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Teaching for transfer of second language learning: A proposed research agenda

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Abstract

Students' learning transfer is a fundamental goal across contexts of second language (L2) teaching and is therefore a worthwhile topic for L2 teaching research. Building on trends in research on teaching for transfer in L2 education and in other education and training contexts, this article proposes an agenda for future research on teaching for transfer of L2 learning. This includes a description of six specific research tasks and research designs that could be used with these tasks. The six tasks are to investigate: (1) the relationship between L2 teaching and transfer distance, (2) the relationship between L2 learners' transfer motivation and learning transfer, (3) the impact of L2 teaching on learners' transfer motivation, (4) the relationship between transfer climate and L2 learning transfer, (5) the impact of L2 teaching on learners' ability to deal with unsupportive transfer climates, and (6) L2 learners' transfer preparedness and its relationship with learning transfer.

1. Introduction

In this article, I propose an agenda for research on teaching for transfer of second language (L2) learning. Learning transfer is a fundamental goal of L2 teaching: learning transfer occurs "when learning in one context or with one set of materials impacts on performance in another context or with another set of materials" (Perkins & Salomon, 1994, pp. 6452), and if L2 learning does not transfer beyond the L2 teaching context, the value of L2 teaching is questionable. Because it is a fundamental goal of L2 teaching, learning transfer is a particularly important topic for L2 teaching research; this is reflected in the attention learning transfer has received in discussions of L2 teaching (Brown & Lee, 2015; Larsen-Freeman, 2013; Lightbown, 2008; Long, 2015) and in empirical research on L2 teaching (e.g., Almuhanna, 2022; Benson, 2016; Green, 2015; Ha & Vanaphuti, 2022; Haghighi et al., 2019; Hill et al., 2020; Jeon, 2022, 2024; Jwa, 2019; Law & Fong, 2020; Lee, 2022; Shrestha, 2017; VanPatten & Uludag, 2011; Wilson & Soblo, 2020; Zarei & Rahimi, 2014).

Further research on learning transfer in L2 teaching is needed, and this research agenda points in directions that I think would be particularly worthwhile. I have worked extensively on this topic in my own research (e.g., James, 2006, 2010, 2012, 2014, 2020, 2023) and have paid close attention to the broader collection of scholarly work on this topic. This scholarly work has covered much ground, investigating what L2 learning transfers (e.g., an ability to use grammar and vocabulary appropriately (Law & Fong, 2020), an ability to write cohesively (Hill et al., 2020)), where and when L2 learning transfers (e.g., across academic tasks and disciplines (Zarei & Rahimi, 2014)), how L2 learning transfers (e.g., through manipulation (Jwa, 2019) or adaptation (Wilson & Soblo, 2020) of what was learned), and how L2 teaching promotes transfer (e.g., by resembling target situations (Green, 2015; James, 2006), by having students think and learn abstractly and make connections to target situations

(Green, 2015), by involving collaboration between teachers (Haghighi et al., 2019), and by using jour-nalogs (Currie, 1999), dynamic assessment (Shrestha, 2017), processing instruction (VanPatten & Uludag, 2011), or genre- (Cheng, 2007), task- (Benson, 2016), or content-based instruction (James, 2006)). These are key questions and the research findings have been illuminating and valuable. However, given the importance of learning transfer in L2 teaching and the limited range of contexts in which research has been conducted (e.g., mainly in secondary school, college, and university con-texts, with little attention to other contexts such as elementary schools and workplace training pro-grams), more research is needed, and there are plenty of worthwhile directions in which this research could be taken.

This agenda consists of a collection of specific research tasks worth prioritizing in the near future for scholarly work on this topic. From my perspective, research tasks that are relatively practical would be most helpful. While learning transfer can be studied for purely academic reasons—for example, to further knowledge of human cognition—my own interest in studying learning transfer is mainly from the perspective of education; as a result, research tasks that seem most worthwhile to me are ones that are clearly relevant to curriculum, teaching, and learning in L2 education contexts. These are tasks that I look forward to working on myself and that I hope will also be taken on by other researchers and educators who are interested in teaching for transfer of L2 learning. In particular, I hope this agenda will be helpful to researchers and educators who are new to this topic, such as graduate students who are looking for potential topics to study or who have decided to carry out research on learning transfer in L2 education and want to make sure their studies will be viewed as worthwhile. Of course, the research tasks listed below are not necessarily the only important research tasks related to this topic; nevertheless, research that helps to accomplish any of these tasks would, from my perspective, be valuable.

2. Research task 1: Investigate the relationship between L2 teaching and transfer distance

While learning transfer is a fundamental goal of L2 teaching, this goal can vary in terms of expected transfer distance. Transfer distance refers to the difference between learning and transfer activities, and Barnett and Ceci (2002) suggested that transfer distance has six dimensions: the degree to which learn-ing and transfer activities (a) deal with different topics—for example, biology versus economics (i.e., knowledge domain), (b) are in different locations—for example, at school versus at home (i.e., physical context), (c) occur at different times—for example, months apart (i.e., temporal context), (d) have dif-ferent purposes—for example, to get grades versus to make friends (i.e., functional context), (e) have different requirements for interaction—for example, collaborative versus individual (i.e., social con-text), and (f) have different formats—for example, listening and answering multiple-choice questions versus reading and answering essay questions (i.e., modality). These dimensions are independent; for example, learning and transfer activities could differ on any one of the dimensions or on any combin-ation of dimensions (i.e., any two, three, four, or five of the dimensions, or all six of the dimensions). Across L2 education contexts, the distance that learning is expected to transfer can vary, for example:

- A L2 may be taught for occupational purposes in a workplace training context (e.g., classes on giving technical presentations in English, provided on-site at an oil and gas company in Riyadh for the Saudi engineering staff), with the expectation that learning will transfer immediately to a narrow range of clearly-defined job activities (i.e., giving technical presentations to supervisors and clients). Here, learning needs to transfer small distances, for example in terms of topic (i.e., L2 classes and learners' on-the-job presentations deal with technical topics), location (i.e., L2 classes are in the same place as the learners' jobs), and time (i.e., immediately).
- A L2 may be taught for academic purposes in an academic institution (e.g., a Korean-for-academic-purposes course for international undergraduate students at a university in Seoul), with the expectation that learning will transfer to a broad range of activities that the student will have to do in courses across a variety of disciplines throughout a degree program.

