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研究課題名(和文) Developing a diagnostic language assessment of Japanese EFL learners' English language email writing

研究課題名(英文) Developing a diagnostic language assessment of Japanese EFL learners' English language email writing

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研究成果の概要(和文)：我々は、礼儀正しさと形式的な表現に焦点を当てた、英語のEメールライティングのコンピュータによる評価を開発した。このアセスメントでは、Eメールの問題点を自動的に特定し、即座にフィードバックを行い、学習者はそれを使ってEメールを改善することができます。フィードバックは、最初は非常に暗黙的なものですが、それで学習者が問題を解決できない場合は、問題が解決するまで、フィードバックはより明示的になります。このように、このプログラムは学習者の成長を促すと同時に、頻度と明確さを分析することで評価を行うことができます。私たちは、このシステムが学習者のパフォーマンスを促進するのに有効であることを発見しました。

研究成果の学術的意義や社会的意義

私たちは、知識に対していくつかの貢献をしています。我々は、英語学習者の電子メール文章を対象とした初のコンピュータによる言語診断アセスメントを開発し、フィードバックに発達段階に基づいたアプローチを採用した初のアセスメントを開発した。このプログラムを実施したところ、学習者の文章に含まれる礼儀正しさや形式に関する問題が大幅に減少し、この改善が長期にわたって持続することがわかりました。また、多肢選択式テストのような個別の間接的なテスト項目で評価を行うのではなく、全文を評価するプログラムを初めて開発し、技術を進歩させました。

研究成果の概要(英文)：In this research project, we developed a new kind of assessment for English email writing, focusing on politeness and formality. The developed computerised assessment automatically identifies problems in the learner's email texts, offers immediate feedback, which the learner uses to improve their email text. The innovative system uses an approach grounded in sociocultural theory. Feedback is initially highly implicit; if that fails to help the learner resolve the problem, feedback gradually becomes more explicit, until the problem is resolved. In this way, the programme both promotes learner development, and allows for assessment as well, as we can look at the frequency of feedback, and how explicit the feedback needed to be. We found the system to be effective in leading to sustained improvement in learner performance across time.

研究分野：Second language acquisition

キーワード：pragmatics language assessment sociocultural theory email writing language acquisition

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1. 研究開始当初の背景

Background at beginning of study

Traditional language assessment focuses on scoring overall learner ability, without analyzing specific strengths and weaknesses, and so may not be helpful to teachers or students [1]. This issue is addressed with recent *diagnostic language assessment* (DLA) methods that implement a 3-stage process: 1) *administration of the assessment*; 2) *provision of feedback to learners*, and 3) *further individualized instruction* based on the assessment results. Thus, the purpose of a DLA is to assess learners' strengths and weaknesses, and provide tasks to help them improve. Practical DLA implementation faces three key challenges: 1) designing DLAs suitable for different learner skills; 2) identification of the most effective types of feedback for learners [2]; and 3) efficient DLA administration [3]. One possible way to achieve efficiency is through computerization; however, typically this has meant learners receive only generic, rather than individualized, feedback [4].

A University of Aizu faculty survey has identified English e-mail writing as a key task students should be able to perform [5]. This skill can also be beneficial for their future careers in a globalizing world. However, many students struggle with email writing. While there are now various tools available that can help learners with grammatical difficulties (such as Grammarly or Google translate), there is little help available for the *pragmatic* aspect of email communication- understanding how the social context of the communication can affect language choices when composing an e-mail (such as levels of politeness and formality). This is a key difficulty for learners.

2. 研究の目的

Research purpose

We suggest focusing on two elements of this problem: 1) *identifying* precisely which pragmatic aspects of email writing learners find problematic; and 2) *helping* the learners improve their performance. Within the context of classes with large enrollments, the only feasible way to provide assessment and feedback is to implement a computerized DLA system; further, it should be able to provide individualized, specific feedback. However, little research has been done on developing a DLA of email writing skills that can help address problems students have with adapting their language to suit different social situations.

