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Agency and Motivation to achieve Language-learning Objectives among Learners in an Academic Environment in France

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Personal agency within the area of learning may be construed as a process wherein learning objectives are achieved through volitional direction and tacit involvement in learning. Within the present study, perceived agency is the degree to which learners believe that the efforts they are putting into the language-learning process is sufficient with respect to the learning objective. Some learners assume that attending classes assiduously generates an entitlement to pass the course, thereby believing that the learning goal has been achieved. In other words, their perception is that they have displayed a high degree of agency in spite of what may sometimes prove to be a very low degree of personal involvement. Behaviours of this type are observed regularly among French learners of English in university language courses. This article reports on a study that investigated agency and motivation among second language university learners in a large research university in eastern France. The learners (n=134) were attending mandatory language classes that form a part of their academic curriculum and were majoring in either engineering, architecture or digital landscape design. The instruments used for data-collection were (i) a questionnaire (the Behaviour Identification Form) (ii) a pre-test / post-test procedure and (iii), as a second source of insight, a candid appraisal, by an independent examiner, of work produced by the learners. Findings suggest that goal achievement, as expressed by quality of work produced and scores attained on the post-test, tend to be a function of whether or not the learners were supervised rather than a result of inherent agency or motivation.

Keywords: agency; culture; learning behaviour; learning tasks; motivation
1 Introduction

French students enrolled in foreign language courses at university have been characterised as extrinsically motivated and lacking the desired behaviours to become autonomous in their language learning endeavours (Brown, 2009). In the past, these attitudes have been explained by the fact that education in France is still very much teacher-centred. Learning culture is a traditional affair relying on the transmission and accumulation of knowledge. Approaches like project-based learning or know-how gained through practice or experience are still considered novel and sometimes viewed with scepticism. Unstructured approaches to learning tend to receive heavy criticism both from the learners themselves and from management. For example, language learners will frequently consider language learning via a communicative approach as pointless. In addition, though most students arrive at university having completed seven or eight years of foreign-language education, their language proficiency is relatively poor (see 2.1 for more on this). When asked why this is the case, students report that much of their high-school language training involved passivity: listening to lectures on texts, grammar and vocabulary, with very little time for speaking or listening practice. As a result, high-school students enter higher education in a passive state. Once in higher education, the high-school learning culture is not easily changed and in many instances it is reinforced. The students expect to continue to learn by ingesting vast quantities of facts. Furthermore, most classes, including foreign-language classes, are large (often 24 students or more), making individualised learning environments difficult to organise. Accordingly, the teaching approach throughout universities continues to be mainly teacher-centred and deductive, particularly in areas of education involving science, technology and engineering (Prince & Felder, 2006). Favourable attitudes towards learning autonomy thus fail to thrive among learners, giving the impression that as individuals they lack personal agency.

1.1 Agency

From the point of view of social psychology, agency may be defined as an individual capacity for self-awareness and self-determination: decision-making, ability to enact or resist change, and take responsibility for actions (Carson, 2012). This broad definition percolates down to learning contexts as the manifestation of behaviour wherein learning objectives are achieved through volitional direction and tacit involvement in learning tasks. Van Lier (2010, p. x) summarises the nature of agency by describing how it encompasses “the ways in which, and the extents to which, a person is compelled to, motivated to, allowed to, and coerced to, act”, and equally, “the person deciding to, wanting to, insisting to, agreeing to, and negotiating to, act.” Furthermore, he suggests three fundamental features of agency relevant to the study of classroom language learning. The first feature is initiative, or self-regulation. The second is interdependency (“it mediates and is mediated by the sociocultural context”). The third is “an awareness of the responsibility for one’s own actions vis-a-vis the environment, including affected others.” (Van Lier 2008, p. 172.)

In other words, agentic individuals consciously attempt to influence the course and functioning of their life circumstances. That is to say, personal
influence is part of “causal structure.” (Bandura, 2006). In learning, this implies that learners (1) plan learning phases, (2) anticipate outcomes pro-actively by responding to situational cues, (3) display self-regulated behaviour without (constant) external reinforcement and (4) act introspectively. This reasoning suggests that learners cannot simply be observers of a process they have no responsibility for. Ideally, they must contribute to the learning process and assume responsibility for the accompanying circumstances.

This is an ideal situation as posited by Durban (2001) and is almost certainly what the majority of language-learning providers would hope to observe, or even expect, among the language learners that they come into contact with on a day-to-day basis. Unfortunately, it is not always what is observed in practice. In reality, many language-learning contexts are inhabited by learners who are both disengaged and passive. They display little autonomy and, at best, show only fairly low levels of extrinsic motivation (Ryan & Deci, 2000). Such behaviour can be the consequence of a number of extraneous factors such as age, experience, skills levels, locus of control or expectations brought about by the educational and learning culture the learner comes from. Inter-cultural studies seem to suggest that the latter factor (culture) plays an overarching role in regulating the others and, accordingly, constitutes a sort of keystone (Chamberlin-Quinlisk & Senyshyn, 2012). This certainly seems to be the case with French learners.

It has been argued that the sense of agency of an individual originates in their self-efficacy beliefs about how successful self-piloted learning processes can be (Zimmerman, 2000). In turn such beliefs can help motivate learning through the use of self-regulatory processes like goal setting, self-monitoring, and strategy use on condition that the learning context lends itself to the implementation of these processes. Learners who are not accustomed to applying such processes (sometimes for cultural reasons linked to their educational environment) may experience adaptive and attitudinal difficulties that lead to maladaptive behaviours (Vallas, 2010).

Given that a sense of agency is an individual’s awareness that actions are the result of a choice to voluntarily initiate and carry them out under one’s own personal control, possession of such awareness in learning contexts should result in learning objectives being achieved. Ideally, behaviour of this kind (awareness, the control of actions and choice) implies a sense of ownership of the processes in question. However, this construct can quickly break down when learners are immersed in contexts where they apply a mechanistic approach. In other words, where they are content to merely go through the motions required of the learning context. When this happens, there is little or no sense of ownership and, therefore, a diminished sense of agency with regard to the learning situation. Under usual circumstances, a learner’s sense of agency and the sense of ownership should dovetail. This typically is not the case of maladaptive learners: even though they are aware that they are involved in a learning process there is little sense of ownership. In other words, due to a lack of meaningful control over the learning context, a state of dissonance (Festinger & Carlsmith, 1959; Cooper, 2007) builds up between the learner’s sense of agency and the sense of ownership. In such circumstances, responsibility for “learning” is attributed to the teacher. When this happens, the mechanism brings about a sort of proxy agency (Durban, 2001) or perceived agency.