Here, learning needs to transfer larger distances, for example to a course in a student's major area of study (i.e., learning and transfer activities deal with different topics) taught several semesters later (i.e., learning and transfer activities are at different times) in another campus building (i.e., learning and transfer activities are in different locations).

- A L2 may be taught for a general or unspecified purpose (e.g., French classes at a secondary school in Toronto), with the expectation that learning will transfer to any future L2 activity in any context (e.g., at work, at home, for recreation). Here, learning needs to transfer even larger distances, for example in terms of topic (i.e., dealing with topics that are very different from those in the French classes), location (i.e., remote from the secondary school), and time (i.e., long after the learner has graduated from secondary school).

To address different transfer distance expectations, different ways of L2 teaching may be needed. For example, Perkins and Salomon (1988) pointed out that different ways of teaching can promote different kinds of transfer. If teachers create learning activities that resemble situations beyond the classroom (e.g., role-play or simulation activities), this can promote low-road transfer, which is the automatic transfer of well-practiced habits and which is triggered by contextual similarities. On the other hand, if teachers create learning activities that involve abstract thinking and connection making (e.g., students examine a collection of texts to try to identify patterns in the texts' structure and then think about where those patterns might be seen beyond the classroom), this can promote high-road transfer, which is the deliberate transfer of general concepts and which does not rely on contextual similarities. Because low-road transfer is triggered by contextual similarities, its distance can be relatively limited; in contrast, high-road transfer is not limited in this way because it does not rely on contextual similarities. Therefore, if learning is expected to transfer large distances, teaching that will bring about only low-road transfer may be insufficient. From this perspective, transfer distance expectations are an important consideration when making decisions about how to teach for transfer in L2 education.

However, it is not always clear what teaching is needed to promote transfer over particular distances. Outside L2 education, Barnett and Ceci (2002) analyzed a collection of 14 studies in which teaching had promoted learning transfer, and in all of the studies the distance was small on at least three of the six dimensions of transfer distance. In other words, these studies showed that the teaching was effective in promoting transfer over relatively small distances, leaving uncertainty about whether the teaching would promote transfer over larger distances (e.g., situations where learning and transfer activities were different on four or more dimensions). In L2 education, research suggests that teaching can promote transfer over different distances: in some studies, L2 teaching promoted transfer over small distances in terms of knowledge domain (e.g., transfer from engineering-specific L2 courses to other engineering courses (Hill et al., 2020; James, 2006)), temporal context (e.g., gaps between learning and transfer activities of a few minutes (Benson, 2016) or a few days (VanPatten & Uludag, 2011)), or physical context (e.g., transfer occurring within a single course (Cheng, 2007; Yayli, 2011) or within a two-part series of courses (Wilson & Soblo, 2020)); in other studies, L2 teaching promoted transfer over larger distances in terms of knowledge domain (e.g., transfer from general academic purposes L2 courses to other courses across a wide range of disciplines (Zarei & Rahimi, 2014)), temporal context (e.g., gaps between L2 learning and transfer activities of a semester (Wilson & Soblo, 2020), or two years (Jwa, 2019)), or physical context (e.g., transfer from a L2 class to a meeting of an academic club (Haghighi et al., 2019)). However, reviews of research in branches of L2 education (i.e., English-for-academic-purposes (EAP) education (James, 2014) and L2 writing education (James, 2020)) showed that it is unclear what kind of teaching is needed to bring about transfer over some distances, for example distances that are large on three or more dimensions simultaneously (e.g., learning is expected to transfer from personal writing in a university L2 writing course to business writing (i.e., far knowledge domain) in a job (i.e., far functional context) in a new place (i.e., far physical context) after graduation (i.e., far temporal context)).

To provide a more complete picture of the kinds of L2 teaching needed to address varying transfer distance expectations in L2 education, research that focuses on the relationship between L2 teaching and transfer distance would be useful. For example, in studies that investigate the impact of L2 teaching on transfer, the transfer distance(s) could be specified on the multiple dimensions of the Barnett and Ceci (2002) framework. This could involve considering the following questions:

- In this L2 education context, what distance(s) is learning expected to transfer? For instance, where and when does the curriculum indicate learning should transfer in terms of knowledge domain (e.g., to a target context where communication topics will be in the same discipline as those in the L2 course (e.g., both focusing on biology), in a related discipline (e.g., biology in the L2 course, and chemistry in the target context), or in a more distant discipline (e.g., biology in the L2 course, and fine arts in the target context)), temporal context (e.g., immediately, months later, or years later), and so on?
- Is the investigation searching for transfer at the expected distance(s)? For instance, if the investigation involves surveying L2 learners, are they being asked to report on the expected transfer distance(s)? Or, if the investigation involves gathering L2 learner performance data, do the performance tasks involve the expected transfer distance(s)?
- If transfer is detected, is it at the expected distance(s)? Based on the evidence gathered, did learning transfer the expected distance(s) in terms of knowledge domain, temporal context, and so on?