There are three goals of this project: i) Developing and administering a computerized DLA of learners' English email writing; ii) Evaluating the effectiveness of different types of feedback in the DLA; and iii) Creating instructional materials and integrating them with the DLA system.

3. 研究の方法

Research methods

The phases of the project are shown in Fig. 1.

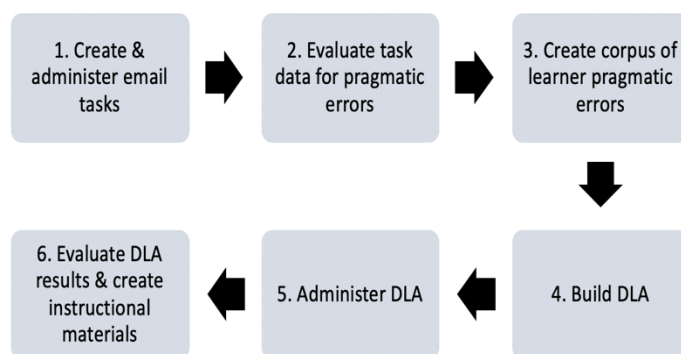


Figure 1: Project phases, from task development to programme evaluation

In the first phase, we initially create a set of email tasks to elicit email data from L2 English learners, the analysis of which informed C-DLA development. To create the tasks, we administered a questionnaire to learners, asking them to identify common requesting situations in their daily and academic lives. Results were ranked by frequency, and the most frequent scenarios served as templates for task creation. A set of email task scenarios were then created by the researchers. Each task was assigned either a “+” or “-” value relating to three contextual variables – Power (P), Social distance (D), and Rank of imposition (R) [6].

A set of four tasks were then administered to 426 participants via Google Forms, with the text data then manually annotated by expert English users for specific instances of perceived pragmatic failure. The annotators were trained and benchmarked, and 10% of the data were annotated by multiple annotators to ensure inter-annotator reliability. Analysis of the annotated data allowed the researchers to identify high-frequency types of pragmatic failure, which then informed C-DLA development.

Phase four: C-DLA development

The purpose of the C-DLA programme is to administer a set of email tasks to learners, check the email texts for instances of pragmatic failure, and offer immediate feedback that is sensitive to the developmental needs of each individual learner. To this end, we employed a *sociocultural* approach to feedback, in which four levels of feedback can be provided. Initially, highly implicit feedback is initially provided. If this does not help the learner to successfully resolve the problem, feedback becomes more explicit, until the learner can resolve the issue and proceed with the task. In this way, feedback is sensitive to a learner’s *zone of proximal development* [7]. See Fig. 2 for a visualization of how the programme administers the email task to users, and Fig. 3 for an example screenshot of the feedback users receive after submitting an email text.

