

Choice and disadvantage in language studies: embedding innovative pedagogical approaches in outreach activities

Renata Albuquerque (ra40@soas.ac.uk)

SOAS, University of London, UK

Introduction

It is an exciting time for widening access and participation in English universities. Opportunities to develop a praxis-based framework for evaluating and researching widening participation activities, to engage in a dialogue with other practitioners and policy makers, and to inform the development of discourses around equality of access and outcomes abound.

Widening participation professionals are increasingly expected to deliver access, progression and success activities informed by sound educational research and pedagogical theories (Office for Students (OfS), 2018). Higher education institutions are looking at developing theories of change focused on supporting students to achieve the grades required for university entrance and on internal practices and procedures that mitigate or reinforce unequal achievement gaps and academic and professional outcomes. For now, there is no one theory of change accepted by all. I would argue that it is not the time to adopt a single theory but rather to test different theories and to examine how they can be best applied to different contexts.

SOAS (School of Oriental and African Studies) is well known for its deep expertise in regions that are increasingly to the fore in a rapidly transforming world. Given the rising importance of Asia, Africa and the Middle East, as well as of global processes and structures which affect these regions in multiple and complex ways, SOAS has a significant opportunity to make an even bigger impact on the world in the years to come.

Languages are central to SOAS. Through our languages, we enable our staff and students to understand and interpret both local and global contexts, to mediate between them, and to challenge critically one in terms of the other. Language learning in the UK continues to decline, however, and fewer secondary school students studying languages results in a smaller pool of applicants for degree courses in languages.

The Dearing Review of Languages in 2007 highlighted significant disparities in language up-take between schools. It showed that in the most disadvantaged state schools as few as 10 per cent of students were undertaking a language GCSE, compared with over 90 per cent in the independent sector (Dearing and King, 2007). Prior to that, both widely and less-taught language skills were described as a vulnerable subject, due to a mismatch between supply and demand, while being strategic to the UK's national interest (Higher Education Funding Council for England (HEFCE), 2005).

As a result, between 2008 and 2016, the then Department for Business, Innovation and Skills (as well as the Department for Education for a shorter period) funded Routes into Languages, a national programme aimed at widening and increasing participation in language studies. The London consortium of Routes into Languages, also known as Capital L, consisted of 14 partner universities. It was, and still is, based in SOAS' Widening Participation team and its achievements fed into SOAS' reports to the Office for Fair Access (OFFA) and now to the OfS.

In spite of the demographic trends, there is a dearth of research on the intersections between socio-economic background and language learning. Several studies have looked at motivation to study languages. Among the most useful stands Dörnyei and Ushioda's (2011) *Teaching and Researching Motivation*. However, few of the studies included in that analysis make reference to social context and none refer to the impact of social class on young people's motivation for and perceptions about learning languages.

Parallel to this, the world continues to metaphorically shrink. Learners have access to a wealth of resources that can be and are used for learning. It has become easier than ever to work and study abroad. Our focus groups

with year 12 students (16-17 year olds), aimed at learning more about the barriers and opportunities for positive transitions from GCSE to A level languages, revealed that successful language learners spent additional time accessing cultural artefacts like film, music, television, blogs, online magazines and more in the language they were studying. We have also met several students learning a completely new language (mostly Japanese, Korean or Arabic) in their own time.

It was in this context that a pedagogical model based on autonomous learning and creativity was first imagined. While the Dearing Review (Dearing and King, 2007) reported that young people would prefer to study languages they were interested in, our experience suggested that some young people were already taking the initiative to learn the languages of the cultures they felt passionate about. The question then was: how could languages outreach activities facilitate the kind of autonomous learning associated with successful academic outcomes and in this way support progression in languages studies?

In this chapter I will explain the theoretical framework underpinning SOAS' Languages Challenge, a resource based activity targeted at secondary school students aged 13 to 15 years old. It aims to encourage and support students to succeed in language studies through experiential learning and creative tasks. Now in its fourth year, the Languages Challenge was designed to be delivered at schools as an optional extra-curricular activity.