Perceived agency within the present study, as opposed to personal agency, is the degree to which learners believe that the efforts they are putting into the
language-learning process is sufficient with respect to the learning objective. Some learners assume that attending classes assiduously during a course generates an entitlement to pass it, thereby believing that the learning objective has been achieved. One could even say that the learning goal transubstantiates into a reward, or performance goal (Midgley, Kaplan & Middleton, 2001) because, for such learners, the principle objective is to achieve credits or some other type of tangible reward. In other words, from the point of view of their perception, they have displayed a high degree of personal agency in spite of what may sometimes prove to be a very low degree of personal investment. Behaviours of this type have been observed regularly among French learners of English in university language courses (Brown, 2009). The present investigation attempted to establish the relationship between learners’ agentic states (high or low agency) and individual learning outcomes as suggested by test scores.

1.2 Motivation

Agency and motivation are closely intertwined; it is difficult to conceive of the former without referring to the latter and from many points of view the two must co-exist. Indeed, both draw on similar concepts among which are self-regulation, self-determination, autonomy, responsibility, locus of control and self-efficacy. Motivation, within its overarching framework Self-Determination Theory (SDT), may be defined as “an inherent orientation towards growth and development, energized and sustained, in part, by the fulfilment of the psychological needs for autonomy, competence and relatedness” (Niemiec, Lynch, Vansteenkiste, Bernstein, Deci & Ryan, 2006, p. 762). This “active propensity towards engagement with, and internalization of, social values is considered an important basis of healthy development, marked by the tendencies towards differentiation of personal and social structures and their integration into a coherent, unified, healthy sense of self” (Niemiec et al, 2006, p. 762). Within SDT, even though motivated behaviour is ranged along a continuum from absence of regulation (amotivation) to intrinsic regulation (Deci & Ryan, 2000), it is usually broken down into two major components: extrinsic motivation and intrinsic motivation. The former of the two is generally considered the less desirable because it refers to behaviours initiated to achieve an external goal or because of external pressures. The latter, on the other hand, refers to behaviours initiated by an inherent interest on the part of the initiator because an activity is perceived to be interesting or satisfying. In learning, extrinsically motivating factors may include significant others such as parents or teachers (authority figures who can exercise pressure) or peers (an incentive to attend lessons because the people with whom one enjoys socialising will be there), as well as other external factors like the obligation to attend class, grades or extra credits, praise or approval and other rewards. These rewards may provide the satisfaction that the learning task does not provide. The presence of intrinsic motivation in learning implies that an individual will work on a particular subject because he or she finds it inherently interesting or enjoyable, or because that individual enjoys the challenge that the learning process involves. In other words, the learning activity is a reward in and of itself.

In language learning, motivation has been identified as one of the key factors that determine L2 learner success. It is said to act as a catalyst to launch initial
learning and as a sustaining force to a language-learning process that may wane over time (Cheng & Dornyei, 2007). Several key constructs of language-learning motivation have been proposed, the most recent of which are the “Process Model of L2 Motivation” (Dörnyei and Ottó, 1998) and the “L2 Motivational Self System” (Dörnyei & Ushioda, 2009). Notwithstanding the importance of all previous L2 motivational constructs, the present investigation is firmly anchored within the tenets of SDT.

2 Method

The investigation was designed to determine whether students that are broadly characterised as passive learners would display more or less agentic behaviour in learning in less traditional learning circumstances, data being collected by means of a questionnaire (to determine the students’ degree of agency) as well as pre- and post-tests (to measure learning gains). As language courses in French universities are mandatory for all undergraduates, because lecturers in the university where the investigation took place are required to check attendance and because all students have to be evaluated formally by means of the same test on the same syllabus, the notion of “less traditional” (implying here guided autonomy and task-based learning) may seem somewhat moot. However, these are technical issues that were worked around in order to achieve the desired experimental format.

The remainder of this section describes the population sample, and outlines in more detail the language items used as a basis for the investigation, as well as the materials and procedures used.

2.1 The participants

The present study looked initially at a total of 134 undergraduate students studying either engineering, architecture or digital landscape design. Lecturers tend to prefer more directive methods of teaching; they hand out regular compulsory homework and penalize lack of attendance. Learning for tests takes precedence over task-based or inquiry learning, and lecturing is teacher centred. In other words, the task-based approach, with its flexibility and insistence on learner responsibility, contrasts strongly with the mainstream pedagogical philosophy of most faculties. Indeed, it is considered that this mainstream pedagogical philosophy underpins the performance orientation generally observed among students in institutions of this category (Brown, 2007).

All of the participating students had French as their mother tongue and had gone through the French educational system. Consequently, they had experienced its learning culture and ideology. The students, aged 20 to 22 years old at the time of the investigation, were enrolled in degree courses with strong technical leanings (architecture, engineering or digital landscape design).

The students attended mandatory English classes for three hours per week and most were preparing the TOEIC (Test of English for International Communication). In France, all students study English in high-school for a period of 5 to 8 years. In spite of this, language levels tend to be fairly modest. This is reflected in the participants previous TOEIC scores: all of them had sat
the TOEIC test at least once since their enrolment in the university and had achieved scores between 450 and 880 out of a possible 990 (mean = 570). This mean score puts the learners in this sample on the fourth level (405 to 600 points) of six on the TOEIC can-do guide, or B1 on the Common European Framework of Reference for Languages (2012). Such modest language levels are the norm among the majority of undergraduates in France. However, in spite of their lower-intermediate level, all of the participants had progressed since their arrival in the college.

The students' most recent TOEIC scores were used to randomly separate them into two homogeneous groups of equivalent language level (n=69 for one group and n=65 for the other). Once the students had been divided into two groups, the TOEIC test played no further role in the investigation.