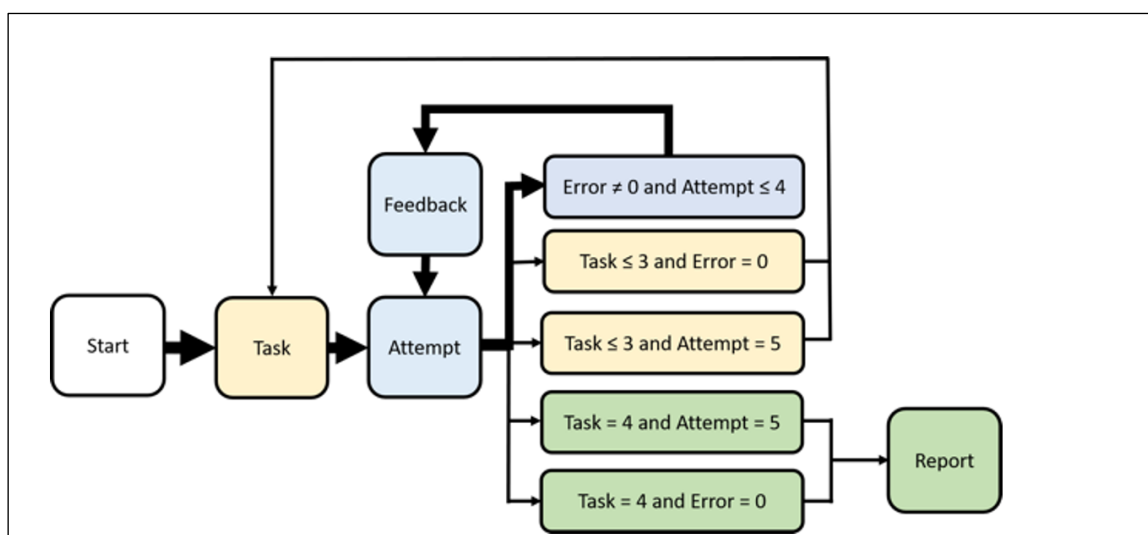


Figure 2: Diagrammatic representation of C-DLA task procedure for a user

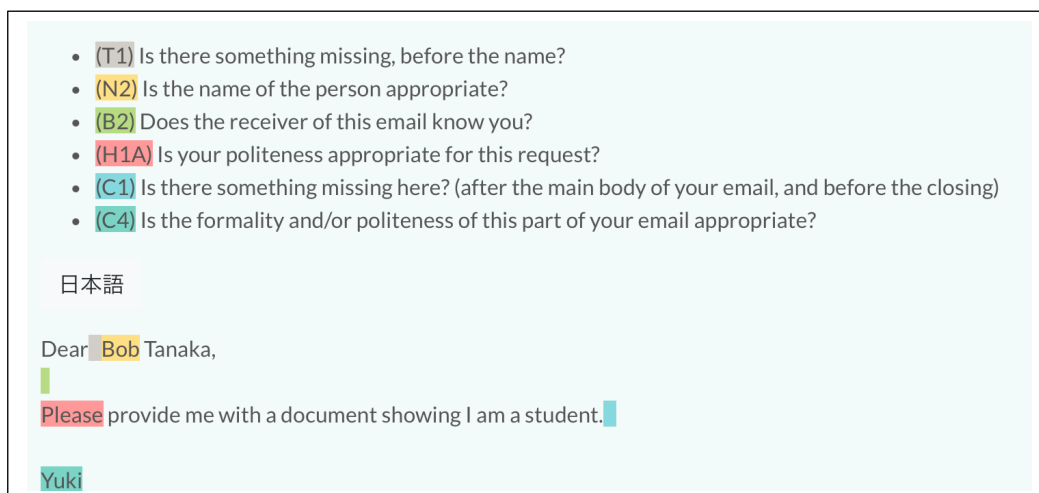


Figure 3: Example screenshot showing automated feedback provided to a learner, based on a submitted email text draft.

In creating the C-DLA, we initially consulted with stakeholders to refine use requirements and use case scenarios. We then created an initial prototype for usability testing. The software uses natural language processing technology for automatic detection of learner pragmatic failure and generating feedback. The initial prototype then underwent multiple rounds of testing and refining, until the accuracy rate for failure detection was sufficiently high to be useful.

Phase five – C-DLA administration

In order to assess the effectiveness of different types of feedback, three different versions of the programme were administered to three groups of participants. The experimental group received the full, 4-level feedback version of the C-DLA; a second group received the final level 4, highly explicit feedback only, and a third control group completed the email tasks, but received no feedback. Figure 4 shows the timeline for this phase of the study. A two-week delay was carried out between two rounds of administration, to investigate the extent to which any pragmatic development among participants was sustained across time.

