

Promoting Learner Autonomy as Best Practice Pedagogy

— An Exploratory Factor Analysis of an Active Learning Method —

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Introduction

This paper looks at the needs of learners, presents the teaching method that best addresses those needs, and analyses the effectiveness of the deployment of the method.

The paper takes into consideration the research into the most favorable conditions for learning and explores the component factors of a pedagogy to support such conditions for students. The literature defines students' needs in terms of motivation (in particular, autonomy) and learning process (engagement, etc.) and reveals the importance of environment as a catalyst therein. Teaching should promote the conditions for optimal learning, which is at base a conducive environment, one which addresses social anxieties and promotes engagement through challenge and reflection, promoting autonomous motivation and related, self-directed motivations.

Given these components of a best practice pedagogy, the solution in the literature is well defined under the term 'active learning'. Active learning methodology inherently promotes autonomy, engagement and a sense of trust, familiarity and safety: a space to speak.

Method Evaluation

A survey of an active learning method treatment was carried out. Students responded to questions modified from a survey related to types of motivation.⁽¹⁾ A range of internal and external motivation is described in the survey, modified to refer students to components of the active learning method used in class. Items were presented with which students could

agree or disagree on a 10 point Likert scale, approximating interval data. An exploratory factor analysis (EFA) was carried out on the survey results to find underlying factors. 198 students over 2 universities were sampled which is robust, overriding unknown, unrepresentative local concerns influencing student performance. 13 items for 198 cases were surveyed, which is proportionally valid.⁽²⁾

Table 1: Exploratory Factor Analysis of Question Responses
 - 2 component factors identified (Eigen>1)

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.865	60.497	60.497	7.865	60.497	60.497	5.083	39.103	39.103
2	1.124	8.647	69.144	1.124	8.647	69.144	3.905	30.041	69.144
3	.839	6.456	75.600						
4	.530	4.074	79.674						
5	.465	3.576	83.250						
6	.422	3.245	86.496						
7	.390	3.002	89.498						
8	.296	2.275	91.773						
9	.279	2.147	93.920						
10	.232	1.785	95.705						
11	.221	1.701	97.405						
12	.179	1.379	98.785						
13	.158	1.215	100.000						

Extraction Method: Principal Component Analysis.

Table 2: Grouping of Question Responses and Labelling of Component Factors
 - Component 1 - Internal (Autonomous, Identified, Intrinsic) Motivation
 - Component 2 - External Motivation

Rotated Component Matrix ^a			Question Items	
	Component		Motivation to use Active Learning	
	1	2		
Timing	.799		Timing: My fluency improved - I can respond in good-time?	
SurvivalEng	.789		SurvivalEng: My functional skills improved - I can survive in English?	
GrV	.769		GrV: My vocabulary and grammar improved?	
S	.742		S: My speaking skills improved?	
L	.713		L: My listening skills improved?	
W	.700	.420	w: My writing skills improved?	
LikesMethod	.689	.508	LikesMethod: I like workshops in small groups and having survival English and 'leader' skills?	
R	.672	.458	R: My Reading Skills Improved?	
MethodUsefulActiveConfident	.587	.474	MethodUsefulActiveConfidence: I think group-work, survival English and 'leader' skills help me to be active and confident?	
MethodUsefulSAP		.852	MethodUsefulSAP: I think having group-work, survival English and 'leader' skills is important for studying abroad?	
MethodUsefulExpressMyselfToTeacher		.820	MethodUsefulEpressMyselfToTeacher: I think having group-work, survival English and 'leader' skills will help me to express myself and represent myself better to my teacher?	
MethodUsefulTOEICIELTS		.790	MethodUsefulTOEICIELTS: I think having group-work, survival English and 'leader' skills will improve my TOEIC / IELTS test-taking skills?	
IdoMethodBecauseTeacherMakesMe		.770	IdoMethodBecauseTeacherMakesMe: I do use group-work, survival English and 'leader' skills but only because my teacher wants me to?	

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.^a

a. Rotation converged in 3 iterations.

Two summary factors (components) were discovered accounting for 60.5% and 8.65% of variance (Table 1). Though the latter, minority component didn't pass a confirmatory validity test (parallel analysis), it was useful to see how items under each of the two factors contribute to student experience of the method (Table 2). The items in the factors suggest appropriate labeling as Internal (autonomous, identified and intrinsic) motivation and External (control) motivation, respectively, though with overlapping and unresolved features.

