

The relationship between differentiated instruction and learner levels of engagement at university

Differentiated instruction

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Robyn Moallemi

School of Humanities and Social Sciences, University of Brighton, Brighton, UK

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Abstract

Purpose – The aim of this paper is to explore the importance of individual learner differences and the effect differentiated instruction (DI) has on learners' levels of engagement.

Design/methodology/approach – The author carried out this research using a small-scale action research (AR) study.

Findings – The findings suggest that in acknowledging and responding to individual learner differences, especially interests, levels of learner engagement are positively affected.

Research limitations/implications – This study's key limitations were sample size, short-term study and potential teacher as researcher bias.

Practical implications – Recommendations were made for a further longitudinal study into the relationship between DI and language learner levels of engagement at University. An additional study into DI that looks beyond language learning at HE, could add value to pedagogic approaches, which could make courses of greater intrinsic value to its students.

Originality/value – This research study aims to help fill a gap in the literature on the application of DI, as well as a unique perspective into its effect on learner engagement within a university context.

Keywords Diagnostic questionnaire, Differentiated instruction, High impact, Individual learner differences, Learner engagement, University language teaching

Paper type Action research paper

Introduction

What is moderately challenging and motivating for one learner may offer far too little challenge (and therefore little motivation) for a classmate. The same task may be too stressful for yet another classmate. Learning tasks must be adjusted to each student's appropriate learning zone (Tomlinson, 2014, p. 34)

Learner diversity is a common aspect of many if not all classrooms, irrespective of subject, level or nature of study because learners are human beings with their own unique identities (Dörnyei, 2009, p. 230). Teaching a class with a diverse array of learners, each bringing with them a myriad of differences is therefore typical but can make responding effectively difficult if not impossible (Macintyre *et al.* in Hall, 2016, p. 310). If understanding learners' differences and responding to them is needed in order to engage learners (Subban, 2006, p. 941) then this arguably needs to be the first step, before innovating teaching practices, to ensure that they are appropriately challenging (Hattie, 2012, p. 52).

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Learner diversity, “learner factors” (Stern, 1983) or “individual differences” (Dornyei, 2005; Macintyre *et al.* in Hall, 2016) offer a “key reason why many second language learners fail-while some learners do better with less effort” (Dornyei, 2005, abstract). Therein lies the need for the teacher to reflect on learners within their context (Dörnyei, 2009), to understand their complex individual differences and respond with appropriate *contextual and pedagogic realisation* (Jolly and Bolitho, 2011, p. 108). This could be a core component of Evans *et al.*’s “high impact” higher education (HE) strategy, where “learning opportunities [that] lead to student retention, successful completion of programmes, and encourage student behaviours that lead to meaningful learning gains” (2015, p. 7).

Background

This research study was born out of a context of teaching beginners French as a foreign language at a British university. The university’s language courses were level specific, using the Common European Framework of Reference of Languages (CEFR) and a place on each course was determined by previous language learning experience. The course syllabus was designed around the CEFR and learners’ ability to demonstrate “can-do” statements, which “reflect the continuum of growth in communication skills” (ACTFL <https://www.actfl.org/publications/guidelines-and-manuals/ncssfl-actfl-can-do-statements>). Formative and summative feedback was provided but only summative assessments included feedback using assessment criteria, learning outcomes and a grade.

On the A1, beginners’ French course, there existed a low percentage of learners completing the course and sitting the summative assessments, which suggested that there were more individually desirable learning outcomes and course content than simply demonstrating CEFR A1 level of competence. Dornyei argued that, in fact, it is the combination of learners’ individual differences that “answer why, how long, how hard, how well, how proactively, and in what way the learner engages in the learning process” (2009, pp. 231–232), which is the hypothesis of this research study.

A myriad of complexities

Teaching in a university context poses a myriad of complexities but taking into consideration the language learners themselves, further intensifies the complexity. If “whenever two or more people are present in a social context, there will be difference” (Adams and Nicolson, 2014, p. 25) and “diversity is the rule not the exception” (Macintyre *et al.* in Hall, 2016), then individual differences need to be responded to. Whole class instructional strategies and teaching to the middle with a one-size-fits-all coursebook leads to disengaged learners, where they do not involve themselves and speed through or struggle with the activities. Generic learning materials are arguably “outside the cultural experience” of most learners and “thus effectively useless” (Jolly and Bolitho, 2011, p. 108), despite teachers’ creative attempts to blindly “personalise, localise and adapt” (Masuhara *et al.*, 2008 in Masuhara, 2011, p. 262). What therefore appears necessary is a greater understanding of learners’ individual differences and teacher action to make the course and teaching more responsive to their individual learners. These developments could lead to a more inclusive and responsive practice and have a high impact (Evans *et al.*, 2015, p. 7).

Differentiated instruction (DI) is a principle-based approach to teaching and learning that “advocates beginning where individuals are rather than with a prescribed plan for action that ignores student variance” (Tomlinson, 2014, p. 170). It neither advocates nor denies the use of materials, nor the use of specific instructional strategies because there is “no patented formula for creating a differentiated classroom” (Tomlinson, 2014, p. 25). It is an approach that recommends teachers “modify, adapt or design new approaches to instruction in response to students’ needs, interests, and learning preferences”

(Heacox, 2012, pp. 6–7) so that lessons no longer teach to the middle but are the product of understanding its learners.

It is my intention in this research study to explore how DI can be implemented within this context and to investigate its relationship with learner levels of engagement. Intent on improving teaching and learning within and without this context and regarding learner variance as a “resource, rather than an obstacle to overcome” (Richards, 2015a, p. 137), this research study intends to explore how it can be implemented and to investigate its relationship with learner levels of engagement.

Learner engagement

Engagement is rooted in the constructivist belief that learning is “influenced by how an individual participates in educationally purposeful activities” (Coates, 2005, p. 26) and has been described as “the time and energy students devote to educationally sound activities” (Kuh, 2003, p. 25); “the connection between person and activity” (Russell *et al.*, 2005, in Appleton *et al.*, 2008, p. 380) and “the psychological process, specifically, the attention, interest, investment, and effort students expend in the work of learning” (Marks, 2000, p. 154). As teachers, we notably monitor engagement through learner attendance, participation, effort and achievement, and it is therefore an optimal outcome for both teachers and learners. We want learners to be engaged because “successful (language) learning depends upon active participation and involvement by learners” (Richards, 2015a, p. 136). It is therefore easy to believe the positive link between engagement and achievement (Marks, 2000).

