English in daily professional contexts—such as reading, writing, and speaking—enhances language skills through practical application.

3. Age and Maturity

Research presents mixed findings regarding age as a predictor. Some studies suggest that older teachers, having had more exposure and opportunities to learn English, tend to have higher proficiency levels. Conversely, younger teachers may benefit from recent academic training and contemporary pedagogical approaches that emphasize language skills.

4. Motivation and Attitudes Toward English Learning

Intrinsic motivation, positive attitudes toward English, and a willingness to learn are strongly associated with higher proficiency. Teachers who view English proficiency as essential for their professional development are more likely to invest effort in improving their skills.

5. Language Aptitude and Cognitive Abilities

Individual differences in language aptitude, such as phonological memory and processing speed, influence how easily teachers acquire and retain language skills. Cognitive factors like working memory capacity also facilitate language learning.

Institutional and Structural Predictors

Beyond personal attributes, institutional factors exert considerable influence on teachers' English proficiency.

1. Access to Professional Development and Training Programs

Participation in ongoing professional development (PD) focused on language skills correlates positively with proficiency. Workshops, language courses, and peer collaboration opportunities enable teachers to refine their language abilities.

2. Quality of Teacher Education Programs

Pre-service teacher education that emphasizes English language mastery, including communicative competence and pedagogical skills, prepares teachers more effectively. Programs with a strong

emphasis on practical language use tend to produce higher proficiency levels among graduates.

3. Language Policy and Institutional Support

Supportive policies that prioritize English language development, provide resources such as teaching materials, and foster an English-rich environment contribute to enhancing teachers' proficiency.

4. Availability of Resources and Learning Materials

Access to up-to-date textbooks, multimedia tools, and language laboratories facilitates continuous learning and practice, thereby improving proficiency.

Contextual and Socio-Cultural Factors

Contextual factors, including socio-economic and cultural elements, also significantly predict teacher English proficiency.

1. Socio-Economic Status (SES)

Teachers from higher SES backgrounds often have greater access to quality education, language resources, and international exposure, which contribute to higher proficiency.

2. Exposure to English in the Community and Media

Community environments that frequently use English—such as urban settings, expatriate communities, or regions with active English media—offer informal learning opportunities that enhance proficiency.

3. Language Use Environment and Immersion Opportunities

Teachers immersed in English-speaking environments or engaged in exchange programs demonstrate higher language competence due to increased exposure and practice.

4. Cultural Attitudes Toward English and Language Learning

Cultural valuation of English influences motivation and the importance placed on achieving proficiency, thereby affecting teachers' effort and success in language acquisition.

Technological and Digital Factors

Advancements in technology have opened new avenues for language learning, impacting teachers' proficiency.

1. Utilization of Digital Language Learning Tools

Access to apps, online courses, and virtual exchange platforms provides flexible opportunities for self-directed learning, which correlates with improved proficiency.

2. Online Communities and Peer Networks

Participation in online forums, social media groups, and professional networks facilitates language practice and knowledge sharing.

3. E-learning and Blended Training Models

Institutions adopting digital training models report higher levels of teacher engagement and proficiency improvement.

Interplay of Predictors and Multilevel Influences

While individual factors are foundational, the interaction between personal, institutional, and contextual variables creates a complex landscape influencing teacher English proficiency.

- Teachers with strong motivation but limited institutional support may not achieve optimal proficiency.
- Institutional quality can compensate for certain individual disadvantages by providing targeted training.
- Socio-cultural attitudes can enhance or hinder motivation, affecting engagement in language development activities.

Understanding these multilayered interactions is crucial for designing effective strategies aimed at elevating teachers' English skills across diverse settings.

Implications for Policy and Practice

Based on the identified predictors, several recommendations emerge:

- Enhance Access to Quality Education and Certifications: Establish pathways for teachers to obtain advanced degrees and recognized language certifications.

- Prioritize Continuous Professional Development: Implement regular, contextually relevant PD programs emphasizing practical language use.
- Develop Supportive Language Policies: Create institutional policies that promote English use, resource allocation, and immersion opportunities.
- Leverage Technology: Integrate digital tools and online platforms into teacher training and ongoing development schemes.
- Foster Positive Attitudes and Motivation: Cultivate a culture that values English proficiency through recognition and incentives.

Conclusion

The predictors of English proficiency among teachers are multifaceted, encompassing personal attributes, institutional support, socio-cultural environment, and technological engagement. Recognizing and addressing these factors holistically can significantly enhance teacher language skills, ultimately benefiting learner outcomes. Future research should focus on longitudinal and cross-cultural studies to better understand causal relationships and develop tailored interventions. As English continues to serve as a vital component of global education, investing in the predictors of teacher proficiency remains a strategic priority for educational stakeholders worldwide.