The Challenge is disseminated through SOAS' mailing lists, the Association of Language Learning bulletin, direct mail and social media. It is one of the few language resources suitable for after-school extra-curricular clubs. Extra-curricular activities have been found to have a positive impact on skills and on academic outcomes (Girls' Education Challenge, 2018) and tend to attract support from schools' senior leaders.

Registration on the Challenge has fluctuated year-on-year. On average 30 to 35 schools register each year. Of these, circa 25 per cent meet the SOAS priority widening participation schools criteria. Not all registered schools submit completed portfolios by the deadline. Around 10 schools from all over the country submit projects and attend the final celebration

event at SOAS. Although schools are asked to complete a pre-activity questionnaire, only one or two do so every year. As a result, for the last three years, evaluation has mostly relied on post-activity questionnaires applied at the celebration event.

Two focus groups with participating teams took place in July 2016. Findings led to a reduction in the maximum number of team members and in the number of tasks required, and to the introduction of role descriptions and individual reports. In 2017/18, two secondary school language teachers completed an action research project around their experience and that of their students as well as on outcomes for students. In addition to explaining the theoretical framework for the Languages Challenge, I will discuss some initial findings from previous years and suggest potential next steps.

Developing a framework for access

The Languages Challenge is the result of an inquiry into barriers and opportunities to progress in language learning at school, college and university. It is informed by theories on autonomous, cooperative and active learning in order to address issues around active versus passive learning, choice and perceived relevance, which are widespread in language studies.

David Little (1991: 4) defined autonomy as:

...a capacity – for detachment, critical reflection, decision-making, and independent action. It presupposes...that the learner will develop a particular kind of psychological relation to the process and content of his learning.

In his *Teaching and Researching Autonomy*, Phil Benson (2011: 47) defines autonomy as *the capacity to take control over one's learning*, arguing that the concept of 'control is more open to investigation' and that 'it is not necessary nor desirable to define autonomy more precisely...because control over learning may take a variety of forms in relation to different levels of the learning process'.

The proponents of Self-Determination Theory, Deci and Ryan, argued that autonomy is an inherent psychological need. They state that:

...the needs for competence, relatedness and autonomy...appear to be essential for facilitating optimal functioning of the natural propensities for growth and integration, as well as for constructive social development and personal well-being. (Ryan and Deci, 2000: 68)

In their 'A Meta-analysis of the Effectiveness of Intervention Programs Designed to Support Autonomy', Su and Reeve (2011: 160) argued that 'students are autonomous when they pursue their interests, study to satisfy their curiosity, and volitionally engage themselves in schoolwork'. Their definition of autonomy contains many similarities to the description of intrinsic motivation provided by Benson (2011: 23), where intrinsic motivation is described as 'behaviour performed for its own sake...for the pleasure and satisfaction of understanding something new, satisfying one's curiosity and exploring the world'. However, autonomy requires the learners to experience themselves as the initiator of the behaviour. It requires awareness of one's own actions.

Research has found that children behave differently when adults are in charge. Cohen and Lotan (1997: 197-198), for example, stated that 'without direct supervision, children are more playful, inquisitive and divergent on their thinking' and that 'shared decision-making among children under conditions of independence and autonomy...is critical to the children's cognitive development'. In addition, Ryan and Deci (2000: 74) argued that to understand why individuals show no initiative and fail to collaborate with school norms and health treatments, we should look at their environment 'to examine the degree to which their needs for competence, autonomy, and relatedness are being or have been thwarted'.

In developing the Languages Challenge, I adopted a definition of learning autonomy based on Benson's (2011) and Little's (1991). While Little provides a useful psychological perspective, Benson's take on autonomy as ultimately political is more closely aligned with widening participation's commitment to social mobility. Thus, the definition of

autonomy I employed is autonomy as a multidimensional capacity to take control of one's own learning and to make decisions at successive and/or interdependent levels of learning.