Janosz (2012, p. 695) distinguishes between *determinants* and *outcomes* of engagement, i.e. what affects engagement (determinants) and the effects of engagement (outcomes). Appleton *et al.* (2008, p. 383) employs *facilitators of engagement* and *indicators of engagement* in a similar way. To achieve the latter, Janosz argues that “we must privilege age-appropriate interventions, educational environments, and learning situations that respond to fundamental individual needs” (in Christenson *et al.*, 2012, p. 699). Tinto (2012) goes on to present four conditions that promote engagement: *expectations, support, assessment and feedback* and *involvement*. This research is echoed by Rumberger and Rotermund (in Christenson *et al.*, 2012, p. 503), who reiterate the importance of setting high educational expectations which are reinforced by assessment and feedback, arguably because they are integral to the positive cyclical effects of engagement. Osterman’s (1998) research study further suggests this, where “engaged students perceive more support from teachers and peers and that this perception leads to a beneficial cycle of increased levels of engagement and increased adult support” (in Appleton *et al.*, 2008, p. 374). This link has been highlighted in a report by Thomas, which links “belonging, retention and success” (2020, p. 20) and recommends institutional approaches that promote belonging of its students with an “HE experience that is relevant to interests and future goals” (Thomas, 2020, p. 72). Teaching at HE, therefore, should meet the individual needs of students (Chipchase *et al.*, 2017, p. 40) in order to be relevant, to engage and to support success.

However, HE has historically been known for having “less personalised or less student-centred approaches” (Evans *et al.*, 2015), which are arguably the antithesis of determiners of engagement, such as work not being intrinsically or extrinsically motivating and too abstract instructional strategies (Wehlage *et al.* in Christenson *et al.*, 2012, p. 495). However, although “one of the most direct and visible indicators of engagement is attendance (. . .) identifying the causes of dropping out is extremely difficult” (Rumberger and Rotermund in Christenson *et al.*, 2012, p. 500),” and demands further investigation. Nonetheless, although attendance is not the only determiner of engagement, “student engagement can be influenced by the ways we teach” (Darr, 2012, p. 708), and this is the basis for this research study.

Differentiated instruction: its guiding principles

DI is said to be “heuristic or principle driven” (Tomlinson, 2014, p. 25) as opposed to a fixed method or formula that breaks away from the “one size fits all” approach. Heacox (2012, p. 5) defines DI with five main attributes: *rigorous, relevant, flexible and varied and complex*, whereas Blaz offers ten: *choice, collaboration, communication, connections, learning how to learn, multiple learning modes, open-endedness, routine, variety in instruction and assessment and collegiality* (2016, pp. 4–5). Both Heacox and Blaz’s key defining terms are embedded within Tomlinson’s five guiding “underpinnings” (2014, p. 14) of DI: *creating environments that are catalysts for learning; building on a foundation of a quality curriculum; using assessment to inform teaching and learning; tailoring instruction to assessment-indicated student needs and leading and managing a flexible classroom* (2014, p. 20). These underpinnings or principles are inherent in Tomlinson’s differentiation of *content, process and product* (1995, 1999, 2001, 2014), which are flexible and responsive; based on three categories of learner individual differences: *readiness, interest and learning profile* (Tomlinson, 2014).

Differentiating *content*, refers to “what pupils learn” (Rogers, 1976 in Johnson, 1989, p. 26) or more accurately what “teachers want students to learn” (Tomlinson, 2014, p. 18). Rock *et al.* in their framework for DI refer to it as the “content variable” and propose that teachers ask themselves: “what content is there? Why should they care?” (2008, p. 35). DI proposes that in order to answer these questions with genuine effect, teachers must know their learners. Knowing what learners already know about a topic, their *readiness*, will inform their choice of *content* and challenge and “if material is presented at or below the mastery level, there will be no growth. If presented well above the zone, children will be confused and frustrated” (Byrnes, 1996, p. 33). In order to apply this theory, teachers will need to know their learners’ *level of mastery*.

The second element *process* refers to how learners will “make their own sense of the content or input” (Theisen, 2002, p. 2) and “how they learn it, and how teachers help them learn” (Rogers, 1976 in Johnson, 1989, p. 26). In order to differentiate *process*, the teacher uses knowledge of the learners’ *identity*; their investment and motivation and *learning profile*; how they learn best, i.e. learning strengths (Gardner, 2006) and styles (Rubin, 1975; Fleming and Mills, 1992; Reid, 1998; Skehan, 1998; Dornyei, 2005; Fleming and Baume, 2006). Understanding how they learn best and what skills they want to improve, provides a foundation of knowledge on which *process* can be designed.

Differentiating the third element: *product*, involves differentiating the “styles and methods of assessment” (Rogers 1976 in Johnson, 1989) or *output* (Theisen, 2002, p. 4), where learners demonstrate and extend their learning (Tomlinson, 2014, p. 18). The *product* could be based on *interest* and *learning profile*, and the difficulty of the *product* could be linked to *readiness*, rooted in Bloom’s Taxonomy (1956) and underpinned by Vygotsky’s ZPD (1986). The type of *product* can reflect their strengths (*Multiple Intelligences*, Gardner, 2006) and styles (Rubin, 1975; Fleming and Mills, 1992; Reid, 1998; Skehan, 1998; Dornyei, 2005; Fleming and Baume, 2006), and presenting an *output* could encourage learner motivation and *investment* (Norton, 2013). The output of “constructing a public entity” can encourage further learning and gaining peer feedback can help to “build knowledge structures” (Papert and Harel, 1991). Such peer review, according to Petty, reinforces learners’ motivation as “students are more motivated when peers are the audience rather than the teacher” (2006, p. 242).