2.2 The Behaviour Identification Form (BIF)

It was stated above that learners in institutions like the one where the investigation took place give the impression that as individuals they lack personal agency. But can an individual be comprehensively bereft of agency? The learners certainly seem to display forms of agency in their capacity to resist change, manifesting a certain antipathy towards more novel approaches to language learning. Also, their past experiences in high-school and present experiences in university lecture halls seem to have reinforced the previously acquired learning beliefs that passivity is an effective approach. As a result, the learners' expectations dictate that language learning should take place along a certain pre-formatted pathway – a traditional, directed and almost “chalk and talk” approach. As a result, they are unwilling to place their beliefs in other approaches. Therefore, an initial question is whether such individuals are non-agentic in their life circumstances or, alternatively, is this apparent lack of agency selective: applied uniquely to certain learning contexts?

In order answer this question, the first instrument used in the investigation was a binary questionnaire known as the Behavior Identification Form (Vallacher & Wegner, 1989). Respondents to the BIF are prompted to establish a hierarchy between possible actions, thus identifying their level of identification with respect to a particular behaviour. According to Vallacher and Wegner (1989), individual levels of identification will be very much the result of capacities to meaningfully interpret the consequences of chosen behaviours. The statements in a Behavior Identification Form invite the participant to choose between a low-agency identification and a high-agency identification. Low-level agents tend to be people who view their actions essentially on the level of details and who function on a mechanistic level, while high-level agents tend to view their actions through the optic of their implications or outcomes (Vallacher & Wegner, 1989).

To establish whether the students involved in this investigation display high agency or low agency, the learners (n=134) were asked to fill in, online, a BIF that had been translated into French for the purposes of the investigation (see below).
Figure 1. Excerpt from the Behavior Identification Form (BIF) – online French version

In the BIF questionnaire, the students are asked to choose between possible alternatives. Some of these are reproduced below. The entire questionnaire appears in Appendix 1.

1. Making a list
   a. Getting organized
   b. Writing things down

2. Reading
   a. Following lines of print
   b. Gaining knowledge

3. Joining the Army
   a. Helping the Nation’s defence
   b. Signing up

4. Washing clothes
   a. Removing odors from clothes
   b. Putting clothes into the machine

The result of the BIF survey suggested that the respondents are high on agency (Cronbach alpha $\alpha = 0.79$ as opposed to Vallacher & Wegner’s 0.84). Lee et al. (2009), commenting on statistical reliability, report that a Cronbach alpha that is greater than 0.70 indicates high reliability, while one lower than 0.35 is considered unacceptable. When Cronbach values are between 0.35 and 0.70 their reliability is considered acceptable. Furthermore, statistics literature suggests that alpha values of 0.70 for confirmatory research and 0.60 for exploratory research are acceptable. The participants in the present study selected more frequently higher order identifications ($M=53.86\%$, $SD=15.13$) $p<.001$ rather than
lower ones. In sum, independently of other intervening factors, this initial finding suggests that the learners in question do indeed possess a level of agency that would allow them to control their life circumstances and, consequently, the specific circumstances linked to their own learning processes. This seems to be the case even though all of the participants in the investigation were relatively young (all undergraduate) and even though the learning environment the learners are accustomed to is not one that usually supports agentic behaviour or autonomy in learning. Bearing this in mind, as high-level agents, it is not unreasonable to expect that these learners would personally connect, or engage when involved in a learning action. It should be possible for such connections to take place in the absence of continuous external reinforcement in spite of the fact that such external reinforcement is consistent with these learners’ educational culture and, in the majority of cases, their expectations.

As with the TOEIC test scores, this finding is not strictly concomitant to the main objective of the study. It serves merely to confirm that the participants were indeed agentic individuals. Had this not been the case, further investigation would have been pointless.

2.3 The task-based activity

As a core part of the investigation, the learners were asked to use Google to find examples of the main language functions used in English for science. In the present context, those language functions include, amongst others, describing processes, describing actions, describing properties, describing location or describing function and ability. Each includes the expressions and phrases that allow one to express the function in question. For example, the phrase is supported by belongs to the function describing structure. A Google search might yield a sentence like, The houses are supported by stilts and so cannot be flooded.

Using Google in this way enabled the students to engage in a more project-based approach to learning English, as opposed to a traditional, lecture-based one. Also, it was thought that working on science-oriented content would constitute a further layer of motivation; students in higher years of study, in particular post-graduate students, regularly use such language functions when writing reports and abstracts. The participants’ task-based activity involved compiling a portfolio composed of examples of language functions they had discovered, with the further requirement that each example had to be illustrated. From the point of view of the investigation, working on specific language functions provided the basis for the pre-test post-test measure (see 2.4).

Apart from applying the specific language functions mentioned above, a minor constraint imposed on the participants was that the example sentences discovered thanks to Google had to come from within their science major (examples linked to engineering for engineering students, examples linked to architecture for architecture students, etc). Accordingly, proposing the sentence The main drive sprocket is attached to the engine crankshaft would be acceptable for engineering students, but not for architecture students. This sentence is an example using the phrase be + attached to from the function describing structure.

Using language functions of this sort as a vector for language learning is not new. In fact, the approach has somewhat fallen by the wayside in recent years.
However, it was felt that finding out about specific language functions was a more appropriate approach compared to possible others like researching grammar items (the learners would have perceived grammar as a little uninspired: it would have presented nothing new that would have stimulated their curiosity) or vocabulary (far too vast or abstract). In addition, the focus on language functions lends itself well to Google searches. Finally, even though using language functions as a means to improve language knowledge has been part of the language-learning provider's tool-kit for a number of decades, it was new for the learners in question. This in itself, as well as the fact that the learners had the opportunity to leave a personal imprint on their work via their illustrations and via their choice of examples, was believed to be a motivating factor.

So that they could familiarise themselves with both the eleven main language functions and the approximately one hundred and fifty possible language structures contained therein, the learners were first directed towards an in-house guide. This guide is the only component of the investigation that could be labelled “teaching material.” It provides the bare-bones of the principle structures used within each language function. For example, if a participant searched under the language function “Expressing Cause and Effect,” she or he would find “occur as a result of + noun + preposition + noun.” In a Google search, this might yield a sentence like, “Evaporation occurs as a result of heat from the sun.” Alternatively, searching for a sentence corresponding to “result from + noun” might yield a sentence like, “Helical gear failure may result from fatigue cracking.” Only bare-bones structures were provided in order to avoid limiting the students in their choices and creativity. It was the task of the students to imagine what “technical” vocabulary might be appropriate to each structure and to provide key-words: what noun phrase or subject could be placed before or after the verb, for example. The research process implied a lot of trial and error and some guesswork. A teacher was always available to help when students had difficulty interpreting the bare-bone structures and to show how the Google searches could be carried out. In addition, WordReference (http://www.wordreference.com) was frequently used for vocabulary searches.