Such research could involve different approaches. First, experimental approaches allow for manipulation of learning and transfer activities, giving the researcher substantial control over transfer distance; although this control can diminish over large periods of time (e.g., in experimental studies of large transfer distances in terms of temporal context), experimental approaches can be effective for illuminating transfer distance because of the precision they allow. For example, Lee's (2022) experimental study investigated the impact of teaching on transfer of listening ability in secondary school English-as-a-foreign-language (EFL) education in South Korea. Regarding expected transfer distance, the curriculum stated that teaching should prepare students to communicate beyond the L2 classroom; Lee interpreted this as meaning learning was expected to transfer to situations that were authentic and that would involve listening to a wide range of English accents. To focus precisely on transfer distance, Lee viewed authenticity and accent as aspects of the modality dimension of transfer distance (Barnett & Ceci, 2002). In other words, learning and transfer tasks may have similar degrees of authenticity (i.e., small transfer distance) or different degrees of authenticity (i.e., larger transfer distance), and may involve the same accents (i.e., small transfer distance) or different accents (i.e., larger transfer distance). In Lee's (2022) experiment, students did learning activities that were inauthentic (i.e., the listening recordings had been created specifically for teaching English) and that included a variety of English accents. The students were then tested on (a) activities that were inauthentic and involved the same accents as the learning materials (i.e., small transfer distance), (b) activities that were inauthentic and involved different accents from the learning materials (i.e., larger transfer distance), and (c) activities that were authentic (i.e., the listening recordings had not been created specifically for teaching English) and involved different accents from the learning materials (i.e., even larger transfer distance). Results showed that learning transferred to all of these activities. Therefore, the experimental design made it possible to see that teaching brought about transfer not only over small distances but also over larger distances, specifically in terms of modality. Similar experimental approaches could be used to examine the impact of L2 teaching on transfer over various other distances as well.

Other approaches too could be used to examine the relationship between L2 teaching and transfer distance. For example, transfer from EAP courses has often been investigated by having students complete survey questionnaires (e.g., Law & Fong, 2020) and by interviewing students and observing their performance (e.g., gathering writing samples from their other courses) (e.g., Hill et al., 2020), and could be investigated with an even wider range of approaches (e.g., having students do in-class

activities that involve discussing where they think they can transfer learning, having students use diaries to document instances of transfer, interviewing teachers about evidence they might have of students' transfer). With any of these approaches, there can be a focus on transfer distance. For instance, in an EAP education context where learning is expected to transfer over relatively large distances in terms of knowledge domain (e.g., to other courses on different topics), physical context (e.g., to courses taught by other teachers, with other students, in other classrooms and buildings), and temporal context (e.g., to other courses months or years after the EAP course), students could be asked in interviews or questionnaires about transfer over those distances, and student performance could be observed at those distances.

3. Research task 2: Investigate the relationship between L2 learners' transfer motivation and learning transfer

In research on learning transfer outside L2 education, substantial attention has been paid to transfer motivation. Transfer motivation has been defined as involving one or more of the following: a desire to transfer (Gegenfurtner, 2013; Hutchins et al., 2013; Massenberg et al., 2017; Noe, 1986), an effort to transfer (Bates et al., 2007; Devos et al., 2007; Yaghi et al., 2008), and an intention to transfer (Foxon, 1993; Gegenfurtner, 2013; Seyler et al., 1998). Empirical research has linked transfer motivation to transfer (Axtell et al., 1997; Chiaburu & Lindsay, 2008; Kiwanuka et al., 2020; Liebermann & Hoffmann, 2008; Machin & Fogarty, 1997; Muthoni & Miiro, 2017; Nijman et al., 2006; Twase et al., 2022). Conducting a meta-analysis of 89 studies of learning transfer, Blume et al. (2010) found that this relationship was small to moderate. This relationship was examined also by Pugh and Bergin (2006), whose research review showed that transfer is impacted by multiple motivation-related constructs (i.e., goals, interest, self-efficacy, and intention) in multiple ways (i.e., by influencing initial learning, initiation of transfer attempts, and persistence on transfer tasks). In Haskell's (2001) general theory of transfer, motivation is a central component: motivation is part of a spirit of transfer, and Haskell argues that "without the transfer 'spirit', there is precious little transfer" (p. 116).

In research on learning transfer in L2 education, little attention has been paid to transfer motivation. There has been much work on motivation in L2 education (e.g., Dörnyei, 2020), but the focus has been on motivation to learn a L2 rather than motivation to transfer L2 learning. One study that did focus on L2 transfer motivation (James, 2012) showed that in an EAP education context transfer motivation was limited and was influenced by various factors, in particular by students' perceptions of whether they had learned anything in the EAP course and whether they had had opportunities to transfer that learning in other courses, students' expectations of whether transfer would have any impact in their other courses, and students' beliefs about transfer (i.e., whether learning should lead to transfer, and whether transfer should be automatic rather than deliberate). Given the importance placed on transfer motivation in transfer research elsewhere, and given that in some contexts students may feel forced to take L2 courses because the courses are graduation requirements, transfer motivation deserves more attention in L2 education.