According to Benson (2011), autonomy may be exercised at three levels: learning management, cognitive processes and learning content. Autonomy at the level of learning management includes behaviours employed by learners to manage the organisation of their learning, such as metacognitive learning strategies and social and affective strategies. The second level refers to autonomy over cognitive processes, such as attention and reflection as well as metacognitive knowledge. Control over the content of learning is the third level of autonomy; Benson (2011) describes it as an expression of the learner's individuality and as the most controversial.

Benson's (2011) conceptualisation of different levels of control is helpful in that it allows for grouping behaviours. It facilitates observation, categorisation and analysis, while avoiding the temptation to list any behaviour that may indicate autonomous learning. Although interdependent, these different levels may also be differently emphasised in an individual's overall approach to learning. This allows us to envisage situations where a student may show greater autonomy in one level than another, and/or that teachers and the learning context may support learner autonomy differently such as when we speak of control over learning content.

Several authors have highlighted the importance of context to the development of autonomy. Cohen and Lotan (1997) explained that adult authority could be a barrier to the kind of peer interaction that forces children to confront complex situations. Patall and colleagues (2017: 337) studied adolescents' perceptions of teachers' practice and their experience of autonomy, and found that:

...teachers who engage in practices that are supportive of students' experiences of autonomy such as provisions of choice, rationales for the importance of the task, and structuring activities around students' personal interests facilitate student motivation.

Furthermore, there is agreement among researchers that autonomy does not equal independent or self-taught learning. Indeed, Viljo Kohonen (1992) proposed that collaborative decision-making is a key aspect of learner autonomy. In Kohonen's (1992: 19) own words:

Personal decisions are necessarily made with respect to social and moral norms, traditions and expectations. Autonomy thus includes the notion of interdependence, that is, of being responsible for one's own conduct in the social context: being able to cooperate with others and solve conflicts in constructive ways.

Kohonen (1992: 15) argued that experiential learning pedagogies require learners to be aware of their own attitudes and beliefs about learning, and that it is possible to help them become better learners by providing a framework to help them 'compare their task performances with the projected outcome'. Experiential learning methodologies have the additional benefit of providing students with opportunities to practice their language skills alongside developing autonomous collaborative behaviours. Yet, in the first years of the Languages Challenge, it became clear that learners required training in collaboration and negotiation if meaningful decision-making was to take place within teams. This was later confirmed in one of the action research projects, where students took part in a collaborative activity before the Challenge and the teacher observed improved negotiation and communication between team members.

Elizabeth Cohen's book *Designing Groupwork: Strategies for the Heterogeneous Classroom* (2014: 37) argues that well managed group work has the potential to address status issues in the classroom but 'if status characteristics are allowed to operate unchecked, the interaction of the children will only reinforce the prejudices they entered school with'. This is of particular importance to widening participation research. Differences based on race, gender and achievement impact on how students perceive and work with each other. There is much that can be done to address and promote greater equality in heterogeneous groups but it requires active awareness for as Cohen and Lotan (1997: 63) warned, 'status problems represent a powerful and persistent problem'.

In its *Thematic Review* of extra and co-curricular interventions, the Girls' Education Challenge (2018: 4), a UK Government organisation, concluded that:

Extra and co-curricular interventions provide good opportunities for promoting more gender equitable attitudes among a range of school stakeholders and are often the only opportunity for projects to introduce new teaching methods, including more student-centred approaches, and supplementary curricula.

Status issues impact on learning behaviours in many different ways. Benson (2011: 52) argued that 'the essence of genuinely autonomous behaviour is that it is self-initiated'. However, the ability to take control of one's own learning is informed by learners' own beliefs and perceptions as well as by experiences and contexts that either reward or thwart autonomy. Researchers have consistently highlighted the key role of reflection in supporting learners to overcome self-limiting beliefs and become more aware of the outcomes of their choices.

Kohonen (1992: 17), for example, argued that 'simple everyday experience is not sufficient for learning. It must be observed and analysed consciously'. Benson (2011: 93) also stated that reflection 'can be seen as [a] key internal mechanism for the development of control over learning', and Candy (cited in Benson, 2011: 93) suggested that 'maintaining learning journals, analysing their own approaches to learning, and discussing their beliefs and approaches to learning in groups or with a facilitator' are useful methodologies for making the connection between learning strategies and outcomes, and ultimately for developing a personal sense of control.