QuestionAnswer What are the key predictors of English proficiency among teachers? Key predictors include teachers' level of formal education, years of teaching experience, exposure to English language environments, ongoing professional development, and access to teaching resources. How does years of teaching experience influence English proficiency in teachers? Generally, increased teaching experience correlates with higher English proficiency due to greater exposure and practice; however, continuous learning is essential to maintain and improve language skills. Does formal education level impact teachers' English proficiency? Yes, teachers with higher formal education levels, especially degrees focused on language or linguistics, tend to have better English proficiency compared to those with lower educational qualifications. What role does access to professional development play in improving teachers' English skills? Access to targeted professional development programs significantly enhances teachers' English proficiency by updating their language skills, pedagogical strategies, and confidence in teaching English. Are teachers' self-efficacy and motivation predictors of their English proficiency? Yes, teachers with higher self-efficacy and motivation are more likely to actively seek opportunities to improve their English skills, positively impacting their proficiency levels. How does exposure to English language environments affect teachers' proficiency? Regular exposure to English-speaking environments, such as through media, interactions, or immersion programs, enhances teachers' language skills and overall proficiency. What is the impact of teachers' age on their English proficiency? While age can influence language acquisition, motivation, and exposure opportunities, many studies suggest that with proper training, teachers of all ages can achieve high levels of English proficiency. How do socio-economic factors influence predictors of English proficiency among teachers? Socio-economic factors can affect access to quality education, resources, and professional development, thereby

influencing teachers' English proficiency levels. Is there a significant difference in English proficiency predictors between urban and rural teachers? Yes, urban teachers often have better access to resources, training, and exposure, which can lead to higher English proficiency compared to their rural counterparts. What are effective strategies to improve English proficiency predictors among teachers? Strategies include providing ongoing training, creating immersive language opportunities, offering access to learning resources, and fostering a supportive community for language practice.

Related keywords: English proficiency, teacher training, language assessment, teaching experience, language skills, professional development, language policies, linguistic competence, educational outcomes, teacher qualifications

REPORT LOGISTIC REGRESSION RESULTS APA

report logistic regression results apa is a critical step in presenting statistical analyses clearly and professionally, especially for research papers, theses, or reports following the American Psychological Association (APA) style guidelines. Properly reporting logistic regression results not only enhances the transparency and reproducibility of your research but also ensures that readers can interpret your findings accurately. This comprehensive guide covers the essential components, formatting standards, and best practices for reporting logistic regression results in APA style, helping researchers communicate their findings effectively.

Understanding Logistic Regression and Its Reporting Importance

What is Logistic Regression?

Logistic regression is a statistical method used to model the relationship between a binary dependent variable and one or more independent variables. Unlike linear regression, which predicts continuous outcomes, logistic regression predicts the probability of an event occurring (e.g., success/failure, yes/no).

Why Proper Reporting Matters

Accurate reporting of logistic regression results:

- Facilitates peer review and replication
- Enhances the credibility of your research
- Allows readers to understand the strength and significance of predictors

- Complies with publication standards, especially APA style

Key Components of Reporting Logistic Regression Results in APA Style

1. Introduction to the Model

Begin by briefly describing the purpose of your logistic regression analysis, including the outcome variable and predictors.

Example:

> A logistic regression was conducted to examine the predictors of smoking cessation success, with variables including age, gender, and motivation level.

2. Model Fit and Overall Significance

Report the overall model fit and whether the model significantly predicts the outcome.

- Likelihood Ratio Test: Use the chi-square statistic, degrees of freedom, and p-value.
- Model Chi-Square: Indicate the improvement over the null model.

Example:

> The model was statistically significant, $\chi^2(3) = 45.12$, p

3. Model Explanation and Pseudo R-squared

Include measures of model explanatory power:

- Pseudo R-squared: e.g., Nagelkerke R^2
- Brief interpretation of what this indicates about the model's fit.

Example:

> The model explained approximately 25% of the variance in smoking cessation success (Nagelkerke $R^2 = 0.25$).

4. Reporting Individual Predictors

For each predictor, provide:

- Odds Ratio (OR): Indicates the change in odds associated with a one-unit increase in the predictor.
- 95% Confidence Interval (CI): Shows the range within which the true OR likely falls.
- p-value: Indicates statistical significance.

Example:

> Age was a significant predictor (OR = 1.05, 95% CI [1.02, 1.08], $p = .001$), suggesting that each additional year increased the odds of cessation success by 5%.

5. Interpretation of Results

Explain what the statistical findings mean in practical terms, avoiding jargon and clearly stating the implications.

Formatting Logistic Regression Results in APA Style

1. Use of Tables and Figures

- Present detailed results in a table, titled appropriately (e.g., "Table 1").
- Include columns for predictor variables, ORs, CIs, and p-values.
- Follow APA guidelines for table formatting.