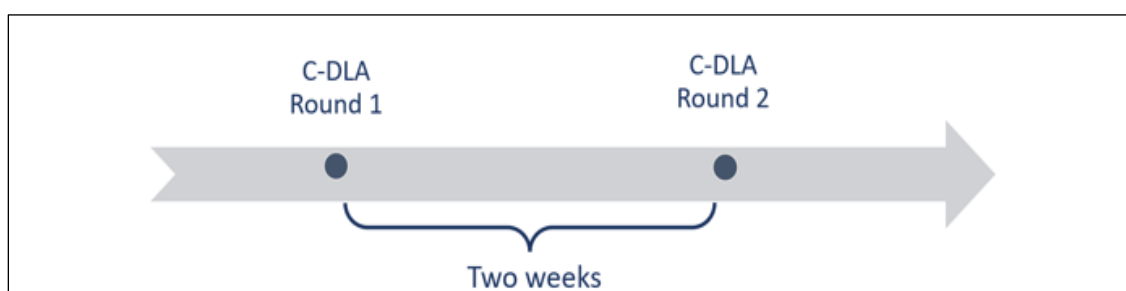


Figure 4: C-DLA administration stages and timeline.

4. 研究成果

Research results

We discuss results in relation to the two main phases of the study – email corpus creation and analysis, and C-DLA task administration and evaluation of feedback effectiveness.

Email corpus analysis

We analysed the created corpus of Japanese university English L2 learners’ request-based email writing for specific instances of perceived pragmatic failure, as identified by expert English users who were relevant members of the local community.

Employing a coding scheme specifically created for analysis of learner email texts for types of pragmatic failure, we found high frequencies of failure across both framing moves in emails (the openings and closings), and content moves as well (within the request head act).

In terms of openings, across all four email tasks administered to the participants, there were high levels of failure in relation to greetings and names. This was the case in all scenarios, whether formal or informal in nature. In terms of closings, we also saw high frequencies of failure, with the absence of pre-closings (“I look forward to hearing from you...” for example) and the absence of closings highly frequent, across all four email tasks.

In terms of content moves, we see high frequencies of inappropriate use of imperatives in the request head act; we also high frequencies of other, relatively direct formulations, such as the use of “want” statements. Evidence was found that the participants struggled to adapt their language choices to different social contexts.

C-DLA feedback evaluation

By looking at the frequency of instances of pragmatic failure within and between rounds of administration, and the level of explicitness of feedback required to resolve problems within and between rounds of administration, we were able to evaluate the effectiveness of the graduated prompt approach to feedback, the explicit only approach, and the control group as well.

We found the graduated prompt approach to lead to significantly fewer instances of failure when comparing later tasks in a round with earlier ones, and also significantly fewer instances of failure in the second round of administration in comparison with the earlier round. This was the case for all categories of failure, including openings, closings, and content moves within the head act.

Comparing the groups, both the experimental and explicit-only groups saw a reduction in the frequency of failure in later tasks of a round, and in the later round of administration of tasks as well. While both saw an improvement, however, the experimental group such a greater reduction in failure than the explicit-only group. Both groups began with a similar level of failure frequency at the beginning of the round 1 administration; the experimental group, however, saw a greater reduction in failure than the explicit-only group. The control group, however, did not see a significant reduction in failure either within or between rounds.

These results suggest that both the sociocultural and explicit-only approach feedback were effective, but the sociocultural approach saw greater benefits. This has implications for the L2 language classroom, and provides evidence to support the employment of developmentally-sensitive feedback to learners. It also provides support for the use of technology in the classroom to provide individualized feedback to large groups of learners at the same time.

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5. 主な発表論文等

〔雑誌論文〕 計6件（うち査読付論文 6件/うち国際共著 5件/うちオープンアクセス 0件）

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3. 雑誌名 The JACET International Convention Proceedings: The JACET 60th Commemorative International Convention	6. 最初と最後の頁 115-116
掲載論文のDOI（デジタルオブジェクト識別子） なし	査読の有無 有
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〔図書〕 計0件

〔産業財産権〕

〔その他〕

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6. 研究組織

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7. 科研費を使用して開催した国際研究集会

〔国際研究集会〕 計0件

8. 本研究に関連して実施した国際共同研究の実施状況

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