Embedding pedagogical principles in learning resources

The Languages Challenge is a resource-based activity designed to be delivered in schools as an extra-curricular activity. In his classification of the approaches to the development of autonomy, Benson (2011: 113) proposed that:

Resource-based learning offers learners the opportunity to exercise control over learning plans, the selection of learning materials and the evaluation of learning. Learners are expected to develop the skills associated with these activities through a process of experimentation and discovery, in which freedom of choice is a crucial factor.

Resource-based approaches are particularly useful to widening participation practitioners in that they contain the potential for sustained, rather than one-off, interactions. Revision classes, in-school mentoring and other such activities have their place but are not in themselves enough. The Languages Challenge is available to schools around mid-September. The deadline for submitting the completed portfolio of tasks is the end of March, which means students have in theory around six months to complete five tasks.

The kind of behaviour change associated with resource-based activities for autonomous learning, if sustained, can have lasting impact on learners' academic experience. It includes the potential for more successful transitions between GCSE and A level, and between school and university. As students progress in their studies, the emphasis on autonomous learning behaviours increases. Yet, there is little evidence that students are being prepared for taking responsibility for their own learning.

A recent study commissioned by the Royal Society of Chemistry (Mujtaba et al., 2018) found that participation in extra-curricular activities delivered at school has the potential to raise students' aspirations to study science beyond GCSE. The study focused on how students' background and home context, their attitudes and beliefs, and their experiences of particular teaching approaches might limit or facilitate their aspirations to study science. Findings include a strong association between students' aspirations to study non-compulsory science and extrinsic motivation or the perceived value of science as a career. This was closely followed by intrinsic interest in science, and *engagement in extra-curricular activities*.

Most research on autonomy in language learning using resource-based approaches refers to self-access centres and adult learning. The Languages Challenge is innovative in aiming at secondary school students and also

in how it is informed by research findings in cooperative learning and extra-curricular activity to provide a coherent account of why it might be effective, to borrow a phrase from the OfS' (2018) guidance on evaluating outreach.

In designing the Languages Challenge, it was essential to consider how the principles and practices associated with autonomy could be adapted to a younger audience and still fulfil the potential of resource-based approaches to encourage autonomous interaction with learning materials. Following the principles outlined previously, the materials should provide students with, at minimum: choice, opportunities for discussion and shared decision-making, and time for critical reflection before, during and after task completion. Students should also have access to a framework to help them compare their task performance with the projected outcome. In addition, it is also important that tasks are closely aligned with learners' own interests while simultaneously providing them with opportunities to use their language skills actively.

Thus, participation in the Languages Challenge should be optional; students are expected to complete tasks outside school-time as an extra-curricular activity. The resources also provide participants with choice of tasks, of languages, and of the medium used to complete them. Group work facilitates, though it does not guarantee, thinking out loud, discussion, analysis and collective decision-making. Reflection is further enabled through the individual reflective report.

Participation in the Challenge is encouraged through a dissemination campaign at schools including posters and presentations at assemblies. Students are invited either to form their own teams or to join a team of other interested students. In our instructions to teachers, we recommend that they encourage heterogeneous teams in terms of socio-economic background, academic achievement and race/gender/ability. This has not always been possible. Some of the teachers delivering the Challenges at their school have a remit for gifted and talented students; others work only with students on the pupil premium.

Eight cross-curricular task outlines are provided in the Student Pack. Teams must discuss and decide which five tasks they wish to perform. They are prompted to list team members' skills and knowledge before shortlisting tasks. Any language other than English is allowed and many teams use members' heritage languages for one or more tasks. In 2017, students used 24 languages to complete the tasks. In 2018, that number rose to 35. There was evidence of students teaching each other their heritage languages, including a well reproduced scene from Harry Potter in Amharic where all five team members had speaking parts but only one was a heritage speaker. Students have often read their lines, but on this particular occasion all team members memorised their lines for the film.