2. Narrative Reporting

- Summarize key findings within the text.
- Highlight significant predictors and overall model significance.
- Use clear, concise language.

3. Reporting Confidence Intervals and p-values

- Report p-values as "p
- Confidence intervals should be presented in brackets.

Example:

> The odds of success increased with age (OR = 1.05, 95% CI [1.02, 1.08], $p = .001$).

4. Avoiding Common Mistakes

- Do not report only p-values; include ORs and CIs.
- Avoid overly technical language; aim for clarity.
- Do not interpret non-significant predictors as important.

Sample APA-Style Report of Logistic Regression Results

> A logistic regression was performed to assess the impact of demographic and behavioral factors on smoking cessation success. The predictors included age, gender, and motivation level. The overall model was significant, $\chi^2(3) = 45.12$, p

> Among the predictors, age was a significant factor (OR = 1.05, 95% CI [1.02, 1.08], $p = .001$), suggesting that each additional year increased the odds of quitting by 5%. Motivation level was also significant (OR = 1.15, 95% CI [1.08, 1.23], p

> These findings suggest that age and motivation are important factors in predicting smoking cessation success, whereas gender does not appear to have a significant impact.

Additional Tips for Reporting Logistic Regression Results in APA Style

1. Use Clear and Consistent Terminology

- Describe predictors and outcomes precisely.
- Use "odds ratio" and abbreviate as OR after first definition.

2. Be Transparent About Model Specifications

- Specify which variables were included.
- Mention any variable transformations or interactions tested.

3. Include Assumption Checks

- Note if assumptions such as multicollinearity or outliers were examined.

4. Be Concise but Informative

- Avoid unnecessary details but include all relevant statistics.

5. Follow APA Style Guidelines

- Use italics for statistical symbols (e.g., p , χ^2).
- Present numbers in decimal format.
- Use proper punctuation and spacing.

Conclusion

Properly reporting logistic regression results in APA style is essential for effective scientific communication. By including key components such as model fit, overall significance, individual predictors with ORs and CIs, and interpretative commentary, researchers can present their findings transparently and professionally. Remember to format tables correctly, use clear language, and adhere to APA guidelines to enhance the clarity and impact of your research reports. Whether in journal articles, theses, or conference presentations, mastering the art of reporting logistic regression results in APA style will significantly improve the quality and credibility of your scientific contributions.

Keywords: report logistic regression results apa, logistic regression, APA style, statistical reporting, odds ratio, model fit, pseudo R-squared, confidence interval, significance testing

Reporting Logistic Regression Results in APA Style: A Comprehensive Guide

Accurate and transparent reporting of statistical analyses is fundamental to scientific integrity, especially in fields that rely heavily on inferential statistics such as psychology, social sciences, health sciences, and behavioral research. Among the various statistical techniques, logistic regression stands out as a powerful method for modeling binary outcome variables?outcomes that have two possible states, such as success/failure, yes/no, or disease/no disease. Properly reporting logistic regression results following the guidelines of the American Psychological Association (APA) ensures clarity, reproducibility, and credibility of research findings. This article provides a detailed, step-by-step guide to reporting logistic regression results in APA style, covering essential elements, interpretation, and common pitfalls.

Understanding Logistic Regression and Its Reporting Importance

Logistic regression is a statistical technique used to examine the relationship between one or more predictor variables (independent variables) and a binary dependent variable (outcome). Unlike linear regression, which predicts continuous outcomes, logistic regression estimates the probability that a particular event occurs, modeling this probability via the logistic function.

Proper reporting of logistic regression results serves several purposes:

- Transparency: Clearly presenting the methodology and findings allows others to evaluate the robustness of your analysis.
- Reproducibility: Detailed reporting enables other researchers to replicate your study or apply similar methods to their data.
- Interpretability: Well-structured results help readers understand the practical significance of your predictors.
- Adherence to Standards: Following APA guidelines maintains consistency and professionalism across scientific publications.

Key Elements to Report in Logistic Regression Results

When reporting logistic regression results, several components must be addressed to provide a comprehensive account of your analysis:

1. Model Specification

- Predictors and Outcomes: Clearly specify the dependent variable and the predictors included in the model.
- Coding of Variables: Describe how categorical variables are coded (e.g., dummy coding) and any transformations applied to continuous variables.
- Model Type: Indicate whether you used a standard logistic regression, hierarchical, stepwise, etc.

2. Model Fit and Overall Significance

- Model Chi-Square / Likelihood Ratio Test: Indicate whether the model significantly improves fit over a null model.
- Model Fit Indices: Report measures such as Cox & Snell R^2 , Nagelkerke R^2 , or other relevant fit statistics.
- Classification Accuracy (if applicable): Include the percentage of cases correctly classified by the model.

3. Parameter Estimates

- Regression Coefficients (B): The raw coefficients from the logistic regression output.