This could involve efforts to investigate the relationship between transfer motivation and transfer of L2 learning and could be approached from different angles. First, the focus could be the relationship between transfer motivation and transfer of different L2 learning outcomes. Learning outcomes targeted in L2 education contexts vary and can include, for example, abilities to use grammatical and lexical knowledge, micro- and macro-skills of listening, speaking, reading, and writing (e.g., identifying or producing sounds, identifying or expressing main ideas), communication strategies (e.g., asking for clarification), and learning strategies (e.g., planning, reflecting). Second, the focus could be the relationship between transfer motivation and transfer of L2 learning across different distances. As mentioned in task 1, expected transfer distances vary across L2 education contexts. The degree to which transfer motivation could influence transfer of particular L2 learning outcomes and transfer over particular distances is unclear, and this information would be valuable in L2 education contexts where similar learning outcomes are targeted and similar transfer distances are expected.

The relationship between transfer motivation and transfer of L2 learning could be investigated using a primarily qualitative approach. For example, interviews could be conducted with L2 students, individually or in groups, focusing on the students' perceptions of whether they have transferred learning from the L2 course and why. Thematic analysis of interview transcripts could identify students' reasons for transferring learning. If these reasons reflect transfer motivation, this could be taken as evidence of a relationship between transfer motivation and transfer of L2 learning.

This relationship could also be investigated using a primarily quantitative approach. This has been common in research on transfer motivation outside L2 education, where data have often been gathered using questionnaires. For research in L2 education contexts, a questionnaire would have to be adopted or adapted from existing research outside L2 education or created. The questionnaire would be for L2 learners and would measure their transfer motivation and their perceived transfer of learning outcomes that are targeted in that L2 education context. For example, transfer motivation has been measured in workplace training contexts with questionnaire items like "I will try to use the training content in my workplace" (Gegenfurtner, 2013, p. 195) and "I cannot wait to apply the learned training content in my work after the training" (Govaerts et al., 2018, p. 275); similarly, perceived transfer has been measured in workplace training contexts with questionnaire items like "I use the abilities and skills learned in the training in my daily work" (Massenberg et al., 2015, p. 168) and in an L2 education context with items like "[i]n other courses, I use what I have learnt in English to take care to use correct grammar and spelling" (Green, 2015, p. 11). Once questionnaire data have been gathered, the existence, direction, and strength of any relationships could be determined through statistical analyses: this could involve, for example, conducting correlation analyses (e.g., calculating Pearson or Spearman's correlation coefficients depending on which test's assumptions are met by the gathered data) to determine the degree to which transfer motivation and transfer of L2 learning are related, regression analyses (e.g., using simple linear regression or multiple regression depending on the number of variables being considered) to determine the degree to which transfer of L2 learning can be predicted by transfer motivation, or more advanced analyses (e.g., structural equation modeling, multilevel modeling, growth curve analysis) that could involve additional dependent variables, multiple levels of variables, and changes over time.

An important limitation of an approach that relies exclusively on interviews and/or questionnaires is the focus on perceived transfer of L2 learning. As Perkins and Salomon (1988) pointed out, one of the main ways that learning can transfer is automatically, triggered by similarities between learning and transfer contexts (i.e., low road transfer). Since this transfer is automatic, it can occur without learners being aware of it. Such transfer would be missed in investigations that focus only on perceived transfer.

Therefore, another approach could also be used for measuring transfer of L2 learning: observation. If the focus is on transfer of learning from a particular L2 course, student performance could be observed at the beginning of and then later in the course to determine what learning has occurred; student performance beyond the L2 course could then be observed and examined for evidence of transfer. For example, if the course focus is L2 writing, observations could be made of students' performance on an out-of-class writing task created for the research or on writing assignments the students have done in other courses (e.g., Hill et al., 2020), and if the course focus is L2 listening, observations could be made of students' performance on a listening task (e.g., Benson, 2016; Lee, 2022). This observational data could then be analyzed with questionnaire data on transfer motivation, using statistical procedures (e.g., correlation analysis, regression analysis, structural equation modeling) that could reveal any relationship between transfer motivation and transfer of L2 learning.

Finally, these qualitative and quantitative approaches could be combined. For example, a study could gather data on transfer motivation through student interviews and a questionnaire, and gather data on transfer of L2 learning through student interviews, observations, and a questionnaire. Although more complex, a potential benefit of such a mixed-methods approach is that examining the relationship between transfer motivation and transfer of L2 learning from multiple perspectives could add strength to the study's findings.

4. Research task 3: Investigate the impact of L2 teaching on learners' transfer motivation

Assuming there is some kind of relationship between L2 learners' transfer motivation and learning transfer (see task 2 above), it would be worth investigating how L2 learners' transfer motivation might be impacted by L2 teaching. In research outside L2 education, primarily in workplace training contexts, findings suggest that teaching can impact transfer motivation (e.g., Grohmann et al., 2014; Hutchins et al., 2013; Joo et al., 2014; Massenberg et al., 2017; Peters et al., 2012; Rangel et al., 2015; Vignoli et al., 2018). For example, Machin and Fogarty (2003) investigated transfer motivation among police officers in Australia who were receiving computer training. The researchers found that transfer motivation was impacted by teaching that involved creating similarity between learning and transfer contexts (i.e., fidelity), having students practice in the same way repeatedly (i.e., overlearning), having learners practice with a variety of examples in a variety of conditions (i.e., varied practice), and teaching general principles rather than just specific knowledge and skills (i.e., principles-meaningfulness). Reviewing such research on transfer motivation, one of the main conclusions drawn by Gegenfurtner et al. (2009) was that teaching can shape learners' transfer motivation.