Teams also have choice over which media to use and are encouraged to use their creativity and a variety of media. PowerPoint presentations are far more popular than is desirable but students have also produced many interesting films, posters, comics and sound recordings. In 2017, we introduced a programming task to tap into young people and schools' interest in this area. That year we received only one entry under this category, but in 2018 there were seven. We have also introduced a science experiment task that has proven to be a success, not only with students but also with teachers. Language teachers have let us know how the science and other tasks have engendered closer relationships between their departments and Drama, Geography, IT and Science. There is also some evidence that participation in the Challenge has helped motivate high achieving science students at risk of disengaging with language learning.

An entry form provides scaffolding for teams making collective decisions about the tasks and the languages they will use for them. This process can be very time consuming and it is an ideal opportunity to train students in cooperative work. Often students have negative experiences of group work. This could be the result of tensions between participants, unequal distribution of responsibilities and/or control over the decision-making process. In the first years of the Challenge it was possible to observe status inequalities in many of the films submitted by students. As a result, we created a team-building workshop, which we have made available to all participating schools.

The workshop contains exercises and games aimed at encouraging students to learn more about each other and develop listening and negotiation skills. As Cohen (2014: 41) puts it, ‘People rarely learn new behaviours or convictions about how one ought to behave through lectures or general discussion alone’. In 2018, we offered improved versions of this workshop at an event held at SOAS to coincide with the European Day of Languages, which is celebrated on 26 September. Trained Student Ambassadors delivered these workshops. This had the added benefit that teachers could observe Student Ambassadors managing teams’ interactions to ensure that all members had equal chance to contribute **their** own ideas. In their feedback teachers also told us how impressed they were with their students’ creativity. These are important realisations if teachers are to allow their students that level of choice and responsibility.

Two other scaffolding tools have been provided in the resources to enable successful teamwork: role descriptions and teamwork as one of the success criteria. Asking students to take on specific roles has been found to support effective group work and to help address status inequalities (Cohen, 2014). Cohen (2014: 87) explains that:

...when each person’s job is given a name and is accompanied by a list of expected behaviours...[it] alleviates problems of nonparticipation or domination by one member.

Five is the maximum number of students allowed in each team. There are five role descriptions and teams must choose five of the eight tasks outlined. Team members are expected to perform a different role in each task so that all have the opportunity to lead, produce and be the lead linguist, etc.

The success criteria aim to provide students with a standard in which to compare their performance with the projected outcome. As explained by Kohonen (1992) comparisons yield learning experiences which have a cumulative effect on the learners’ cognitive and affective development. Furthermore, peer evaluation is to be expected during group work. The success criteria aim to communicate high expectations while simultaneously providing a framework for discussion and decision-making. They are

further aligned with recommendations that teams rehearse, produce multiple drafts and reflect on what has been produced before submitting the final version of that task.

The success criteria in the Languages Challenge are mainly concerned with students' behaviour rather than attainment. The five success criteria used are: knowledge gained, creativity, presentation, collaborative teamwork and language. Knowledge gained is concerned with originality: students should produce their own work rather than copy and paste from elsewhere. Many young people seem to think it is not possible to check the originality of their submission. Creativity and presentation have similar functions. Collaborative teamwork was a later addition in response to evidence of status issues and non-collaboration. We have seen immediate evidence of improvement in positive group work behaviour after it was added to the success criteria.

The success criteria are also used to provide a winner in each task category as well as an overall winner. Although one of the resource's primary aims is to encourage group work in language studies, teachers and their students have told us that competitions are more motivating. However, the difficulties in providing equitable assessment across 35 different languages are not to be underestimated. Winners are announced at the final event when all teams who submit a complete portfolio of tasks are invited. Students and their teachers are reminded of the breadth of languages and assessors involved in evaluating students' work. The benefits of intrinsic motivation and of creativity for language learning are also spelled out.