Understanding learner *readiness, interests* and *learning profile* and using this knowledge to modify *content, process* and *product*, will help teaching be on its way to being of “high interest and high relevance” (Tomlinson, 2014, p. 33). What therefore seems of paramount importance is the role of the teacher. Described as *diagnostician* (Tomlinson, 2014, p. 4), *change agent* (Hattie, 2012, p. 162) and *more knowledgeable other* (Vygotsky, 1978), the

teacher's role is instrumental in identifying learner needs and making the teaching relevant to their interests and future goals (Thomas, 2020, p. 72). In using this information to better their teaching they will be innovating their practice and in doing so, securing a positive and supportive climate for learning that will positively impact learner engagement. This idea is not new, as Subban stated: "curricula should be designed to engage students, it should have the ability to connect to their lives and positively influence their levels of motivation" (2006, p. 941).

Research design

This study aimed to explore the relationship between DI and levels of learner engagement in a university teaching context. By combining a cycle of action and reflection (Kolb, 1984), the aim was to improve my teaching practice by interventionist means. Although small-scale due to time, which arguably only "permits answers to short-term issues" (Cohen *et al.*, 2007, p. 80), the issue of learner engagement is a long-term issue in language teaching and more generally across HE.

Rooted in my desire to improve my quality of teaching and learning, this study involved a mixed method approach; incorporating quantitative and qualitative questionnaires, group interviews, peer observations and "teacher as researcher" observations to allow for both inductive and deductive reasoning (Bryman, 2001, p. 20). The participants were all invited, self-selected learners of French level A1, constituting university students, public and staff. The number of self-selecting participants that took part in this study was eight. The participants' ages ranged from twenty to sixty-seven.

A combination of instruments for data collection were employed, including a pre-assessment pack (Heacox, 2012; Blaz, 2016; Tomlinson, 2014) (Appendix 1) that was designed and disseminated to participants and a "triangulation" (Denscombe and Dawsonera, 2010, p. 154) of methods, which considered researcher observations, teacher observations and participant feedback.

Framework for data analysis

A framework for data analysis has been developed for each instrument, based on Tomlinson's principles. The data will be presented in response to each sub-question and where appropriate, data from different instruments will be analysed.

Findings and discussion

This *findings and discussion section* aims to answer the principle question: *what is the relationship between DI and learner levels of engagement at university level?* Findings and discussion will be presented under four sub-questions. It is important to state that due to the amount of data recorded, only the most salient findings that addressed each sub-question will be presented and discussed.

How can individual differences be identified and responded to through DI?

Readiness. Information on participants' *readiness* was assessed in order to determine what should be taught and at what level of challenge. Participants' responses demonstrated that four out five participants felt "somewhat" confident in competencies related to the subject topic and one participant felt competent. Participants' *readiness* was further evaluated by attendance records as well as professional observations (Heacox, 2012, p. 26).

Although measurements of participants' readiness seemed consistent before the AR class took place, in-class observations and interviews showed it to be inaccurate. Despite aiming to begin "where individuals are rather than with a prescribed plan for action that ignores student variance" (Tomlinson, 2014, p. 170), the inconsistency of the pre-assessments with participants' actual *readiness* highlighted the difficulty of accurately setting challenges to their actual level of mastery (Vygotsky, 1986).

Interest. Assessing participants' interests was manageable, insightful and cogent. The data (Table 1) demonstrated motivations that support the belief that there *are* more desirable learning outcomes to our course than simply demonstrating CEFR A1 level of competence.

These findings allowed me to design tasks that were truly relevant to the students' motivations and interests, where the *content, process and product* were all differentiated. Task 1, for example, involved participants choosing one of four "learning centres" that each had a specific holiday focus: the beach, the countryside, the city and adventure and carry out a vocabulary activity followed by creating a holiday character and using the past tense and vocabulary to tell the others what they did on their holiday. Planning the lesson in accordance with their interests does "motivate students' exploration of topics" (Tomlinson, 2014, p. 76) because the content was "dynamic, intellectually intriguing and personal" (Tomlinson, 2014, p. 53). Knowing participants' interests and hobbies and designing responsive *content* allowed me to truthfully answer "what content is there? Why should they care?" (Rock *et al.*, 2008, p. 35) and promote active learner engagement.

P	Nature of study	Age	Why learn French?	Where do you intend to use French?	Hobbies/interests	Types of holidays I enjoy	Things I would like to know about holidays
P1	Extra to degree	26	Personal	Travelling and work	Movies, drawing, museums, coffee shops, learning languages from watching TV	City	Activities/ food and drink
P2	Public	26	To live in France	France, work and travel	Films, books, travel photography	Cultural and nature	Activities/ food and drink/clothes/ destinations
P3	Extra to degree	20	Like French culture	Travelling and watching Films	Cinema and reading, politics, nature and hiking	adventure/ hiking	Activities/ Destinations
P4	Public	67	To read French – especially art/historical texts/ literature	Travelling and reading	Literature, art history, cultural history, history of blues and jazz, travel, garden, swimming, book collecting	Cities and countryside	
P5	Part of degree	21	Wants to be fluent	French friends who live and work in France	Football, swimming, tennis, fitness, boxing	Beach	activities/food and drink/ clothes/ destinations

Table 1. Participants' data relating to interests from tell me a little about you

Learning profile. Data collated on participants' learning profiles were varied, eclectic and occasionally contradictory (Table 2), supporting Graham Hall's assertion that learning styles are "not wholly innate and therefore not completely fixed in nature" (2011, p. 4).

That being said, how they learn and their strengths were taken into consideration with task 1 involving *flexible instructional groups*, which took into consideration their learning style preferences, with matching images with text that aimed at the four participants with naturalistic strength. Task 3 again involved *flexible instructional groups*, as well as participants choosing *content, process* and *product* (Appendix 2). Ironically, in task 1, despite P3's preference for working independently, he worked in a pair. Likewise, in task 3, despite participants stating they wished to produce a role play (P1 and P2), produce a drawing (P4) and a film (P5), they all wrote down a script in prose format. How they engaged in their learning and what they produced was ultimately different to their self-assessed learning styles and strengths, an incongruity that again supports Hall's assertion that learning styles are "not wholly innate and therefore not completely fixed in nature" (2011, p. 4). However, participants' feedback suggests that this response was rooted in their own learning strategies, writing it down "just to get our head around the grammar and to work out the grammar", reflecting their linguistic abilities.