The impact of L2 teaching on learners' transfer motivation is unclear. Research has investigated the impact of L2 teaching from a transfer perspective; however, the focus has been on actual transfer rather than transfer motivation (Benson, 2016; Cheng, 2007; Currie, 1999; Green, 2015; Haghighi et al., 2019; Hill et al., 2020; James, 2006; Jwa, 2019; Law & Fong, 2020; Shrestha, 2017; Wilson & Soblo, 2020; Yayli, 2011). Furthermore, research has investigated the impact of L2 teaching on motivation; however, the focus has been motivation to learn rather than motivation to transfer learning (Bernaus & Gardner, 2008; Dörnyei & Csizér, 1998; Guilloteaux, 2013; Guilloteaux & Dörnyei, 2008; Papi & Abdollahzadeh, 2012; Vlaeva & Dörnyei, 2021).

This research gap is important because L2 learners' transfer motivation can be low. The study by James (2012) (see task 2) focused on 40 learners in an EAP course at a university in the USA. Despite there being immediate opportunities for transfer, transfer motivation was limited. Furthermore, in a study of 26 EAP instructors at a university and community colleges in the USA (James, 2023), one of the most common challenges instructors reported facing when teaching for transfer was learners' limited motivation to learn and transfer learning from EAP courses. In L2 education contexts where learners' transfer motivation is limited, educators could find it helpful to try to increase that motivation; however, because the impact of L2 teaching on learners' transfer motivation has not been investigated, it is unclear what steps educators should take.

Investigations of the impact of L2 teaching on learners' transfer motivation could be approached in several ways; as with previous tasks, this includes qualitative and quantitative approaches, and these could be used independently or in combination (i.e., mixed-methods studies). A primarily qualitative approach could involve interviews with L2 students, individually or in groups. Interview questions could deal with the degree to which the students are motivated to transfer learning from the L2 course and why, and interview transcripts could then be analyzed thematically, with a focus on the students' explanations for their motivation. In these explanations, mention of aspects of L2 teaching could be viewed as evidence that L2 teaching has an impact on transfer motivation.

On the other hand, a primarily quantitative approach could also be used. This could involve a questionnaire survey which, as with task 2, would be either adopted or adapted from existing research or created. The questionnaire would measure L2 learners' transfer motivation and their perceptions of L2 teaching. Example items for measuring transfer motivation are described in task 2, and example items for measuring learners' perceptions of teaching include the following:

- Machin and Fogarty (2003, p. 60) measured fidelity with items like "[t]he problems we learned to solve during training are similar to those on the job", overlearning with items like "[d]uring training, we practiced using the skills taught to us over and over", varied practice with items like "[d]uring training, the instructors gave us a lot of different problems to work on", and principles-meaningfulness with items like "[d]uring training, the instructors never told us why, just what to do".

- Green (2015, p. 11) measured students' perceptions of whether learning activities resemble situations beyond the classroom (see task 1 above) with items like "[t]he course materials and assignments in English are similar to those in other courses", and students' perceptions of whether learning activities involve abstract thinking and connection making (see task 1 above) with items like "[m]y [English] teachers encourage me to think about how principles, rules and ideas that I have learnt in [my English course] can be applied to my other courses".

Statistical analyses could then be conducted to reveal any impact of L2 teaching on learners' transfer motivation. This could be done using simple linear regression analysis, which would focus on the impact of one independent variable (i.e., L2 teaching) on one dependent variable (i.e., transfer motivation), or multiple regression analysis, which would focus on the impact of multiple independent variables (e.g., L2 teaching as well as other factors that could influence transfer motivation, such as learners' experience) on the dependent variable transfer motivation. Alternatively, the relationship between L2 teaching and transfer motivation could be examined as part of a more complex analysis involving multiple dependent variables, levels of variables, or changes over time, using a more advanced technique (e.g., structural equation modeling, multilevel modeling, growth curve analysis).

Reliance on only student questionnaires could be a limitation because students may not be aware of strategies that a teacher uses. Therefore, another approach could be to examine L2 teaching through observation. In research on the impact of L2 teaching on motivation to learn, L2 teaching has been observed using a classroom observation scheme (i.e., the Motivational Orientation of Language Teaching (MOLT)) (Guilloteaux & Dörnyei, 2008; Papi & Abdollahzadeh, 2012). A similar observation scheme could be developed to focus on teaching strategies that might influence transfer motivation (e.g., James, 2012; Machin & Fogarty, 2003). Data gathered using this observation scheme could then be analyzed with data on transfer motivation gathered through a questionnaire. Again, regression analysis (or more advanced techniques as mentioned above) could be used to reveal any impact of L2 teaching on learners' transfer motivation.

Finally, experimental designs could also be useful here, especially in L2 education contexts where transfer motivation is limited. Experimental designs could be used to investigate whether particular teaching strategies increase students' transfer motivation. For example, in a given L2 education context, students could be divided into an experimental group and a control group, and both groups could be asked to complete a transfer motivation questionnaire; subsequently, the experimental group could be taught with teaching strategies that might influence transfer motivation (e.g., having students discuss the positive impacts that transfer can have), and then both groups could be asked again to complete a transfer motivation questionnaire. Experimental designs have been used to investigate the impact of L2 teaching on learning transfer (Benson, 2016; Lee, 2022) (see task 1 above), and similar designs could be used to investigate the impact of L2 teaching on transfer motivation by changing the dependent variable from transfer to transfer motivation.