To encourage critical reflection on their experiences and achievements on the Languages Challenge, students are required to complete a short reflective report and submit it with their portfolio of tasks. Until 2017/18, the report was completed by a specific role-holder and was task focused. The results were more a narrative than a critical analysis. There was little or no discussion on the planning and performing stages of the task. There was some evidence of teachers writing reports for their students and there were many formulaic models copied by team members. In the 2018/19 edition of the Challenge, students have been asked to complete individual reports about their whole experience. Draft instructions on how to

complete it were sent to two schools for comments. The reporter role was deleted and in its place there is a now a participation leader, whose task is to ensure all team members are equally active.

Evaluation

Evaluating the Languages Challenge has relied mostly on post-activity questionnaires. School teachers have been asked to run a pre-activity questionnaire but this has proven difficult to enforce. We have run focus groups with teams from two schools after the second year of delivery. Findings have been very helpful in refining the structures aimed at fostering the behaviours associated with autonomy.

The post-activity questionnaire contains a mixture of open and closed questions aimed at eliciting indicators of autonomous learning, intrinsic motivation, cooperative learning and enjoyment. Among the most important findings from last year's evaluation was the number of students who reported having fun with language learning and having changed their minds about the benefits and relevance of language learning. Post-activity evaluation revealed that students found it 'really fun and allowed [them] to be creative' and that the Languages Challenge made them 'open up to more challenging languages'. When asked whether they think participation in the Challenge will impact their achievement, students reported reaping benefits on speaking skills, acquiring new vocabulary, improving pronunciation and increasing motivation and confidence. Students said they felt inspired and, more significantly, that 'it changed [their] opinion of languages'.

In 2018/19, we have engaged an external evaluator researcher and have enlisted the support of a number of schools, registered to deliver the Challenge, to conduct more robust evaluation. In addition to pre and post-activity questionnaires, we have offered to run random control trials, where one team will complete the Challenge before the other, thus ensuring no one is denied the opportunity to take part if the motivation is already there. In addition, the new format of the student report may provide in-depth information about students' internal conversations.

Engaging teachers in this research could potentially help us better support colleagues who find running the Challenge at their schools difficult due to the requirements of the curriculum. Informal feedback from teachers revealed that the start of the project is often delayed and that students spend varying amounts of time working on tasks. There has been significant evidence of teachers choosing tasks for students and telling them how to complete them. Any evaluation of the Challenge must include questions of implementation and it may well be that the number of schools running the Challenge as it was designed remains small.

The Challenge's pedagogical framework provides a breadth of specific indicators of impact capable of being evaluated through quantitative and qualitative data collection methods. Should a causal pathway between participation in the Challenges and learners' outcomes be found, it would most likely be due to changed behaviours. A theory of change applicable to other contexts may then be developed but issues of implementation will be key to that.

Concluding remarks

In searching for innovative pedagogies, widening participation practitioners are required to pilot and review practices employing the best evaluation tools at their disposal. Engaging teachers and securing information about academic progress has its own pitfalls. Many factors impact on learners' attainment and it is important to recognise that participation in widening participation or extra-curricular activities is but one of many areas impacting on students' outcomes.

Widening participation in language studies presents its own difficulties. Progression in language studies is on the decrease. Students and parents find it hard and, frequently, irrelevant. Routes into Languages has developed resources highlighting career opportunities for language graduates beyond teaching and interpreting and translation. However, unless employers ask for these skills and knowledge on job adverts and job descriptions, perceptions of irrelevance will persist.

We are excited about the current research exercise. Findings will feed into the development of an innovative, praxis-based theory of change.

Pressures on teachers related to the curriculum and to schools league tables might still prove to be the biggest hurdle to successful implementation, with teachers in the most deprived schools generally more vulnerable to these kinds of pressures. We will continue to disseminate our findings among policy makers and teachers' organisations. The challenge for better outcomes for disadvantaged learners can only be achieved if we all work together.