Participants' learning strengths and preferences for learning were assessed at the beginning of the AR in order to identify "the ways in which a learner learns" (Tomlinson, 2014, p. 19) so that instructional strategies could be tailored to each participant (Blaz, 2016, p. 160). However, the eclectic and sometimes complex responses demonstrated how their ideas on how they learn best and their perceived strengths were not completely reflected in "the characteristic manner in which an individual chooses to approach a learning task" (Skehan, 1998, p. 237). Therefore, although advantageous in terms of encouraging reflection and designing an array of instructional strategies with a variety of choices, participants did not always choose the most suited *process* and *product*. However, this "fairly complete knowledge of the student's learning styles and preferences can provide an effective basis for differentiated instruction" (Bender, 2008, p. 4) because it encourages a variety of choice of *process* and *product*, where choice can lead to empowerment and engagement.

Do learners engage with this approach to teaching and learning equally? i.e. Is it inclusive?

Academic engagement. Video based and subsequently teacher observation found that P3 did not academically engage in two of the tasks. This could have multiple explanations: reflective of the complex nature of individual internal variables that "interact with each other" (DeKeyser 2013 in DeKeyser, 2016, p. 353), including anxiety and willingness to communicate (Dornyei, 2005), P3's lack of active participation could have been reflective of his *readiness*, being that the tasks were above his level of mastery (Vygotsky, 1986, p. 33) or alternatively, that he did not like the tasks, having a preference for working independently. This task

Participant	Learning style	Learning strengths
P1	All equal preference	(1) Naturalistic (2) Visual
P2	Auditory/visual/kinesthetic/afternoon learner	(1) Intrapersonal (2) verbal/kinesthetic/existential
P3	Visual/kinaesthetic/independent/sitter/morning	(1) Logical (2) Visual (3) Naturalistic
P4	Visual/kinaesthetic/sitter/morning	(1) Naturalistic AND Intrapersonal
P5	All equal preference. Not afternoon learner	(1) Naturalist (2) Logical, Kinaesthetic and Existential

Table 2.
Participants' data relating to learner profile

offered no choice and may have brought on an affective filter (Krashen, 1982) such as anxiety, which can negatively impact engagement and consequently language achievement (MacIntyre, 1999). Alternatively, if learners “are welcomed and valued as they are” (Tomlinson, 2014, p. 15) then perhaps this finding should simply reflect this participant’s individual choice to not actively engage, despite its potential negative effect on learning. As Dornyei asserts, it is the combination of learners’ individual differences that “has been seen to answer why, how long, how hard, how well, how proactively, and in what way the learner engages in the learning process” (2009, pp. 231–232).

Behavioural engagement. Similar to the academic engagement findings, P3 demonstrated the least behavioural engagement (Table 3) throughout the AR class. Interestingly, P5 behaviourally engaged the most and despite having initially responded over confidently with his *readiness*, his confidence arguably positively affected his behavioural engagement. Griffiths theory that “learners’ sense of identity is seen as a major contributor to motivation” (2015, p. 430) is supported by P5 who commented “what I found good about that is I could focus on speaking ((hand gestures from mouth)) because that’s my weakness”. Reiterating his awareness of self and motivations for investing time in the class, P5’s sense of identity has therefore been accurately responded to by DI’s “learning situations that respond to fundamental individual needs” (Janosz in Christenson *et al.*, 2012, p. 699).

The data also demonstrated that task 3, where content, process and product were differentiated, generated the most behavioural engagement. Having an allocated 30–40 min to complete, which although did not accurately implement DI’s *flexibility of time*, did give all participants an extended amount of time to complete the task; allowing participants to collaborate and communicate; to apply their knowledge and use their own resources (Ellis, 2009) to “make their own sense of a topic” (Petty, 2006, p. 234). The combination of differentiating all curriculum elements and increasing time spent on the task seems to have increased participants’ behavioural engagement.

Cognitive engagement. Findings from the student post-questionnaire (Table 4) showed that all felt engaged, and the three main *determinants* (Janosz in Christenson *et al.*, 2012) or *facilitators of engagement* (Appleton *et al.*, 2008) were *relevance of schoolwork to future endeavours*, *value of learning* and *self-regulation*. *Relevance* is one of five main attributes of DI, as defined by Heacox (2012, p. 5) that is equally a characteristic of a *quality curriculum* that “taps into learners’ feelings and experiences” (Tomlinson, 2014, p. 33). Arguably, participants felt engaged because the *content*, *process* and *product* held their attention, interested them and encouraged expending effort because it was deemed relevant.

Value of learning reflects participants’ positive perception of the *content*, *process* and *product* and *self-regulation*, the opportunity to self-direct (Zimmerman, 2002), arguably reiterates what Janosz describes as “learning situations that respond to fundamental individual needs” (in Christenson *et al.*, 2012, p. 699). With opportunities to be active in their own learning, participants were equally encouraged to be autonomous.

Findings on P3’s cognitive engagement could be explained by the individual difference variable of anxiety (Dornyei, 2005), affective filters (Krashen, 1982), or alternatively, his lack of contributions to the group interview could demonstrate *reactivity* (Cohen *et al.*, 2007). P3’s observed lack of active participation and engagement could reflect the reverse of Osterman’s (1998) findings of a “beneficial cycle of increased levels of engagement and increased adult support” (Appleton *et al.*, 2008, p. 374). Not as engaged as the others, perhaps P3 did not perceive the support available. In contrast, P4 and P5, who had the highest frequency of behavioural engagement, also referenced the most internal indicators of cognitive engagement, suggesting the “beneficial cycle of increased levels of engagement” (Appleton *et al.*, 2008, p. 374).