5. Research task 4: Investigate the relationship between transfer climate and L2 learning transfer

In research on learning transfer in workplace training, substantial attention has been paid to trainees' perceptions of support for transfer in their workplace. This is referred to as transfer climate, defined as "those perceptions describing characteristics of the work environment that may facilitate or inhibit the use of trained skills" (Burke & Baldwin, 1999, p. 229). The focus here is not the training context, but rather training's target context (i.e., the context to which learning is expected to transfer). For example, an individual who received workplace training and is now back on the job may perceive that their supervisors, coworkers, and/or supervisees:

- expect and encourage learning to transfer to the workplace;
- point out connections between the training and the workplace;
- have positive attitudes about the training;

- demonstrate the abilities covered in the training;
- give positive feedback when learning transfers.

The individual may also perceive that transfer to the workplace will lead to rewards like salary raises and promotions. These perceptions form a supportive (or positive) transfer climate and, as a result, the individual may be more likely to transfer learning to the workplace. On the other hand, the individual may perceive a lack of support for transfer (e.g., supervisors, coworkers, and/or supervisees do not expect or encourage learning to transfer to the workplace, do not point out connections between the training and the workplace, etc.) or an opposition to transfer (e.g., supervisors, coworkers, and/ or supervisees discourage transfer of learning to the workplace, point out disconnections between the training and the workplace, etc.); these perceptions form an unsupportive (or negative) transfer climate, in which case the individual may be less likely to transfer learning to the workplace. Research in workplace training contexts has revealed a relationship between transfer climate and transfer (Clarke, 2002; Lim & Morris, 2006; Martin, 2010; Rouiller & Goldstein, 1993; Sarfraz et al., 2021; Sookhai & Budworth, 2010; Tracey et al., 1995; Xiao, 1996; Yaqub et al., 2021). For example, Kodwani (2017) surveyed 123 managers in a public sector organization in India before and after they received workplace training; results showed that the strongest predictor of transfer was transfer climate. Blume et al.'s (2010) meta-analysis showed that transfer climate is a predictor of transfer.

The relevance of transfer climate is not limited to workplace training contexts. In Haskell's (2001) general theory of transfer, the nature of the target context of instruction plays a critical role: "The mechanisms of transfer […] are shaped by the social, organizational, and group systems within which they take place" (p.136). To illustrate the challenge that transfer climate can pose, Haskell referred to teacher education programs: in those programs, individuals may learn innovative strategies for teaching, but when entering full-time teaching jobs, the individuals may find that school norms, colleagues, and students are resistant to those innovative strategies; in the face of such resistance, transfer seems less likely. Furthermore, James (2010) described how EAP education can be viewed through a transfer climate lens: the target context of EAP teaching is the other courses students will take throughout their academic programs; each of those other courses is a kind of "workplace" (i.e., students have to do various kinds of academic work to complete the course), and there are "supervisors" (i.e., instructors), "co-workers" (i.e., classmates), and rewards (i.e., grades). It is therefore possible that EAP students perceive varying degrees of transfer support in this target context. In other words, these L2 learners may experience supportive and unsupportive transfer climates.

In research on learning transfer in L2 education, transfer climate has been investigated in only a few studies, and the findings are useful. First, it appears that transfer climate can influence L2 learning transfer: Ha and Vanaphuti (2022) surveyed individuals working at hospitals in Thailand who had received workplace English training and found that L2 learning transfer was influenced strongly by transfer climate. Second, it appears that transfer climate can be unsupportive for L2 learners: James (2010) investigated transfer climate for EAP students at a US university and found that while the climate was sometimes supportive (e.g., students reported that their mainstream course instructors expected students to have strong English writing skills), it was sometimes unsupportive (e.g., students reported that their mainstream course classmates made negative comments about EAP courses); Almuhanna (2022) examined transfer climate from the perspective of EAP instructors in Kuwait, and those instructors reported that transfer climate can be unsupportive for their students in various ways, including limited opportunities to use skills from EAP courses in other courses and instructors in those other courses having excessively high expectations. If transfer climate can influence learning transfer in L2 education contexts besides the one investigated by Ha and Vanaphuti, then unsupportive transfer climates like those reported by Almuhanna and James are concerning. With this in mind, more research on transfer climate in L2 education is needed.

The relationship between transfer climate and L2 learning transfer could be approached in different ways. Similar to task 2, L2 learning transfer could be examined here in terms of learning outcomes (e.g., what influence, if any, does transfer climate have on transfer of particular L2 learning outcomes?)

and/or transfer distances (e.g., what influence, if any, does transfer climate have on transfer of L2 learning over particular distances?). The approach taken could be primarily qualitative, for example involving individual or group interviews with L2 students that focus on whether the students have transferred learning and why; thematic analysis of transcripts could identify any reasons that reflect transfer climate, and these reasons could be treated as evidence that transfer climate has influenced transfer of L2 learning. Alternatively, the approach taken could be primarily quantitative, in which case L2 learning transfer could be measured with a questionnaire and/or through observation (see task 1), and transfer climate could be measured with a questionnaire. For example, in previous research, transfer climate has been measured with questionnaire items like "[e]mployees are provided with resources necessary to acquire and use new knowledge and skills" (Yaqub et al., 2021, p. 366), and "[s]upervisors give recognition and credit to those who apply new knowledge and skills to their work" (Sookhai & Budworth, 2010, p. 265). Once measures of transfer climate and transfer of L2 learning have been gathered, statistical procedures (e.g., correlation analysis, regression analysis, structural equation modeling) could be used to uncover any relationships. Furthermore, such qualitative and quantitative approaches could be used in combination to investigate this relationship with mixed-methods research designs.