Using Google as a super-concordancer and the entire web as the corpus, each student was asked to produce a portfolio with examples of the specified language functions gleaned from the Internet. Each example had to be accompanied by an illustration (drawing or photo) to show that the sentence that had been gleaned was understood. Moreover, adding illustrations of their own design was an opportunity for the learners to include something of their own personalities in an otherwise impersonal task. In other words, the task included both a language-learning aspect as well as a more recreational aspect (“Fun and Functional” is the dedicated term in such contexts - Paris & Paris, 2001). The approach produced results like the following (see below).

Some language instructors, particularly those deeply involved in data-driven learning, may feel that Google is not an appropriate concordancer. This particular issue is discussed extensively by Sha (2010) and, accordingly, need not be further analysed here. The main point of focus of the investigation was to clarify whether high-agency individuals who usually behave passively in language classes will function effectively as autonomous learners in a significant manner while undertaking less formal learning activities. Here, “a significant manner” means that there would be both significant and measurable learning
and recall in terms of the language functions that the participants were asked to research.

Prior to starting work on their portfolio, the learners were divided into two homogeneous groups (see 2.1 above): the slightly larger group comprised the supervised learners (SL, \( n=69 \)), while the other group comprised the unsupervised learners (UL, \( n=65 \)). Two groups of exactly equal sample size were not possible for timetabling reasons. This slight difference in size had no significant effect on later statistical results.

**Figure 2.** Page excerpted from a student portfolio showing outcome after task completion.
Even though a language teacher was always available to help, ULs were left pretty much to their own devices during the period of time over which the portfolios were being compiled. SLs, on the other hand, had to report on progress and show work-in-progress on a weekly basis. In other words, the ULs were placed in an autonomous-learning situation not unlike that typified by Holec (1981), while the SLs were placed in a more traditional classroom setting.

Although using Google to find examples that illustrated the language functions was the main task, it was not the only task. Other, secondary tasks included diagram-labelling exercises and paragraph writing. Effects produced from these secondary tasks, however, were not part of the measured data.

Although verification is difficult, it seems that the majority of the examples produced by the learners were gleaned from Internet sources; this is thought to be the case because of the grammatical and lexical correctness of the participants' production. A number of students, however, quickly realised that some sources produced richer pickings: the more web-smart learners used Linguee (www.linguee.com – an on-line translation tool with dictionary and search engine properties that allows bilingual text comparison) to search for many of their example sentences. As the resulting examples were generally of good quality and because the study was not investigating use of Google per se, using Linguee was not considered a problem. Other learners, possibly the less curious or those who were not convinced by the learning possibilities afforded by the activity, seem to have attempted to produce a portfolio without using the Internet at all. They tried to write the example sentences directly themselves, sometimes (mis)using bilingual dictionaries for translations. The resulting work was frequently pitted with the type of language errors characteristic of French learners. This behaviour occurred most frequently among the unsupervised learners. When it occurred among the supervised learners, the supervising language teachers quickly brought them back on to the right track during progress reports.

2.4 The test instrument

The test instrument was the same for all participants, consisting of a pre- and post-test design in identical format. Each test consisted of 50 four-itemed multiple choice questions on the type of functional language described above. The content of the post-test was identical to that of the pre-test, the only difference being that in the post-test both the order of the questions and the order of the multiple-choice items were reshuffled. To guarantee understanding, instructions and layout were closely modelled on the familiar multiple-choice gap-fill format of the TOEIC part V for “incomplete sentences.” As an example, an excerpt from the pre-test is provided in Appendix 2. The questions themselves were adapted from sentences found on the Internet. Adapting frequently implied simplification of vocabulary or sentence structures so that the students' focus was not distracted away from the expressions being tested. As a result, the correct answer was unambiguous, its justification frequently being linked to basic grammar rather than something inherent to the tested expressions themselves.
The difference between scores achieved on the pre-test and post-test served as a measure of performance improvement to determine which group of learners (SLs or ULs) had benefited most from their respective experimental conditions.

3 Procedure

The experiment took place during normal class time with the students' usual teachers. None of the teachers had any previous experience in managing task-based learning activities. To remedy any concerns that may have arisen from this, seminars were organised approximately every ten days to iron out difficulties and to guarantee consistency between teachers.

Past TOEIC scores are permanently kept on record by the student services department in each faculty. Consequently, the participants had already been distributed into the two main groups (SLs and ULs) of equivalent mean TOEIC score (SL mean = 570.19, UL mean = 570.09) before classes resumed.

The pre-test was administered during the first class of the semester. The participants were asked to complete the BIF before the following class. As it was pointed out in 2.4 above, the content of the post-test was identical to that of the pre-test. It was administered near the end of semester, approximately fifteen teaching weeks (university breaks not included) after the pre-test. This was ample time, it was felt, for any residual test recall effects to be insignificant. The tests were conducted towards the end of class and collected in for scoring. Though the participants were made aware of their test scores, they were allowed neither to consult the test booklet, nor were they given any explanatory feedback on erroneous responses.

Once it had been established that the participants belonged to the category of high-level identification (this was verified during the week following the pre-test), that is to say they would generally speaking behave in an agentic manner when dealing with life circumstances (attending mandatory courses to learn languages being one among many life circumstances), the next step was to find out how their general high-level identification would carry over into the two language-learning conditions outlined above. In other words, would apparently agentic individuals behave more or less agentically as a function of the experimental condition (supervised or not), and would there be any significant difference in performance, in terms of test scores, resulting from work carried out on the task-based activity?

Work on the portfolio started in week two and continued throughout the semester, an average of one hour per week being dedicated to portfolio work. During portfolio sessions, SLs worked in a workshop environment; the students worked individually in an ICT room while the teacher moved from learner to learner checking work, giving advice or guidance, and keeping the learners on track. ULs were allowed to disperse if they wanted to even though they too had access to one of the language unit's ICT rooms. Some chose to avail themselves of that resource and others did not. A teacher was present in a side office and advice and checking were afforded only on request. No record was kept of who chose to use the ICT room or how often requests for assistance were made.