The internal motivation component describes the benefit offered by the method to autonomous learning in student-student situations. That is, using active learning tools, students satisfy their psychological needs through their relationships with each other. This contributes to their autonomous motivation, their internalised, identified motivation, as in "This is what I want to be doing right now", and they begin to like this method of learning, hence intrinsic motivation. Internally motivated students take responsibility for the social environment of classroom learning; a positive outcome of a well-functioning group learning environment would be that social anxiety is reduced as a hindrance or distraction in learning.

The external, control motivation component describes the non-volitional aspects of student-outside world interaction, which represents a lot of unknowns and seems to suggest students are unsure of the value of active learning tools there. That the interaction of student and teacher appears to label under this component is telling. It represents the challenge to either remove the teacher further from this student centered group-work teaching method so as to benefit student autonomous motivation, or, conversely, to place the teacher more 'inside' the method so that the student-teacher relationship constitutes an 'in-group' for the student and contributes to autonomous motivation in the student. It contributes to a weak factor, however, as the descriptive analysis shows. This is encouraging since the method by design places the teacher outside the group so that students can learn directly from each other in a low pressure, conducive environment, thereby developing student autonomy and efficacy in learning.

The analysis reveals students' internalization of active learning as a useful approach to basic English communication skills (2 items), grammar and vocabulary skills (1 item) and functional, speaking and listening skills (2 items). It reveals less resolved feelings about active learning in terms of improving writing skills (1 item), enjoying learning for its own sake (1 item), improving reading skills (1 item) and aiding students to be active and confident (1 item). These four items as a group may seem unrelated but perhaps intrinsic psychological

needs of students are being simultaneously addressed and challenged: student expectations in reading and writing, usually safe in their lack of social interaction, are confronted and involve, in active learning, reading and writing group-work, meanwhile, the confidence to be active and the intrinsic enjoyment that flows from that is unselfconscious, yet, in active learning, it encounters a reflexive process, and there is anxiety in self-awareness and thinking about what one is learning.

The items appearing under both components indicate the unresolved internal and external motivations to use active learning that stem from the challenging nature of active learning itself. The idea of active learning is that it provides the challenge along with the tools with which to deal with it. Students, case by case, develop a motivation to use the active learning tools — internal motivation — or a resignation to having to use them — external motivation.

The remaining items under the external motivation component continue to describe student uncertainty of the importance of active learning in the context of the challenge to be active and speak to the teacher (1 item), the challenge of studying abroad (1 item), of improving test scores (1 item), or, finally, the challenge to self-reflect and shun the denial in the notion of having no control and doing something only because you are told to do it (1 item).

- (1) Agawa, T., Takeuchi, O. (2016). *A New Questionnaire to Assess Japanese EFL Learners' Motivation: Development and Validation*. Annual Review of English Language Education in Japan, n27 pp. 1–16.
- (2) Tabachnick, B.G., Fidell, L.S. (2001). *Using Multivariate Statistics*. (4th Edition). Boston: Allyn and Bacon.

Background

The joy of doing something for its own sake, of being true to oneself and authentic, is deeply related to intrinsic motivation. Intrinsic motivation is a proto-autonomous motivation which produces gains in student performance, is easier to maintain than other forms of motivation and leads to less frustration or periods of loss of focus. Autonomous motivation, in addition, comes about as students take responsibility for achieving extrinsic, personal learning goals.

In order to foster autonomous motivation, the student will have three psychological needs

to be satisfied through her classroom relationships, in which she feels an easy relatedness to others, is appreciated as a competent person, and is treated as an autonomous individual.⁽³⁾ The important relationships in the classroom are the interpersonal student-teacher and student-student relationships, and also the relationship of the student to the material, in which the contents of learning, the teaching method and the teacher's manner, all effect student performance.

The pedagogy that sets up such an environment with its goal of mindful engagement with the lesson is known as active learning, in which we learn experientially — a whole body experience and an emotional experience.⁽⁴⁾ Active, experiential learning is effective as it mirrors how the body functions during learning.⁽⁵⁾ In this, physiological preparedness for learning is catalyzed by a conducive mood, and the environment that facilitates such a mood is one that facilitates engagement, accomplishment and satisfaction, pre-requisite to autonomy. A conducive mood, producing emotion, is in itself an intrinsic motivation, supporting the engagement of the student,⁽⁶⁾ democratising relations between students and between student and teacher,⁽⁷⁾ facilitating active learning challenges, otherwise taxing cognitively and emotionally, and embodying the lesson of how to learn (what students learn is what they experience). The heuristic of that conducive environment promotes efficacy in learning as it has a central role in the mechanism of learning, indicating to the brain that learning challenges are accomplishable, transforming learning ability by making the body functional, able and motivated to learn and creating the conditions for sustained effort and success in learning.⁽⁸⁾

(3) Deci, E. L., Ryan, R. M. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*. NY: Springer. doi:10.1007/978-1-4899-2271-7. ISBN 978-1-4899-2273-1.