6. Research task 5: Investigate the impact of L2 teaching on learners' ability to deal with unsupportive transfer climates

In research on learning transfer in L2 education, suggestions have been made for ways to teach for transfer. Focusing on EAP education, for example, it has been suggested that instruction be designed to resemble target contexts (Green, 2015; James, 2014; Zarei & Rahimi, 2014), and this can be achieved by using similar content or similar activities and genres (James, 2006). It has also been suggested that students be encouraged to think and learn abstractly and make connections (Green, 2015; James, 2014; Zarei & Rahimi, 2014), and this can be achieved by having students focus on general concepts (e.g., understanding what genre is) rather than just concrete examples (Cheng, 2007) as well as read and write texts in a variety of familiar and unfamiliar genres and compare and contrast texts across and within genres (Cui, 2019; Johns, 1997, 1999; Jwa, 2019; Yayli, 2011).

These suggestions have typically not taken transfer climate into account. For instance, an EAP course could incorporate content, activities, and genres that are similar to students' other courses and the students could be encouraged to think and learn abstractly and make connections, and this could help students to learn in ways that lead to transfer. However, it is unclear if this would help learners deal with unsupportive transfer climates in their other courses. Discussing transfer in a post-secondary education context, Haskell (2001) pointed out that if students are likely to face unsupportive transfer climates, teaching should "inoculate students to the effects of […] antitransfer norms" (p. 145). Applying this thinking to L2 education, if learners can face unsupportive transfer climates, and this can influence transfer, it would make sense to try to help learners anticipate and know how to deal with this. Focusing on EAP education, James (2010) suggested that to help learners deal with unsupportive transfer climates, teachers could try to raise learners' awareness of how transfer climates vary and ways to react appropriately. These suggestions are general enough that they could be applied in other L2 education contexts, too. However, the impact of such suggestions is unclear because research has not examined how L2 teaching might help learners to deal with unsupportive transfer climates.

Such research could be approached in several ways. First, it could be useful to investigate L2 instructors' perspectives on helping students deal with unsupportive transfer climates. This was the approach taken in Almuhanna's (2022) investigation of EAP education in Kuwait. Semi-structured interviews of university EAP instructors included questions about what the instructors thought could be done to help learners deal with unsupportive transfer climates. Findings included a list of practical steps that could be taken in EAP courses, such as focusing on general academic English skills, academic English genres, and discipline-specific English, as well as making explicit connections to discipline

courses. Similar interview-based research could be conducted in other L2 education contexts to identify steps that instructors think could be taken in those contexts to help learners deal with unsupportive transfer climates.

Research could also investigate the impact of such steps. This impact could be investigated with a primarily qualitative approach, for example through individual or group interviews that ask L2 students what, if anything, has helped them to be able to deal with unsupportive transfer climates; analyzing interview transcripts thematically, students' mention of aspects of the L2 course could be viewed as evidence that L2 teaching has had an impact. This impact could also be investigated with a primarily quantitative approach. First, a suitable indicator of impact would have to be identified, and this could be, for example:

- Students' perceptions that they are able to deal with unsupportive transfer climates. These perceptions could be gathered through a learner questionnaire, which would have to be created.
- Students' knowledge of strategies for dealing with unsupportive transfer climates. This knowledge could be tested, and such a test would have to be created.
- Students' transfer in situations involving unsupportive transfer climates. Transfer could be measured through a learner questionnaire or through observation (see task 2). To determine whether a situation involves an unsupportive transfer climate, a learner questionnaire could be used (see task 4).

Once a suitable indicator has been chosen, an experimental research design could be used to examine the impact of steps taken to help learners deal with unsupportive transfer climates. This could involve an initial measurement of the impact indicator (e.g., a pretest of students' knowledge of strategies for dealing with unsupportive transfer climates), then separating learners into an experimental group that receives instruction meant to lead to an increase in the impact indicator (e.g., instruction to increase students' knowledge of strategies for dealing with unsupportive transfer climates) and a control group that does not receive this instruction, then assessing the impact indicator again (e.g., a posttest of students' knowledge of strategies for dealing with unsupportive transfer climates). Statistical comparisons of the pre- and post-measures for both groups—for example, by conducting a two-way ANOVA—would reveal whether the steps taken to help these learners deal with unsupportive transfer climates had any impact. Quantitative and qualitative approaches like these could also be combined in mixed-methods studies of the relationship between L2 teaching and transfer climate.

7. Research task 6: Investigate L2 learners' transfer preparedness and its relationship with learning transfer

Since promoting learning transfer is a fundamental purpose of L2 teaching, there is a need to investigate whether L2 teaching leads to learning transfer. However, expected transfer distances can be large (see task 1), and this can complicate investigations. For example, in a context where a L2 is taught for academic purposes, it might be expected that learning will transfer to diverse courses throughout a student's academic program. This leaves investigators with difficult decisions about where and when to search for evidence of transfer. To address this, investigations of whether L2 teaching has led to transfer have often been longitudinal, involving collection of data while learners were in a L2 course and for months or years afterwards (Hill et al., 2020; Ho, 2018; James, 2006; Jwa, 2019; Wubalem, 2021; Zarei & Rahimi, 2014). This creates challenges not only in terms of research practicality (e.g., availability of time and related resources) but also findings' validity (e.g., with experimental studies conducted over large periods of time, it can be particularly difficult to control for the influence of extraneous variables).