References

- Benson, P. (2011) *Teaching and Researching Autonomy. 2nd Edition. Applied Linguistics in Action Series*, Harlow, England and New York: Longman/Pearson.
- Banerjee, P. A. (2017) 'Is informal education the answer to increasing and widening participation in STEM education?', *Review of Education* 5: 202-224. <https://doi.org/10.1002/rev3.3093>.
- Breen, M. P. and Man, S. (1997) 'Shooting Arrows at the Sun: Perspectives on a Pedagogy for Autonomy' in P. Benson and P. Voller (Eds) *Autonomy and Independence in Language Learning*, London: Longman.
- Cohen, E. G. (2002) 'Cooperative Learning and the Equitable Classroom in a Multicultural Society', paper presented at the *LASCE Conference*, Manchester, England, June 2002.
- Cohen, E. G. and Lotan, R. A. (Eds) (1997) *Working for equity in heterogeneous classrooms: sociological theory in practice, Sociology of education series*, New York: Teachers College Press.
- Cohen, E. G. and Lotan, R. A. (2014) *Designing Groupwork: Strategies for the Heterogeneous Classroom, 3rd Edition*, New York: Teachers College Press.
- Dearing, R. and King, L. (2007) *The Language Review*, London: Department for Education and Skills.
- Dörnyei, Z. and Ushioda, E. (2011) *Teaching and Researching Motivation. 2nd Edition. Applied Linguistics in Action Series*, Harlow, England and New York: Longman/Pearson.
- Fousiani, K., Van Petegem, S., Soenens, B., Vansteenkiste, M. and Chen, B. (2014) 'Does Parental Autonomy Support Relate to Adolescent Autonomy? An In-Depth Examination of a Seemingly Simple Question', *Journal of Adolescent Research* 29, 3: 299-330. <https://doi.org/10.1177/0743558413502536>.
- Girls' Education Challenge (2018) *Thematic Review: Extra and Co-Curricular Interventions, GEC Thematic Reviews*, London: Girls' Education Challenge. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/730863/TR-Extra-Cocurricular-Interventions.pdf (accessed 19 March 2019).

- Higher Education Funding Council for England (HEFCE) (2005) *Strategically important and vulnerable subjects. Final report of the advisory group*, Bristol: HEFCE. Available at <http://image.guardian.co.uk/sys-files/Education/documents/2005/06/28/shortage.pdf> (accessed 19 March 2019).
- Kohonen, V. (1992) 'Experiential Language Learning: Second Language Learning as Cooperative Learner Education' in D. Nunan (Ed.) *Collaborative Language Learning and Teaching*. *Cambridge language teaching library*, Cambridge, England and New York, NY: Cambridge University Press.
- Little, D. (1991) *Learner Autonomy, 1: Definitions, Issues and Problems*, Dublin: Authentik Language Learning Resources.
- Mayne, J. (2015) 'Useful Theory of Change Models', *The Canadian Journal of Program Evaluation* 30, 2: 119-142. <https://doi.org/10.3138/cjpe.30.2.142>.
- Mujtaba, T., Sheldrake, R., Reiss, M. J. and Simon, S. (2018) 'Students' science attitudes, beliefs, and context: associations with science and chemistry aspirations', *International Journal of Science Education* 40, 6: 644-667. DOI:10.1080/09500693.2018.1433896.
- Office for Students (OfS) (2018) *Regulatory Advice 6: Good Practice Advice on the Preparation of Access and Participation Plans for 2019-20*, Bristol: Office for Students. Available at https://www.officeforstudents.org.uk/media/1105/ofs2018_06.pdf (accessed 19 March 2019).
- Patall, E. A., Vasquez, A. C., Steingut, R. R., Trimble, S. S. and Pituch, K. A. (2017) 'Supporting and Thwarting Autonomy in the High School Science Classroom', *Cognition and Instruction* 35, 4: 337-362. <https://doi.org/10.1080/07370008.2017.1358722>.
- Ryan, R. M. and Deci, E. L. (2000) 'Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being', *American Psychologist* 55: 68-78. <https://doi.org/10.1037/0003-066X.55.1.68>.
- Su, Y. and Reeve, J. (2011) 'A Meta-analysis of the Effectiveness of Intervention Programs Designed to Support Autonomy', *Educational Psychology Review* 23, 1: 159-188. <https://doi.org/10.1007/s10648-010-9142-7>.