Participant	Type and frequency of voluntary participation				Frequency of Voluntary research				Total frequency of behavioural engagement for each task			
	Task type	Video	Ask a question	Give an answer	Clarification of vocabulary/grammar	Volunteer to present	To move on to next task	Conversation		Totals	Use of technology to research language	Use of other materials to research language
P1	Task 1	Video 1 Part 1	0	1	0	1	1	0	3	0	4	4
P2	Task 1	Video 1 Part 1	7	0	1	1	0	0	9	7	5	12
P3	Task 1	Video 1 Part 1	1	0	1	1	0	0	3	3	0	3
P4	Task 1	Video 1 Part 1	5	4	0	1	0	0	10	0	0	0
P5	Task 1	Video 1 Part 1	2	4	0	1	0	0	7	5	0	5
P1	Task 2	Video 1 Part 2	0	2	0	0	0	0	32	0	0	24
P2	Task 2	Video 1 Part 2	0	1	0	0	0	0	2	0	0	0
P3	Task 2	Video 1 Part 2	0	0	0	0	0	0	1	0	0	0
P4	Task 2	Video 1 Part 2	2	9	0	0	0	0	10	0	0	0
P5	Task 2	Video 1 Part 2	0	3	0	0	0	0	2	2	0	2
P1	Task 3	Video 1 Part 2	1	1	0	0	0	0	15	11	9	2
P2	Task 3	Video 1 Part 2	2	3	0	0	0	0	2	9	2	20
									5	9	2	11

(continued)

Differentiated instruction

Table 3. Observational data of behavioural engagement

Participant	Type and frequency of voluntary participation					Frequency of Voluntary research				Total frequency of behavioural engagement for each task		
	Task type	Video	Ask a question	Give an answer	Clarification of vocabulary/grammar	Volunteer to present	To move on to next task	Conversation	Totals		Use of technology to research language	Use of other materials to research language
P3	Task 3	Video 1	4	0	1	1	0	0	6	16	0	16
		Part 2										
P4	Task 3	Video 1	4	4	6	1	0	1	16	2	2	4
		Part 2										
P5	Task 3	Video 1	5	5	0	0	0	2	12	18	0	18
		Part 2										
P1	Task 4	Video 1	0	0	0	1	0	0	41	0	0	69
		Part 3							1	0	0	0
P2	Task 4	Video 1	0	2	0	0	0	0	2	0	0	0
		Part 3										
P3	Task 4	Video 1	0	0	0	0	0	0	0	0	0	0
		Part 3										
P4	Task 4	Video 1	0	0	0	1	0	0	1	0	0	0
		Part 3										
P5	Task 4	Video 1	0	1	0	0	0	0	1	0	0	0
		Part 3										
									181			190
Participant										Totals of voluntary participation		
P1											8	
P2											17	
P3											9	
P4											37	
P5											22	

What are the learners' attitudes to the DI lesson?

Relevance of content and learning opportunities. Relevance of content. Consensus of participants' interest in the topic and how the types of holidays and activities reflected their individual preferences, reiterated the importance of *relevance*, an attribute of DI (Heacox, 2012, p. 5), a *determinant* of learner engagement (Janosz in Christenson *et al.*, 2012) and a key component to creating a sense of belonging at HE (Thomas, 2020, p. 72). P4's comment on wanting to "talk and write about what matters to us!" further reiterates the importance of relating content to their interests and future goals (Thomas, 2020) and indicates how DI related to *interests* alone can encourage learner engagement. Relevance appears to be the glue of engagement; "the connection between person and activity" (Russell *et al.* in Appleton *et al.*, 2006, p. 380). The pre-questionnaire pack allowed the design of content that reflected each participants' unique and individual identities, demonstrating "high respect" (Hattie, 2012, p. 26) for the learner-participants. In doing so, the relevant content helped create a supportive learning climate (Dörnyei, 2001) where participants felt engaged, interested and their needs met.

Relevance of learning opportunities. Despite the inaccuracy of assessing *readiness*, participants left positive feedback regarding the *relevance of the learning opportunities*. The tasks were designed in response to their self-reported and observed *readiness* to meet their "appropriate learning zone" (Tomlinson, 2014, p. 34). Even P5 who stated that he felt "confident" in the pre-assessment pack with all three can-do statements, welcomed the opportunity to practise speaking, and P3 positively reflected on the challenge. Due to *learning profile* data being varied, eclectic and occasionally contradictory, the *processes* and *products* were varied in choice and allowed participants to respond in a way that was relevant to them, in the moment, which seemed to encourage autonomy, another contributing factor to engagement (Janosz, 2012).

Variety of choice. Variety of choice was perceived, in the most part, as positive, especially with regard to choosing *content* or "what pupils learn" (Rogers, 1976 in Johnson, 1989, p. 26). Responding to "fundamental individual needs" (Janosz in Christenson *et al.*, 2012, p. 699), participants had choice of *content*, *process* and *product* and their feedback, combined with observational analysis, evidenced how choices "enhance their motivation to learn" (Subban, 2006, p. 938). However, participants' feedback relating to choice of *process* and *product* reinforces Blaz's suggestion of "not doing it exclusively" because "students don't always know (or choose) what is best for them" (2016, p. 12). There appears a need for a balance of *choice*, especially with regards to *process* and *product* and for the teacher to be the *diagnostician* (Tomlinson, 2014, p. 4); identifying and giving more structured support to learners to make informed choices and increase learning opportunities.

Time. Participants' positively responded to having more time to apply and learn what had been taught. One participant commented that the original teaching was "too short it

Participant	Indices of cognitive engagement (Quantative frequency)					Total
	Self-regulation	Relevance	Value of learning	Personal goals	Autonomy	
P1	6	3	5	0	0	14
P2	7	3	5	0	0	15
P3	1	0	2	0	0	3
P4	7	2	4	0	1	14
P5	6	3	4	0	1	14
TOTAL	27	11	20	0	2	60

Table 4.
Results from the group interview showing cognitive engagement

didn't register (P1 nods) (. . .) I had no memory of them" (P2), but the class allowed her to "try to work them out (. . .) Actually wrote them down then I understood the rule" (P2). This point of view was verbally agreed with by P4 who reflected: "actually do connected pieces ((P1 and P2 nod)) rather than simply I know the phrase for that, or I know the phrase for that" (P2). These comments highlight how time allows for the application of knowledge to "make their own sense of a topic" (Petty, 2006, p. 234) and thereby participate in active learning where they "build knowledge structures" (Papert and Harel, 1991). Time paired with relevant and appropriately challenging *content*, *process* and *product* could therefore contribute to a "high interest curriculum" (Tomlinson, 2014, p. 33), where learners have more time to attempt to "make sense and meaning of the world they inhabit" (Tomlinson, 2014, p. 78).