(4) Piaget, J. (1952). *The Origins of Intelligence in Children*. (Cook, M., Trans.). NY: Int'l Universities Press, Inc.

(5) Kolb, D. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, NJ: Prentice Hall.

(6) Merolla, A. J. (2006). Decoding Ability and Humor Production. *Communication Quarterly*, n54 pp. 175–189.

(7) Vlieghe, J. (2014). Laughter as Immanent Life-Affirmation: Reconsidering the Educational Value of Laughter through a Bakhtinian Lens. *Educational Philosophy and Theory*, v46 n2 pp. 148–161.

(8) Kahneman, D. (2011). *Thinking Fast, Thinking Slow*. NY: Penguin Random House.

The Active Learning Method Description

An approach to support learning might focus on autonomous motivation. The students'

relationships to the material, as well as the environment — of the classroom, the teacher and each other — need to be considered.⁽⁹⁾ There is a need for a pedagogy that removes social fear hindering student engagement in the lesson, that promotes autonomous motivation in the student and related, internal motivations, and that allows for the collection of useful feedback to improve the process.

To remove extraneous, social distractions is to simplify expectations in class, allow students to work in small groups with each other and avail of the teacher as a learning partner. The slight remove of the teacher allows students to steer their own learning, promoting autonomy. As social distractions are removed, so the benefits of the learning environment are internalised by students, leading to increased engagement in the learning method and the lesson. Engagement and enjoyment of the lesson describes intrinsic interest which can stem not only from environment but from setting personalized, interactively elicited, intrinsically interesting goals. Then, for sustaining that engagement, there should be a scaffolding of timely inputs by the teacher. This pedagogical environment, embedded from the beginning of the course, acting positively on inhibition and on confidence, on internal motivations and engagement with the lesson, building language skills that the student finds useful, and containing an element of self-reflection on learning challenges inherent in 'active' learning (and useful for courting student feedback), is an environment that promotes efficacy in learning.

As students attempt to speak they encounter L2 knowledge barriers and, moreover, cultural barriers. The following lays out an approach to enabling students to hurdle those barriers and begin to speak. These tools facilitate autonomous language practice and students taking a leadership role in their own learning. They support the student in 'surviving' in English throughout the lesson, They reduce learners' social anxiety through working in small sized groups and through clear, sign-posted lesson stages that are predictable, and so, 'safe', and founded on a rehearsed English communication practice every lesson in which groups are coached to work to expand their language production with the help of group partners.

Students use the English language skills they have to acquire further English language skills in the 'direct method' (there are segments of the class where L1 is signposted for use). This implies a role for the teacher as 'language parent' to interactively elicit what the student already knows and build up the language the student doesn't know using words the student

already knows, checking understanding by using corrected language and explaining difficult keywords with simpler synonyms. This focus on teacher support, student comprehension, readily available active practice tools, together with student-centered lesson materials and, moreover, the guaranteed repetition of these conditions, class by class, all build the conducive, 'safe' environment and mood students need for efficacy in learning, engagement, accomplishment and satisfaction.

Leader skills involve behaviours a student can bring to communication situations. A key function is to seek good timing in responsive, 'active speaking' over and above any other consideration of quality of content, grammar, etc. If the student can make a statement or answer a question, this should be encouraged in good time. If, however, they can't understand what to do or how to answer, switching immediately to 'survival' English (so that they can continue through the challenge while remaining in English) should be practiced.

Students are organized in groups and as discourse research shows, this is a situation that produces a lot of autonomy and robustly handles a wide range of interaction therein.⁽¹⁰⁾ Students take it in turns to be leader of their group. The leader skills practiced include balancing the language production around the group — the quiet member and the extroverted member alike. Meanwhile, group members should be active and help their leader achieve her goal. Group-work comes with its own sets of survival phrases for workshopping quizzes or homework, regulating interactions, etc. These short-hand tools are printed with the students' essential class information and sit in front of the student to be practiced and ultimately memorised for ease of use throughout every class and over the course of classes. Ultimately, students benefit from the availability of that language framework, and internalise it and improvise around it. The same active concepts are extended to active reading and writing, to be applied to any kind of content based learning.