The intention was that all students, independently of their major and of the group they were in, would produce a portfolio illustrating the targeted language
structures. It was hoped that the efforts invested in producing such a document would produce measurable effects in the post-test, and in particular on items linked to the language functions being studied.

4 Results

4.1 Initial findings

It was hypothesised that the unsupervised learners (ULs) would perform at least as well as the supervised learners (SLs). The reason why such a directional hypothesis was initially formulated was directly linked to the nature of the main task: it was linguistically simple to carry out and the content, bearing in mind the number of years the learners had previously studied English, was well within the capacities of even the weaker learners among the participants. In fact, many of the expressions in the targeted language functions had probably already been encountered previously.

In spite of this, the scores on the fifty-item pre-test and post-test were fairly modest, with the ULs initially performing slightly better than the SLs. The mean score in the pre-test was below 50% for both groups (SLs mean = 22.55, SD = 6.44; ULs mean = 24.29, SD = 5.36), while the mean score on the post-test was above 50% for both groups (SLs mean = 32.60, SD = 7.61; ULs mean = 30.46, SD = 5.02). Between the pre-test and the post-test, the mean scores improved by 10.05 and 6.17 points for the SLs and the ULs respectively. That is to say, the SLs made greater gains.

These improvements notwithstanding, the scores are low in the light of the simplicity of the task and the relative straightforwardness of the pre- and post-tests both in what was tested and the fact that they were multiple-choice items. It is felt that this finding reflects the overall lack of ambition or engagement found in a majority of French language learners (Brown, 2002) and it was the factor that quickly brought about the revision of the hypothesis that the ULs would perform as well as the SLs.

4.2 Supervised Learners vs Unsupervised Learners

The initial sample was made up of 134 learners, divided into two groups (SLs n=69, ULs n=65). The main interest in comparing the two groups was to determine which of the two benefited most during the investigation. This is reflected in overall language gains (the number of structures participants learned during the procedure) or recall (the number of correct structures the participants could identify, or remember during testing). As the test scores do not reveal whether the learners had genuinely “learned” the structures or merely recognised them during testing, differentiation between language gains and recall is not possible here. Both, however are reflected in the post-test scores.

To determine whether there were statistically significant improvements in language gains, a one-way univariate analysis of covariance (ANCOVA) for two independent samples was performed. ANCOVA was preferred because it is capable of removing the obscuring effects of pre-existing individual differences among subjects, while also allowing for compensation for any biases among the
samples (Ruby et al., 2013). The treatment conditions (supervised or not) were the independent variable, while the scores obtained per student on the post-test were the dependent variable. The students’ scores on the pre-test were the concomitant (covariate) variable which served to control for any initial differences in the students’ language knowledge. The results demonstrate that there is a statistically significant difference between the SL and UL Groups in favour of the SLs for learning gains beyond the alpha level 0.05: \( F(1, 131) = 7.99, p = 0.005 \). The mean score and standard deviation of the SLs were 32.6, SD = 7.61, while those of the ULs were 30.49, SD = 5.02.

Furthermore, to verify that no statistical assumptions underlying the use of ANCOVA were being violated, a test for homogeneity of regressions was also conducted. It showed that the assumption of homogeneity of regression slopes was successfully met: the critical value of \( F \) at the 95% probability level is lower than the observed \( F(1, 130) = 4.11, p = 0.04 \). Table 1 below summarises the entire data set.

**Table 1.** One-Way ANCOVA for 2 Independent Samples

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>( F )</th>
<th>( p )</th>
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<tr>
<td>adjusted total</td>
<td>4812.94</td>
<td>132</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>( F )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>between regressions</td>
<td>139.17</td>
<td>1</td>
<td>139.17</td>
<td>4.11</td>
<td>0.044675</td>
</tr>
<tr>
<td>remainder</td>
<td>4397.17</td>
<td>190</td>
<td>33.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>adjusted error</td>
<td>4536.34</td>
<td>131</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.3 Weaker Supervised Learners vs Stronger Supervised Learners

It is often claimed, frequently axiomatically, that weaker language learners progress more quickly than stronger ones do. As a secondary point of interest, the weaker SL learners were compared to the stronger ones. To do this, two sub-categories were created: Supervised Learners Weaker (SLWs) and Supervised Learners Stronger (SLSs). The sub-categories were created because, if supervised
learners seem to benefit more than unsupervised learners in a particular type of learning condition, not all learner language levels necessarily benefit equally.

Table 2. Test for the significance of the difference between the means of two samples

<table>
<thead>
<tr>
<th>Data Summary</th>
<th>TEST SUMMARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Values</td>
<td>SLS</td>
</tr>
<tr>
<td>n</td>
<td>35</td>
</tr>
<tr>
<td>$\sum x$</td>
<td>153</td>
</tr>
<tr>
<td>$\sum x^2$</td>
<td>1063</td>
</tr>
<tr>
<td>$SS$</td>
<td>394.1714</td>
</tr>
<tr>
<td>mean</td>
<td>4.3714</td>
</tr>
</tbody>
</table>

Results

<table>
<thead>
<tr>
<th>$\text{Mean}_a - \text{Mean}_b$</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3.7168</td>
<td>-4.35</td>
<td>67</td>
</tr>
</tbody>
</table>

F-test for the significance of the difference between the Variances of the two samples

<table>
<thead>
<tr>
<th>$df_1$</th>
<th>$df_2$</th>
<th>$F$</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>34</td>
<td>1.18</td>
<td>0.316670</td>
</tr>
</tbody>
</table>

$P > .05$ indicates no significant difference detected between the variances of the two samples.