What are the teachers observer's (TO) perceptions of learner engagement?

The TO perceptions of learner engagement were positive, stating that they were "absolutely engaged" and "completely *emerged*", reflecting participants' own admissions. The TO noted the positive impact of responding to individual learner differences, noting they felt "*valued*" and were "learning at their own pace", comments that resonate with Tomlinson's (2014) principle of *creating environments that are catalysts for learning*. Valuing individual learner differences also suggests how DI can outwardly portray "high respect" (Hattie, 2012, p. 26) for its learners, a contributing factor to the "beneficial cycle of increased levels of engagement and increased adult support" (Appleton *et al.*, 2008, p. 374).

Despite the overarching positive feedback, the TO did make two critical observations: preparation time and class size. The comment on preparation time reflected findings from other research studies (Willard-Holt, 1994; Rock *et al.*, 2008) who found that DI takes too much time, with many teachers opting against it. However, its positive effect on learning suggests that perhaps "time may actually be saved as students engage in learning that responds to their needs" (Heacox, 2012, p. 14). The longer tasks, reflecting elements of Task Based Learning, could reduce teacher preparation time and simultaneously encourage learners to "engage dynamically with the language" (Bygate, 2016, p. 382).

The TO's second critical comment regarding how a larger class size could negatively affect teacher and learner interaction did raise concerns as the study's class size was admittedly smaller than average and much smaller than HE lectures and seminar classes. However, Blaz states that DI requires "focus on one aspect at a time" (2016, p. 15) and therefore with practice, development and greater awareness of DI by the learners and teacher, class size might not be an issue. With further practice and development, DI could be a long-term solution to the "one size fits all" approach (Tomlinson, 2014, p. 25) that stultifies learners (Wehlage *et al.*, 1989 in Christenson *et al.*, 2012, p. 495). Concluding that DI is "brilliant for retention I think this is the way forward", the TO's over-arching optimism positively reflects on DI as "heuristic or principle driven" (Tomlinson, 2014, p. 25) and identifies its potential role in augmenting learner levels of engagement and potentially, retention of language learners in HE.

Summary of findings

This small-scale AR study suggests the positive relationship between DI and learner levels of engagement in response to meeting the needs and wants of a small number of diverse language learners at university. After discussing the data gathered for the four research questions (RQs), the following key findings emerge:

Individual learner differences are varied and can be identified and responded to through DI
Interests seem the easiest for participants to accurately identify and of most value when designing relevant *content*, whereas *readiness* seems more difficult to accurately assess. That being said, DI raised my awareness of learner *readiness* and what seems necessary is further investment, development of formative assessments and better two-way feedback. Assessing *learning profiles* gave insight into learners' multiple learning strengths and preferences, a knowledge that perhaps unbeknown to the learners themselves, was used to optimum effect when designing instructional strategies that offered choice that varied "systematically to cater to individual learner differences" (Long, 2016, p. 7). Variety and choice of *content*, *process* and *product* were positively received by learners who felt engaged. However, it seems apparent that "students don't always know (or choose) what is best for them" (Blaz, 2016, p. 12) and therefore, the teacher's role is paramount in the success of DI and its effect on learner engagement.

Two-way feedback is pivotal in analysing and securing learner engagement through DI
Although this study did take learners' individual differences into significant consideration, through the pre-assessment pack, as well as course outcomes, it did not "provide learners with guidance of how to manage them" (Macintyre *et al.* in Hall, 2016, p. 319). More constructive and dialogic feedback on their individual differences could prevent inaccurate reports of *readiness* and promote engagement in all tasks (Tinto, 2012, p. 7), supporting learners to "believe they are capable of achieving success" (Rumberger and Rotermund in Christenson *et al.*, 2012, p. 503). Advocating such a student-centred approach might not only encourage dialogue, improve the teachers' understanding of learners' individual differences and learner engagement but could also "lead to meaningful learning gains" (Evans *et al.*, 2015, p. 7).

DI appears inclusive although not all learners engage with this approach equally
Analysing findings from all three "dynamically interrelated" (Fredricks *et al.*, 2004, p. 61) measurements of engagement makes apparent that learners engaged with DI differently, based on their own individual differences. All participants gave positive feedback on their engagement, reflecting "their attention and interest in the psychological process" (Marks, 2000, p. 154) of learning. DI allowed all participants to feel engaged and respond to the tasks with individualised levels of engagement.

Participants and teachers' share positive attitudes towards DI and its opportunity for tasks
Three key themes emerged from participants' feedback: *relevance*, *variety of choice* and *time*, all of which are embedded within DI's guiding principles (Tomlinson, 2014), recognising the effective nature of DI. The emphasis on the main task and time allocation positively reflect attributes of task-supported language teaching (TSLT) "not so they think like target speakers, but simply so that they engage dynamically with the language" (Bygate, 2016, p. 382). The tasks provided "an opportunity for additional communicative language use" (Bygate, 2016, p. 387) and allowed learners to develop and demonstrate communicative competence at level A1; to "understand and use familiar expressions" (Council of Europe), where the familiar expressions were situated within each participants' own wants and needs.

Limitations and recommendations

A major limitation of this study was its small-scale nature and what is therefore recommended is a longitudinal study into the relationship between DI and learner levels of engagement. Over a greater amount of time and different courses, with the analysis of potentially richer data, a longitudinal study could give further insight into DI and learner

engagement. It could also give further insight into teacher preparation time and if it will be saved (Heacox, 2012, p. 14) or whether responding to an even greater array of individual difference variables will be insurmountable (Rock *et al.*, 2008, p. 34). Findings from future studies could far exceed what has been found in this small-scale AR study and offer greater external validity (Cohen *et al.*, 2007, p. 186).

Conclusions

This AR study, within its own specific context of a university adult language course, has raised poignant issues relating to how we as HE teachers acknowledge and respond to learners' individual differences and its effect on learners' morale and engagement within the classroom. What has proved apparent is learners' positive acknowledgement of the conscious effort made to respond to their individual differences (Hattie, 2012) and their subsequent engagement in learning (Subban, 2006, p. 941), which could have further positive cyclical effects on engagement (Appleton *et al.*, 2008, p. 374). The participants' feedback positively acknowledged the importance of inclusivity; respecting, recognising and valuing individual differences, both visible and invisible, by innovating instructional strategies that are relevant, responsive and will maximise learner engagement. Therefore, strongly suggesting DI could offer the learning opportunities that lead to achieving the "high impact" of Evan's *et al.*'s HE strategy and encourage both teacher and "student behaviours that lead to meaningful learning gains" (2015, p. 7).