Student groups address both academic and general English communication situations. Active learning tools become TOEIC and IELTS practice tools, 'shadowing' practice of two or more skills together, such as simultaneously listening and reading while scanning for keywords (active listening, active reading). Writing, meanwhile, becomes 'active writing', approached with the concept of increasing the quality of students' mutual aid in the process of writing and editing. Beginning with active listening and active speaking — bridging the gap between a space to speak and language production — students develop the communication tools they need and will further develop in working on active reading and

writing skills.

Homework is defined as preparation before class, whose great advantage is to allow students to prepare for the lesson at their own personal speed and arrive at the same level together in class. Then, with the intrinsic interest of using their prepared language in class to talk about their real lives — their home, work, or university life — and aided by active learning tools, which become familiar and facilitate cognitive ease, the student can lead the way.

As I've introduced students to these ideas, I've found short-comings as well as opportunities for making the information more accessible — presenting it in different ways, including in diagrammatic form. In presenting updated handouts every few weeks, I see that that in itself is a benefit to students: each time students absorb the data afresh and understand it more. I use the whiteboard in class to recreate parts of diagrams so as to focus on specific needs, which has a 'live' quality that is engaging and easy to follow. I ask students to copy these notes in their own style, which gets them to reflect on the information. I present an active learning script for students to follow in class, signposting lesson aims and underlying 'leader' skills supported by 'survival English' in 'group-work' and 'small-talk' situations. A summary chart of these active learning tools is given to students to be used to aid their language production in class.

In summary, in active learning, three components are in play: There is the learning challenge inherent in the method; Next, there are the environment-shaping tools to deal with the challenge, which can be broken down into three skill areas — first, the active learning skills associated with leadership in which students learn how to be prepared, to look around, actively listen and copy other students; second, 'survival English', where, if students can't hear, they can ask pre-learned questions, so to actively remain in the target language; third, 'group-work' where students learn to interact with each other on problem solving in groups with low social tension — which are the catalyst for success overall; Finally, there is at play the element of self-reflection which is innate to 'active' learning.

There is a huge difference in quality between internal and external motivation related to the cognitive strain of the learning challenge and the emotional strain of self-reflection. Moreover, where there is only external motivation and the student is forced to do something they don't want to do, there is further cognitive and emotional strain that exhaust each

other, leading to 'ego depletion'.⁽¹¹⁾ In this context, between learning challenge and self-reflection, lie the tools of active learning. They produce the conducive environment that reduces emotional and cognitive strain, reciprocally releasing the mental resources of the student. The effect allows students to succeed in active learning. Moreover, as students begin to succeed, they internalise the importance of active learning and this allows the students to enjoy an unforced, self-directed learning, further reducing cognitive and emotional strain. This positive cycle of learning is built on the mechanism of active learning that builds student autonomy.

(9) Lowman, J. (1995). *Mastering the Techniques of Teaching*. (2nd ed.). San Francisco: Jossey-Bass.

(10) Liang, M. (2015). Play Chronotopes: Laughter-Talk in Peer Group Conversation. *Classroom Discourse*, v6 n2 pp. 158-172.

(11) Muraven, M., Tice D. M., Baumeister, R.F. (1998). Self Control as a Limited Resource: Regulatory Depletion Patterns. *Journal of Personality and Social Psychology*, v74 pp. 774-89.

References

Bonwell, C., Eison, J. (1991). *Active Learning: Creating Excitement in the Classroom*. AEHE-ERIC Higher Education Report, n1. Washington, D.C.: Jossey-Bass. ISBN 978-1-878380-08-1.

Deci, E. L., Ryan, R. M. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*. NY: Springer. doi:10.1007/978-1-4899-2271-7. ISBN 978-1-4899-2273-1.

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., Wenderoth, M. P. (2014). *Active Learning Increases Student Performance in Science, Engineering, and Mathematics*. *Proceedings of the National Academy of Sciences*, v111 n23, pp. 8410-8415.

Micari, M., Pazos, P. (2012). *Connecting to the Professor: Impact of the Student-faculty Relationship in a Highly Challenging Course*. *College Teaching*, v60 n2, pp. 41-47. doi:10.1080/8756755.5.2011.627576.

Muraven, M., Tice D. M., Baumeister, R.F. (1998). *Self Control as a Limited Resource: Regulatory Depletion Patterns*. *Journal of Personality and Social Psychology*, v74, pp. 774-89.

Smith, EE., Kosslyn, S. M. (2007). *Cognitive Psychology: Mind and Brain*. UK: Person.

Tversky A., Kahneman, D. (1974). *Judgement Under Uncertainty: Heuristics and Biases*. *Science, New Series*, v185 n4157.