T-test assuming unequal sample variances

<table>
<thead>
<tr>
<th>$\text{Mean}_a - \text{Mean}_b$</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3.7168</td>
<td>-4.34</td>
<td>66.18</td>
</tr>
</tbody>
</table>

$P$

<table>
<thead>
<tr>
<th>one-tailed</th>
<th>two-tailed</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;.0001</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Observed Mean</th>
<th>Confidence Intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Mean}_a$</td>
<td>4.3714 ± 1.1683 ± 1.5712</td>
</tr>
<tr>
<td>$\text{Mean}_b$</td>
<td>8.0882 ± 1.2886 ± 1.7303</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>$\text{Mean}_a - \text{Mean}_b$ (Assuming equal sample variances)</th>
<th>$\text{Mean}_a - \text{Mean}_b$ (Assuming unequal sample variances)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3.7168</td>
<td>-3.7168</td>
</tr>
<tr>
<td>± 1.7102</td>
<td>± 1.7102</td>
</tr>
<tr>
<td>± 2.266</td>
<td>± 2.266</td>
</tr>
</tbody>
</table>
The weaker learners among the supervised learners (SLs) are defined, for the purposes of this analysis, as the students whose score on the pre-test was 24 out of 50 or lower (WSL n=34), while the stronger learners are the ones whose score was 25 or higher (SSL n=35). To determine the amplitude between each score, on the assumption that students would generally score higher on the post-test, the pre-test score was subtracted from the post-test score (amplitude = T2 - T1). From a purely observational point of view, it appears that the weaker students in the SL Group had indeed progressed more in that they displayed higher overall amplitude increases.

However, in order to put this observation to a more robust test, a test for the significance of the difference between the means of two samples was used to analyse the amplitudes from each group. This means of analysis was chosen because the two sub-categories are independent of each other in the obvious sense that they were redistributed into separate sub-groups containing different sets of individual subjects. The individual measures in the first group are in no way linked with or related to any of the individual measures in the other group, and vice versa.

An SLS / SLW comparison of amplitude scores yielded statistically significant effects: \( t = -4.35, p = <.0001 \). The relationship between the two sets of variables seems to indicate a stronger performance in terms of score amplitudes in one of the groups. As suggested above and summarised in the descriptive statistics below (Table 3), the stronger performance is to be found within the SLW sub-category.

The implication of the above analyses is that the likelihood of the experimental result having come about through mere random variability is extremely limited (on the whole less than 5%). We can be confident therefore, at the level of 95%, that the observed results reflect something more than mere random variability. This “something more” seems to be a clear tendency among supervised learners to perform better when they are of lower language level.

Table 3 shows the number of learners in each sub-group as well as the means and standard deviations (SDs) of achievement within each sub-category and per score. Even though the stronger learners achieved higher overall scores in each test, the weaker learners showed greater improvement than the more skilled SL participants, as can be seen by comparing the amplitudes of each sub-category. Indeed, progression of the weaker learners was almost twice that of the stronger learners. Also, as it happens, the weaker learners in the SL group progressed more than the stronger learners in the ULs (mean= 8.08, SD = 3.71 and mean = 5.22, and SD = 6.22 respectively).

Table 3. Means and SDs as a function of sub-category within the SL group

<table>
<thead>
<tr>
<th></th>
<th>SLS (n = 35)</th>
<th>SLW (n = 34)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Pre-test</td>
<td>28.46</td>
<td>3.20</td>
</tr>
<tr>
<td>Post-test</td>
<td>32.78</td>
<td>4.22</td>
</tr>
<tr>
<td>Amplitude</td>
<td>4.32</td>
<td>3.43</td>
</tr>
</tbody>
</table>

To summarise, the results of the ANCOVA and t-test strongly suggest that the learners in the SL Group performed better than the UL learners on measures
related to the pre- post-test scores. This implies that the supervised learners learned more during the period of work on the portfolios or, at the very least, remembered more during the post-test. Furthermore, even though the stronger students in the SL Group scored higher than the weaker students, the weaker students surpassed the stronger ones on measures related to the pre- post-test scores. Once again, this suggests that the SLW students benefited more from the experimental condition.

All analyses yielded results that were statistically significant.

4.3 Portfolio quality

The learners’ portfolios were independently evaluated on the following basis:

1) overall presentation / cover design / illustrations / layout – 5pts

2) sentences (grammar, accuracy, usage, appropriateness to the learners’ major – 10pts and

3) labelling and writing activities – 5pts.

On the whole, SLs fared better than ULs as regards the score attributed by the independent assessor. This less objective finding tends to confirm the statistical findings.

4.4 Perceived agency

The data collected indicate that overall the learners clearly believe that they have produced enough effort in terms of time spent and intellectual investment to achieve a pass on the task (97%+ on an anonymous questionnaire). This conflicts with the reality of the situation: some very shoddy work was submitted and 1 in 5 of the ULs as opposed to just a few of the SLs did not submit any work for appraisal.

5 Discussion

Given that the presence of both personal agency and motivation in learning may be observed through the manifestation of volitional direction and tacit involvement in learning tasks, it follows that agency and motivation are inextricably intertwined. The participants in this investigation, independently of whether they belonged to the SLs or the ULs, were agentic individuals. This is substantiated by their performance on the BIF. In addition, the two groups (SL and UL) were of equal language level. However, in spite of their equivalent level of agency and language level, and all other things being equal, the ULs performed less well both in terms of portfolio quality and post-test scores. In other words, both in terms of commitment to the task-based activity and in terms of what they learned or remembered, the SLs did better.

The fact that apparently agentic individuals can under-perform the way the members of the UL group did indicates that learners who are high in agency in general terms do not necessarily display behaviours that one would usually associate with high-agency individuals. The implication is that agentic
behaviour can depend on context and, in language learning, it is probably very much to do with learner attitude and motivation towards learning the language in question. Previous studies have indeed shown that motivation increases a person’s inclination to succeed in activities related to recall (Roebers et al, 2001). The supervised learners in the investigation tended to perform better in terms of quality of work produced and in terms of recalled items in the post-test, while the unsupervised learners failed on both fronts. This may be explained by the simple fact that the supervised learners spent all of the available time working on the task and, due to their agency and motivation showed greater performance gains in terms of greater amplitudes between the pre-test and post-test. The unsupervised learners, on the other hand, may have used the allotted time to do other things not necessarily related to language-learning. That is to say they engaged little with the task displaying, accordingly, low levels of motivation and agency. In sum, the supervised learners seem to have displayed a degree of proxy agency, relying on their teachers as a source of stimulus and extrinsic motivation, while the unsupervised learners, in the absence of support from a supervisor, allowed themselves to be distracted. In other words, they lacked both agentic behaviour and intrinsic motivation.