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Further reading

- Global scale - Table 1 (CEFR 3.3): common reference levels, in *Common European Framework of Reference For Languages* available at: <https://www.coe.int/en/web/common-european-framework-reference-languages/table-1-cefr-3.3-common-reference-levels-global-scale> (accessed 17 October 2017).
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Appendix 1
Participant pre-assessment pack

Tell me a little about you

Name _____ Age _____

Why are you learning French?

Out of the class and after the course, where do you intend to use French?

Languages I speak other than French and English:

Why I speak it:

_____	_____
_____	_____

Do any of your family members speak French and to what level of fluency?

Do you have any hobbies or interests? Please detail:

What is your highest qualification and area(s) of study?

Source(s): Adapted from *Cultural Capital Survey* in Blaz, (2016, p.22)

Pre-assessment for Unit 8: *Les Vacances et loisirs*

Name: _____

Class day/time: _____

Please put an "X" in the correct column and hand the form back to the teacher.

In French, I can:	Not at all	Somewhat	Quite Well
Talk about my last holiday			
Talk about what activities I did on holiday			
Talk about what I liked and didn't like			

LIST three things I would like to be able to do in French that are not listed above:

1. _____
2. _____
3. _____

Types of holidays I enjoy are (i.e. beach, city, adventure, etc.):

1. _____
2. _____

Countries I have enjoyed going on holiday to:

1. _____
2. _____

Countries I would like to go on holiday to:

1. _____
2. _____

Things I would like to know in French about holidays (tick all that apply):

____ Holiday activities

____ Holiday food and drink

____ Holiday clothes

____ Holiday destinations in France

Source(s): Adapted from Blaz (2016, pp. 37 - 39)

How do you like to learn?

1. Complete the questionnaire.
 2. Find the numbers you have answered YES to and turn the page to read the recommendation(s).
- Please note, you may have more than one learning styles

STUDENT QUESTIONNAIRE—How do you like to learn?

	Yes	No
1. I like to sit at a table or desk to do my work.		
2. I like to work on the floor.		
3. I like to learn by talking to others.		
4. I like to learn by looking at pictures and reading things.		
5. I like to learn by moving/doing things.		
6. I like to learn by hearing things.		
7. I work hard for my own benefit, rather than to please others.		
8. I work hard to please my parents and/or teacher.		
9. I work on something until it's done, no matter what.		
10. I work on something until I'm frustrated, and then quit.		
11. I like to work by myself.		
12. I like to work with a partner or in a group.		
13. I like to have things broken down into specific steps on how to do an assignment.		
14. I like to create my own plan for how to do an assignment.		
15. I like to have a specific amount of time to finish my work.		
16. I like to have unlimited time to do my work.		
17. I like to work where it's quiet.		
18. I like to have music/background noise when I work.		
19. I am most awake and alert in the morning.		
20. I am most awake and alert in the afternoon.		

Source(s): Adapted from Blaz (2016, pp. 20 - 21)

How Should I study?

Find the numbers you answered "Yes" to below, and read the advice.

(The more "Yes" answers you have for one section, the more important it is for you to do!)

3 and/or 5: AUDITORY LEARNER: You like to be told things. In class, join discussions, make speeches, and tell stories. Read aloud. Create musical jingles to aid memorization, and practice them whenever you can. Study with someone else and stop occasionally to talk over the information. Say words aloud to yourself. If studying alone (or during a test) imagine hearing the words on the paper. On a listening quiz, repeat the words very softly to yourself.

4: VISUAL LEARNER: You absorb new material better by seeing it. If there is a lecture, you *must* take notes and add pictures when possible. Ask your teacher for printed handouts or more examples on the board. Sit where you can see the teacher's body language and face. Ask to have things diagrammed. Use color to highlight important things in your notes. Seek out films, books, or articles on things you didn't grasp well in class. Make flash cards. Study in a quiet place away from verbal disturbances.

6: KINESTHETIC/SENSORY: Hands-on learning works best for you. You need to see, hear, and touch things to learn them. If possible, do your work on computers or typewriters. Watch films on the information you want to learn. Use language labs that use both recorded and visual materials. Flash cards would work well for you, especially if you sort them into piles using a system you invent.

7, 9, 11, 14: WORK WELL ON YOUR OWN: You can handle a big project or paper on your own and do really well in areas that interest you. You may not need feedback while working, but you definitely need recognition when you are done. Celebrate finishing, and if you don't get recognition, ask for it!

8, 10, 12, 13, 15: WANT FEEDBACK WHILE WORKING: You work best on short assignments, and prefer workbooks and assignments where things are broken down into small pieces. Ask someone for feedback while you are working! Break big projects down into smaller pieces, and set deadlines for yourself to get them done.

1, 18 MOVER: You need breaks every half hour or so. If you can't leave your desk, take a few really deep breaths, and alternately relax, tighten, and relax different body parts (your fingers, hands, and arms especially). Use bright colors to highlight reading, and skim through it to get the general idea, before really reading it carefully. Work while standing, riding an exercise bike, or pacing. Posters around you are good, and chewing gum while studying will help!

5, 17 SITTER: Study when and where the only interruptions will be the ones you choose. Try to avoid clutter. This will allow you to absorb information without losing your train of thought.

19 MORNING LEARNER: Try to schedule your most challenging classes in the morning, and don't start homework on Sunday night! Don't stay up late; set your alarm clock half an hour early to get up and review your notes.

20 AFTERNOON LEARNER: Take your most challenging classes later in the day. Also, rather than going home from school and turning on the TV, use those afternoon hours to do homework when you're at your best.

Source(s): Blaz, D. (2016, pp. 20-21)

What are your learning preferences and talents?

Part I

Complete each section by placing a "1" next to each statement you feel accurately describes you. If you do not identify with a statement, leave the space provided blank. Then total the column in each section.