- Standard Errors (SE): The standard errors associated with each coefficient.
- Wald Statistic and p-values: Indicate the significance of each predictor.
- Odds Ratios (OR) and Confidence Intervals (CI): Provide ORs derived from exponentiating B, along with 95% CIs to indicate estimate precision.

4. Interpretation of Results

- Explain the meaning of significant predictors in terms of odds ratios.
- Discuss the direction and magnitude of effects.
- Highlight non-significant predictors and their implications.

Step-by-Step Approach to Reporting Logistic Regression in APA Style

Below is a detailed guide on how to structure your results section, aligning with APA style conventions.

1. Presenting Model Fit and Overall Significance

Begin with how well your model explains the data:

> "A logistic regression analysis was conducted to examine the predictors of [outcome]. The model was statistically significant, $\chi^2(df) = X.XX$, p

Example:

> "A logistic regression analysis was conducted to predict the likelihood of developing a chronic condition based on age, gender, and smoking status. The model was statistically significant, $\chi^2(3) = 45.67$, p

2. Reporting Parameter Estimates

For each predictor, report the relevant statistics in a clear, APA-compliant format:

> "The odds of [outcome] increased with [predictor], $B = 0.45$, $SE = 0.15$, $Wald = 9.00$, $p = .003$, $OR = 1.57$, 95% CI [1.16, 2.12]."

Breakdown:

- B (Coefficient): Raw logistic regression coefficient.
- SE (Standard Error): Indicates the estimate's precision.

- Wald Statistic: Tests the null hypothesis that $B = 0$.
- p-value: Significance of the predictor.
- OR (Odds Ratio): Exponentiation of B , interpretable as the change in odds for a one-unit increase in the predictor.
- 95% CI: Range within which the true OR likely falls, with 95% confidence.

Sample APA-style reporting:

> "Age was a significant predictor of the outcome, $B = 0.30$, $SE = 0.10$, $Wald = 9.00$, $p = .003$, $OR = 1.35$, 95% CI [1.11, 1.64], suggesting that each additional year of age increased the odds of [outcome] by 35%."

3. Addressing Categorical Predictors

For categorical variables, specify the reference category and interpret the OR relative to it:

> "Gender (coded as 0 = male, 1 = female) was a significant predictor, $B = 0.65$, $SE = 0.25$, $Wald = 6.76$, $p = .009$, $OR = 1.92$, 95% CI [1.18, 3.12], indicating that females had nearly twice the odds of [outcome] compared to males."

4. Discussing Non-Significant Results

It's equally important to report predictors that did not reach significance and discuss their potential implications:

> "While income level was included as a predictor, it was not significantly related to [outcome], $B = 0.12$, $SE = 0.08$, $Wald = 2.25$, $p = .134$, $OR = 1.13$, 95% CI [0.97, 1.32]."

Best Practices and Common Pitfalls

To ensure clarity and adherence to APA standards, consider the following best practices and avoid common mistakes:

Best Practices

- Use APA Style Formatting: Present statistics with appropriate decimal places (typically two or three).
- Include Confidence Intervals: ORs should always be accompanied by 95% CIs to indicate estimate precision.
- Report All Relevant Statistics: Include model fit indices, significance tests, and parameter

estimates.

- Contextualize Findings: Interpret the direction and magnitude of effects in the text, not just in tables.
- Use Clear Language: Avoid jargon; explain what the ORs mean in practical terms.

Common Pitfalls to Avoid

- Omitting Model Fit Statistics: Not reporting overall model significance undermines the analysis.
- Ignoring CIs: Failing to include confidence intervals limits interpretability.
- Overinterpreting Non-Significant Results: Avoid claiming effects where the p-value exceeds the significance threshold.
- Poor Variable Coding Explanation: Not clarifying how categorical variables are coded can lead to misinterpretation.
- Inconsistent Formatting: Ensure uniformity in presenting statistics across predictors.

Example of a Complete APA-Style Logistic Regression Result Section

In a study examining predictors of health behavior adherence, a logistic regression was performed with age, gender, and health literacy as predictors of adherence (coded as 0 = non-adherent, 1 = adherent). The model was significant, $\chi^2(3) = 52.43, p$

Age was a significant predictor, $B = 0.04, SE = 0.01, Wald = 16.00, p$

QuestionAnswer How should I report logistic regression results in APA format? In APA format, report logistic regression results by including the model summary, coefficients (odds ratios with confidence intervals), significance levels, and model fit statistics such as the Nagelkerke R^2 . For example: "A logistic regression was conducted to predict... The model was significant, $\chi^2(df) = \text{value}, p$

Related keywords: logistic regression results, APA style, reporting statistical results, regression output, results interpretation, statistical significance, odds ratios, confidence intervals, APA formatting guidelines, research reporting

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