This is not to say that the ULs do not entertain a desire to learn English. A considerable majority of the French learners in the university departments where the present investigation took place claim that proficiency in a foreign language, especially English, is important. Just as the Ideal L2 Self motivational theory predicts (Dörnyei & Ushioda, 2009), French learners do project themselves into an ideal future where they function efficiently as individuals in contexts where a mastery of English is crucial. However, in the dour reality of their academic present where other disciplines may elbow language learning into the wayside, they are unable to muster the autonomous strategies and self-regulation required to fully achieve the learning objectives in the absence of supervision. Indeed, they even display greater engagement in no-choice learning situations (Brown, 2002). Within the frame of SDT, such learners, although extrinsically motivated, have achieved a degree of integrated regulation in that the idea of learning English is congruent with their beliefs and synthesised with their self concept (Ryan & Deci, 2000). The practical outcome within the context of this investigation is reduced quality of work and lower achievement among the learners who were not supervised.

A preference for closely directed learning may be directly linked to the specific educational culture to which the participants in this investigation are accustomed. Alternatively, such preferences may in fact be more generalised across many more cultures than most language-learning providers imagine. The French learners who took part in this investigation expect directed learning. Their motivational profile clearly does not correspond to typical Anglo-Saxon or northern European motivational orientations where autonomy and self-regulation seem to be more firmly anchored values (Brown, 2009). As a result, though on a personal level the learners in this investigation seem to be high-agency individuals, there is no attempt to “own” the learning process when given the opportunity to do so. The task the learners were asked to do was a low-pressure task that left considerable flexibility to the learners as regards how to achieve the goals of the task. Yet, the supervised learners, with the more limited flexibility engendered by supervision, did better on the whole. In other words, the extrinsically motivated learners achieved more than the
unsupervised learners who had been given the opportunity to display intrinsic motivation. Achievement goal theory suggests that learning attitudes of this type are maladaptive (Midgley, Arunkumar & Urdan, 1996; Midgley et al, 1998). However, Midgley et al based their theory exclusively on learning within American (viz Anglo-Saxon) cultures. Other cultures do not necessarily adhere to the same paradigm.

In spite of the learners’ high level of agency as individuals, they tended to be more than happy to delegate responsibility for language learning to a “significant other”. Proxy agency, as this phenomenon is known, takes place when individuals feel that they are incapable of achieving an objective under their own volition. However, reliance on a proxy actually reduces mastery experiences (mastery being the major trait of adaptive learners) which can result in an inability to self-regulate one’s behaviour. This trait, which seems somewhat akin to the syndrome of learned helplessness (Elliott & Dweck, 1988), may be frequently observed among French learners of foreign languages.

Consequently, the cultural dimension mentioned throughout the introduction seems to play a dominant role in the regulation of language-learner attitudes, motivations and beliefs. Within Hofstedt’s Cultural Dimensions (Hofstede, 2006) France is high on the Power-Distance Index. In other words, the tendency to delegate responsibility to one who is perceived as an expert is strong. This may explain why the learning environment in France is still very much teacher centred. Opportunities to “learn to learn” tend to be few. This engenders dependency among learners and an expectation that the teacher is the provider and that everything must flow through this source. When learners are deprived of this source, as was the case of the ULs, learning performance tends to wane. Also, France is positioned high on Hofstedt's (2006) Risk-Avoidance Index, suggesting that French learners prefer guidance and supervision over independence and autonomy, both of which are implied in constructs concerning motivation and agency. These cultural traits taken together seem to undermine qualities like agency and intrinsic motivation. They tend to be prevalent in cultures like that of France or Japan (frequently referred to as collectivistic cultures), while they are much less prevalent in Anglo-Saxon or northern European cultures (so called individualistic cultures) as summarised in the table below adapted from Hofstede (2006).

<table>
<thead>
<tr>
<th>Table 4. Power distance, collectivism and risk avoidance across cultures.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Distance</strong></td>
</tr>
<tr>
<td><strong>Individualism /</strong></td>
</tr>
<tr>
<td><strong>Collectivism</strong></td>
</tr>
<tr>
<td><strong>Risk Avoidance</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Source: http://www.clearlycultural.com/geert-hofstede-cultural-dimensions/
6 Conclusion

The advantage of task-based learning and other non-traditional approaches to language learning is that they may help students to become better language learners outside traditional contexts (Johns, 1991). Such approaches are said to have the potential of encouraging noticing and consciousness-raising, leading to greater autonomy and better language learning skills in the long term (Boulton, 2008). However, when such approaches do not correspond to learner expectations, they will not lead to greater success than traditional approaches. In fact, the opposite seems to be true: motivation falls away and otherwise agentic individuals begin to behave non-agnostically with respect to language learning. This happened with the unsupervised learners in the investigation. Language learning providers should not, therefore, throw all of their enthusiasm into novel approaches merely because they seem to be the next big thing. Learner motivation, and the concomitant learner agency, depend on many factors among which is the learning context (Dörnyei & Ushioda, 2009). The unsupervised (autonomous) context of this investigation did not correspond to learner expectations. Accordingly, learning performance dwindled.

On the whole, French undergraduate learners are motivated for language learning. It is the interrupting and distracting pressures of other academic requirements that cause problems. French learners do not display the ideal motivational orientations of the typical intrinsically motivated learner as seen through the prism of self-determination theory. Rather, they are extrinsically motivated and behave accordingly, relying on pressure from significant others or on tangible rewards as a source of motive energy. However, even though they do seem to achieve a degree of internal regulation, mostly they will remain at the level of identified and integrated regulation. This is why they need to borrow their motive force from exterior sources, which of course means that they create the impression that they lack autonomy and agency for language-learning tasks. As Boulton (2008, p. 558), referring to French learners, puts it: “the learners’ relative reluctance to let go of the teacher and take charge of their own learning, to abandon the safety of being taught for the risky business of active discovery” needs to be taken into account when designing syllabuses and learning tasks.

The investigation reported here found that participants displayed forms of motivation and agency on condition that they were supervised. In particular, working in a more structured environment led learners to performing better in terms of quality of work and test scores. These findings are not necessarily consistent with mainstream research results on motivation and agency; it must be remembered that mainstream research is essentially Anglo-Saxon, while the learners in this investigation were French. In other words, the explanation for their differences in behaviour may lie in cultural factors. Although both cultures are western, both are very different: learner expectations are not identical and lecturing styles in France are a lot more teacher-centred than elsewhere in Europe. This teacher centredness seems to be a conditioning component when it comes to learner attitudes and behaviour, particularly in relation to motivation and agency.