Section 1

- ___ I enjoy categorising things by common traits
- ___ Ecological issues are important to me
- ___ Classification helps me make sense of new data
- ___ I enjoy working in a garden
- ___ I believe preserving our National Parks is important
- ___ Putting things in hierarchies makes sense to me
- ___ Animals are important in my life
- ___ My home has a recycling system in place
- ___ I enjoy studying biology, botany and/or zoology
- ___ I pick up on subtle differences in meaning
- ___ TOTAL for Section 1

Section 2

- ___ I easily pick up on patterns
- ___ I focus in on noise and sounds
- ___ Moving to a beat is easy for me
- ___ I enjoy making music
- ___ I respond to the cadence of poetry
- ___ I remember things by putting them in a rhyme
- ___ Concentration is difficult for me if there is background noise
- ___ Listening to sounds in nature can be very relaxing
- ___ Musicals are more engaging to me than dramatic plays
- ___ Remembering song lyrics is easy for me
- ___ TOTAL for Section 2

Section 3

- _____ I am known for being neat and orderly
- _____ Step-by-step directions are a big help
- _____ Problem solving comes easily to me
- _____ I get easily frustrated with disorganised people
- _____ I can complete calculations quickly in my head
- _____ Logic puzzles are fun
- _____ I can't begin an assignment until I have all my "ducks in a row"
- _____ Structure is a good thing
- _____ I enjoy troubleshooting something that isn't working properly
- _____ Things have to make sense to me or I am dissatisfied
- _____ TOTAL for Section 3

Section 4

- _____ It is important to see my role in the "big picture" of things
- _____ I enjoy discussing questions about life
- _____ Religion is important to me
- _____ I enjoy viewing art work
- _____ Relaxation and meditation exercises are rewarding to me
- _____ I like travelling to visit inspiring places
- _____ I enjoy reading philosophers
- _____ Learning new things is easier when I see their real world application
- _____ I wonder if there are other forms of intelligent life in the universe
- _____ It is important for me to feel connected to people, ideas and beliefs
- _____ TOTAL for Section 4

Section 5

- _____ I learn best interacting with others
- _____ I enjoy informal chat and serious discussion
- _____ The more the merrier
- _____ I often serve as a leader among peers and colleagues

- _____ I value relationships more than ideas or accomplishments
- _____ Study groups are very productive for me
- _____ I am a “team player”
- _____ Friends are important to me
- _____ I belong to more than three clubs or organisations
- _____ I dislike working alone
- _____ TOTAL for Section 5

Section 6

- _____ I learn by doing
- _____ I enjoy making things with my hands
- _____ Sports are a part of my life
- _____ I use gestures and non-verbal cues when I communicate
- _____ Demonstrating is better than explaining
- _____ I love to dance
- _____ I like working with tools
- _____ Inactivity can make me more tired than being very busy
- _____ Hands-on activities are fun
- _____ I live an active lifestyle
- _____ TOTAL for Section 6

Section 7

- _____ Foreign languages interest me
- _____ I enjoy reading books, magazines and web sites
- _____ I keep a journal
- _____ Word puzzles like crosswords or jumbles are enjoyable
- _____ Taking notes helps me remember and understand
- _____ I faithfully contact friends through letters and/or e-mail
- _____ It is easy for me to explain my ideas to others
- _____ I write for pleasure
- _____ Puns, anagrams and spoonerisms are fun
- _____ I enjoy public speaking and participating in debates
- _____ TOTAL for Section 7

Section 8

- _____ My attitude affects how I learn
- _____ I like to be involved in causes that help others
- _____ I am keenly aware of my moral beliefs
- _____ I learn best when I have an emotional attachment to the subject
- _____ Fairness is important to me
- _____ Social justice issues interest me
- _____ Working alone can be just as productive as working in a group
- _____ I need to know why I should do something before I agree to do it
- _____ When I believe in something I give more effort towards it
- _____ I am willing to protest or sign a petition to right a wrong
- _____ TOTAL for Section 8

Section 9

- _____ Rearranging a room and redecorating are fun for me
- _____ I enjoy creating my own works of art
- _____ I remember better using graphic organisers
- _____ I enjoy all kinds of entertainment media
- _____ Charts, graphs and tables help me interpret data
- _____ A music video can make me more interested in a song
- _____ I can recall things as mental pictures
- _____ I am good at reading maps and blueprints
- _____ Three dimensional puzzles are fun
- _____ I can visualise ideas in my mind
- _____ TOTAL for Section 9

Source(s): McKenzie, W (1999) *Multiple Intelligences Inventory online*. Available at <http://surfaquarium.com/MI/inventory.htm> [accessed 9 May 2017]

Task	Time/duration in minutes	Individual/ pair/group	Learning objectives	Fit with DI?
STARTER: Introduce each other and the lesson	5	Individual and group	To familiarise students with one another	Students feel recognised
ACTIVITY 1: 4 corners – Create a character	15 and 5 for the presentation	Group	To develop holiday lexis To revise/practice the passé compose	Differentiated holiday types bespoke to students Learning styles and strengths Choice Differentiated by choice in response
ACTIVITY 2: Watch video and respond (write/ memorise/draw) to question: what did she do/ where did she go? https://www.youtube.com/watch?v=Q_Ey56dshwM	10	Students choose	To develop listening comprehension skills To develop holiday lexis To develop cultural knowledge	All visual learners
ACTIVITY 3: Your holiday – you have just returned from Nice and you had an amazing/good/ok/ terrible time. Choose activities from around the room to learn about Nice and to say what you did. Choice of products: Email/ comic strip/role play/film	30	Individual or pair	To develop knowledge of France and its culture To expand lexis To implement passé compose	Activities relate to MI Products relate to LS Students have choice Difficulty levels
ACTIVITY 4: Students present their work and others remember what they did	15	Individual/ pair	To develop active listening comprehension To practice speaking To develop confidence	Display learning at the end Celebrate effort
PLENARY: TABOO, verbal, drawing or acting	10	Group – competition	To practice new lexis To receive and produce lexis	Display learning of new vocabulary To differentiate LS To give students choice

Table A1.
DI Lesson Plan

Corresponding author

Robyn Moallemi can be contacted at: r.steer2@brighton.ac.uk

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