A different perspective that could be useful is to focus on whether L2 teaching has prepared learners to transfer. Across L2 education contexts, it is important that by the end of a L2 course students are prepared to transfer what they have learned. This does not mean that by the end of the L2 course

students have already transferred learning; the expected transfer distance typically stretches beyond the end of a course, so whether students have transferred learning by the end of the course may be unimportant. Instead, this means that by the end of a L2 course, students should be prepared for whatever transfer opportunities may arise in the future. For example, in the L2-for-academic-purposes context referred to in the previous paragraph, if students take the L2 course early in their academic programs, whether the students transfer learning by the end of the L2 course may be unimportant because there may be plenty of opportunities for students to transfer learning after they have finished the L2 course; on the other hand, it is very important that by the end of the L2 course the students are prepared for such opportunities.

A focus on learners' transfer preparedness at the end of a L2 course is useful not only because this is a meaningful way to look at L2 teaching but also because it is practical. Investigating learning transfer from a second-year English-for-specific-purposes (ESP) course at a university in Taiwan, Tsou and Chen (2014) argued that these students would ideally be tracked to the end of their undergraduate studies and for three years after graduating, but that such a longitudinal approach would be difficult and would require external assistance (e.g., from other university departments and an alumni association). On the other hand, if the focus is on whether students at the end of such a L2 course are prepared to transfer learning, an investigation could be carried out within the L2 course rather than longitudinally. For researchers and educators who want to investigate L2 teaching from a transfer perspective but are not able to take a longitudinal approach, a focus on learners' transfer preparedness at the end of a L2 course could make investigation feasible.

Learners' transfer preparedness has not been an explicit focus of L2 education research, so a definition is needed. This can be created by drawing together key ideas from previous tasks in this research agenda. At the end of a L2 course, being prepared to transfer learning means that a student (a) learned something transferable in the course, (b) learned it in ways that promote transfer, (c) is motivated to transfer this learning, and (d) knows how to deal with unsupportive transfer climates. For example, at the end of a L2-for-academic-purposes course, we might conclude that a student is prepared to transfer learning because the student (a) learned a new approach for organizing academic essays in the L2 course, and this approach is potentially useful in the other courses the student will take, (b) learned this way of organizing essays through transfer-promoting activities (e.g., activities that resemble situations beyond the classroom, activities that involve abstract thinking and connection making) (see task 1 above), (c) is motivated to use this way of organizing essays in other courses, and (d) knows how to deal with transfer climates that are unsupportive towards using this way of organizing essays in other courses. This definition is tentative, and research may reveal other aspects of transfer preparedness that should be included. However, this can serve as a useful working definition as it brings together well-supported ideas about what learning transfer is and how it can be brought about.

Given the tentativeness of this definition, qualitative research could be used to investigate the nature of transfer preparedness. For example, using interviews to survey L2 learners individually or in groups at the end of L2 courses, such research could investigate the degree to which and the ways in which learners feel prepared (e.g., asking learners "How, if at all, do you feel prepared to use what you have learned in this course in other situations?") and why (e.g., asking learners "Why do you feel [un]prepared?"). In these interview transcripts, learners' descriptions of ways in which they feel prepared could be viewed as evidence of transfer preparedness; also, these descriptions could be mapped onto the tentative definition of transfer preparedness above to determine if that definition is sufficient.

Research here could also investigate the relationship between L2 learners' transfer preparedness and learning transfer. As described in tasks 2 and 4, L2 learning transfer could be examined in terms of particular learning outcomes and/or particular transfer distances and could be measured with a survey questionnaire and/or through observation. Transfer preparedness too could be examined using different approaches. One approach could be to use a survey questionnaire that focuses on learners' perceptions of L2 learning (e.g., "In this course, I learned a new approach for organizing essays"), perceptions of L2 teaching (see task 3), L2 transfer motivation (see task 2), and perceptions of their ability to deal

with unsupportive transfer climates (see task 5). If these questionnaire data indicate that learners think they learned something transferable in the course, learned it in ways that promote transfer, are motivated to transfer learning, and can deal with unsupportive transfer climates, this could be viewed as evidence that learners are prepared to transfer learning.

Another approach could be to use different data collection procedures for the different aspects of transfer preparedness. For example, a test could be used to examine L2 learning, observations could be used to examine L2 teaching, a survey questionnaire could be used to examine L2 transfer motivation, and a test could be used to examine knowledge of strategies for dealing with unsupportive transfer climates. In this case, if test data indicate that learners learned something transferable in the course, observation data indicate that learning occurred as a result of transfer-promoting teaching strategies, questionnaire data indicate that learners are motivated to transfer learning, and test data indicate that learners have knowledge of strategies for dealing with unsupportive transfer climates, this could be viewed as evidence that learners are prepared to transfer learning.

With either of these approaches (i.e., using only a questionnaire only, or using a combination of data collection procedures), once data have been gathered on L2 learners' transfer preparedness and learning transfer, statistical analyses (e.g., correlation analysis, regression analysis, structural equation modeling) could be conducted to uncover any relationships. If L2 learners' transfer preparedness is found to have a meaningful relationship with L2 learning transfer, transfer preparedness could be a particularly useful focus for researchers and educators in investigating L2 teaching from a learning transfer perspective.

8. Conclusion

Given that learning transfer is a fundamental goal of L2 teaching, learning transfer is a worthwhile focus for L2 education research. Existing research has investigated a variety of questions including what L2 learning transfers, where and when L2 learning transfers, how L2 learning transfers, and how L2 teaching promotes learning transfer. However, more research is needed, and the agenda above describes six tasks that would be worthwhile for such research. These tasks are important in that they have clear practical implications for curriculum, teaching, and learning in L2 education. These tasks are also original in that they draw on transfer-related constructs that have received limited attention in L2 education research: transfer distance, transfer motivation, transfer climate, and transfer preparedness. With this in mind, studies that undertake these tasks successfully would make a substantial contribution to research on this topic.

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