This investigation has not demonstrated conclusively whether the supervised group did better thanks to the use of Google, computers or a task-based
approach or, indeed, because they were supervised; all of these could be avenues of further exploration. It has, however, underlined the importance of taking into account learner expectations, rooted in culture or elsewhere, when designing content or adopting approaches. Furthermore, it is clear, if the quality of work produced and the performance scores are taken as indicators, that the supervised group engaged more fully with the task. In addition, without being able to claim that they engaged more or displayed greater motivation or agency, the weaker learners benefited most from the experimental condition. On the other hand, the unsupervised learners do not seem to have engaged as thoroughly. By engaging the way they did, the supervised learners displayed greater degrees of motivation (even though this may have been extrinsic motivation) and agency (even though this may have been proxy agency).

Endnotes

1. IDEA: Interdisciplinarité dans les études anglophones (Interdisciplinarity in English Studies - EA 2338)

References


Appendix 1. The Behavior Identification Form

Any behavior can be described in many ways. For example, one person might describe a behavior as "writing a paper," while another person might describe the same behavior as "pushing keys on the keyboard." Yet another person might describe it as "expressing thoughts." This form focuses on your personal preferences for how a number of different behaviors should be described. Below you will find several behaviors listed. After each behavior will be two different ways in which the behavior might be identified. For example:

Attending class
   a. sitting in a chair
   b. looking at a teacher

Your task is to choose the identification, a or b, that best describes the behavior for you. Simply place a checkmark next to the option you prefer. Be sure to respond to every item. Please mark only one alternative for each pair. Remember, mark the description that you personally believe is more appropriate for each pair.

1. Making a list
   a. Getting organized
   b. Writing things down

2. Reading
   a. Following lines of print
   b. Gaining knowledge

3. Joining the Army
   a. Helping the Nation's defense
   b. Signing up

4. Washing clothes
   a. Removing odors from clothes
   b. Putting clothes into the machine

5. Picking an apple
   a. Getting something to eat
   b. Pulling an apple off a branch

6. Chopping down a tree
   a. Wielding an axe
   b. Getting firewood

7. Measuring a room for carpeting
   a. Getting ready to remodel
   b. Using a yard stick

8. Cleaning the house
   a. Showing one's cleanliness
   b. Vacuuming the floor

9. Painting a room
   a. Applying brush strokes
   b. Making the room look fresh

10. Paying the rent
    a. Maintaining a place to live
    b. Writing a check

11. Caring for houseplants
    a. Watering plants
    b. Making the room look nice

12. Locking a door
    a. Putting a key in the lock
    b. Securing the house

13. Voting
    a. Influencing the election
    b. Marking a ballot

14. Climbing a tree
    a. Getting a good view
    b. Holding on to branches

15. Filling out a personality test
    a. Answering questions
    b. Revealing what you're like

16. Toothbrushing
    a. Preventing tooth decay
    b. Moving a brush around in one's mouth

17. Taking a test
    a. Answering questions
    b. Showing one's knowledge

18. Greeting someone
    a. Saying hello
    b. Showing friendliness

19. Resisting temptation
    a. Saying "no"
    b. Showing moral courage

20. Eating
    a. Getting nutrition
    b. Chewing and swallowing

21. Growing a garden
    a. Planting seeds
    b. Getting fresh vegetables

22. Traveling by car
    a. Following a map
    b. Seeing countryside

23. Having a cavity filled
    a. Protecting your teeth
    b. Going to the dentist

24. Talking to a child
    a. Teaching a child something
    b. Using simple words

25. Pushing a doorbell
    a. Moving a finger
    b. Seeing if someone's home
Appendix 2. Functional Language Pre-test

First and Family Name: _____________________________ Group: ____ Yr: ____

English Functional Language Pre-test

No documents.

Write an answer for every question.

Please remember to write your name in the space provided.

A word or phrase is missing in each of the sentences below. Four answer choices are given below each sentence. Select the best answer to complete the sentence. Then mark the letter (A), (B), (C) or (D). Please copy clearly and legibly all of your answers here:

1. The flywheel …… three sections: the hub, the spokes and the rim.
   a. consists of
   b. is consisted of
   c. consists in
   d. consisting in

2. The skyscraper stands …… in the bedrock.
   a. surround
   b. are embedded
   c. embed
   d. connect

3. The pump …… the pillar thanks to strong steel bolts.
   a. attaches
   b. is joining with
   c. is attached to
   d. connects at

4. Our new house …… a special material that protects it from humidity.
   a. is lined with
   b. is lining up
   c. has lines with
   d. has lined with

5. The parts of a flower …… the stigma, the stamen and the style.
   a. include
   b. is including
   c. are include
   d. includes

6. The lever of the pump and the pump column …… a steel pivot pin.
   a. join together at
   b. join up by
   c. are joined to with
   d. are joined by

7. In between each baton in the new stud wall, the space …… acoustic mineral wool.
   a. is filled with
   b. is felt to
   c. is full up
   d. is filling up

8. Bricks are usually rectangular ……
   a. shaped up
   b. with shape
   c. shaped-like
   d. in shape

9. The leaves …… a substance that accelerates photosynthesis.
   a. contains of
   b. contain
   c. contain to
   d. contains

10. On a vertical-axis windmill, the rotor blades are …… the power take-off equipment.
    a. above to
    b. superior to
    c. top to
    d. upper of

11. Greenhouses provide gardeners …… growing plants during cooler seasons.
    a. on a way to
    b. in a method for
    c. with a means of
    d. of a task for

12. A high voltage transistor should be soldered so that it is …… and slightly above the main circuit.
    a. beside to
    b. over to
    c. lateral to
    d. between to

13. The concrete walls have low combustibility and, therefore, …… fire resistance within the building.
    a. have the function of providing
    b. have to function to provide
    c. have the function of provide
    d. have a function for providing

14. The fruit …… the tree by individual talks.
    a. are contained to
    b. is connected to
    c. is composed of
    d. are attached at

15. A chicken wire cage can …… a barrier to keep birds away from soft fruit.
    a. act upon
    b. act to
    c. act as
    d. act up

16. Liquids from the cooling system …… away thanks to an underground drainage system.
    a. is allowed to flow
    b. allows from flowing
    c. are allowed to flow
    d. allows them to flowing