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4. Impact of Virtual Exchange on teachers' and student teachers' motivation levels

Introduction

Motivation is a crucial factor in all aspects of a teacher's life, starting from the decision to pursue the profession to performing at their best within the classroom. Teachers often highlight various factors that influence their motivation, such as "fair promotion system, adequate resources, an excellent working environment, incentives, income, job security, pleasure at work, training, and development, good organizational guidelines, and performance appraisal" (Kumari & Kumar, 2023, p. 9). According to Dörnyei and Ushioda (2001), it is essential to distinguish between two aspects of teacher motivation: the motivation to teach and the motivation to sustain a career in the profession. The factors affecting motivation to teach can differ between individuals at different stages of their teaching careers. In their comprehensive review of teacher motivation studies, Han and Yin (2016) highlight that personal characteristics, social and cultural context, intrinsic values (such as perceptions, expectations, responsibilities and concerns about teaching) and extrinsic values (such as social status, job security, job transferability and time for family) are the main factors that trigger student teachers' motivation to teach. For teachers, the authors emphasise the significance of various factors, including teacher autonomy, professional input, professional development, professional relations and ties, and the working environment that encompasses leadership, working relationships and institutional support. They also highlight the importance of intrinsic values like self-evaluation and intellectual stimulation, and extrinsic values such as financial benefits, family and community influence, and the convenience and benefits of teaching. In addition, Han and Yin (2016) report on some challenges or demotivating factors, including stress,

administration, inadequate career structures and teaching repetitiveness. They discuss the lack of teacher autonomy, particularly in relation to insufficient self-efficacy, and emphasise the significance of extrinsic values like low salaries and limited research opportunities. Furthermore, the authors address the impact of students' attitudes and behaviours as demotivating factors that affect teachers' motivation, hindering the sustainability of a career in the profession.

The declining appeal of the teaching profession in recent decades suggests that these aspects might have been overlooked or disregarded (Shikalepo, 2020). The importance of motivating teachers cannot be overstated as it has a direct impact on learner performance, which in turn affects the quality of education provided to learners. Consequently, motivating teachers is vital to boost their self-confidence, thereby facilitating exceptional learner performance. It is noteworthy that inadequately motivated teachers tend to result in low levels of learner achievement. In this context, Virtual Exchange (VE) emerges as a promising approach to address this issue as it offers opportunities for collaborative learning, cross- cultural understanding and enhanced teacher- student engagement.

The present study delves into the examination of motivation, focussing specifically on the perspectives of teachers and student teachers., and adopts the Self-determination Theory (SDT) (Ryan & Deci, 2000) as its theoretical framework for the analysis. Even though quantitative analysis failed to show statistically significant increase in the motivation levels of teachers and student teachers, the study presents in-depth results from a qualitative analysis, offering valuable insights into their motivation levels when participating in VEs in the VALIANT (Virtual Innovation and Support Network) project. The study shows which aspects they found to be more motivating and those which were less successful at maintaining their motivation levels.

Self-Determination Theory

Self-Determination Theory (SDT) focuses on people's personality, inherent growth tendencies and innate psychological needs (Ryan & Deci, 2000) on the psychological rather than on the sociological or physiological

levels. It is also a theory of human motivation interested in examining phenomena across various factors, such as gender, culture, people's age and socioeconomic status (Deci & Ryan, 2015). SDT identifies what stirs people into action and how they behave in various domains of their lives. The theory has undergone many revisions throughout the decades, and the present chapter focuses on Ryan and Deci's (2000) review of the theory. The three levels of motivation that are analysed vary from high to low self-determination and are (a) *intrinsic motivation*, (b) *extrinsic motivation* and (c) *amotivation*. When *intrinsically motivated*, a person is inwardly moved to do something out of inherent enjoyment, or as a source of satisfaction. *Extrinsic motivation* involves a separable outcome and is driven by external rewards. Finally, *amotivation* refers to having neither internal nor external motivation to engage in a specific activity, accompanied by lack of purpose or volitional drive to perform it.

Ryan and Deci (2000) further elaborate on different levels of motivation according to its relative autonomy. They further propose that at the far left of the *extrinsic motivation* continuum, resides the most autonomous form which is called *integrated regulation*. Integration occurs when people have evaluated and accepted the cause of action according to their own values and needs. It is an externally motivated action since people's motivation for their behaviour relates to a separate outcome apart from their own reward or inherent enjoyment. For example, exercising and being physically active becomes consistent with one's beliefs about maintaining a healthy lifestyle.

The second most autonomous form of extrinsic motivation is *identified regulation*, which means that people consciously value a goal based on what is personally important to them. An example of identified regulation is when students study very hard to pass their university-entrance exams because studying at a university is a goal they have set for themselves and for their future.

Introjected regulation is the next form of extrinsic motivation through which people may be internalising regulation but not fully taking responsibility for it. They may behave in a certain way to avoid anxiety or guilt and to find a way to enhance their pride. An example of *introjected regulation* by Ryan and Deci (2000) is when people feel motivated to show their abilities to ensure they still feel worthy. Finally, the least autonomous form of extrinsic motivation is referred to as *external regulation*, involves behaviour driven by external rewards (tangible or not) or the satisfaction

of certain demands. Students who study hard to get good grades to receive a material reward from their parents is an example of external motivation. Figure 4.1 illustrates the motivation continuum.

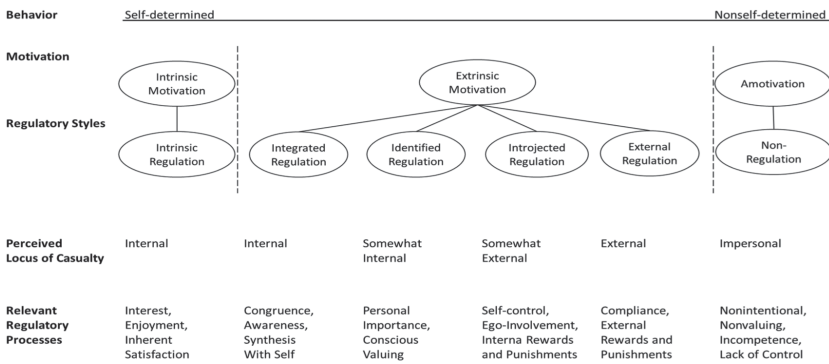| Behavior	Self-determined					Nonself-determined
Motivation	Intrinsic Motivation		Extrinsic Motivation			Amotivation
Regulatory Styles	Intrinsic Regulation	Integrated Regulation	Identified Regulation	Introjected Regulation	External Regulation	Non-Regulation
Perceived Locus of Casualty	Internal	Internal	Somewhat Internal	Somewhat External	External	Impersonal
Relevant Regulatory Processes	Interest, Enjoyment, Inherent Satisfaction	Congruence, Awareness, Synthesis With Self	Personal Importance, Conscious Valuing	Self-control, Ego-Involvement, Interna Rewards and Punishments	Compliance, External Rewards and Punishments	Nonintentional, Nonvaluing, Incompetence, Lack of Control

Figure 4.1: The self-Determination Continuum (Adapted from Ryan and Deci, 2000, p. 72)

Within the realm of education, Fernet et al. (2008) undertook a study that sought to apply the SDT by developing the Work Tasks Motivation Scale for Teachers (WTMST), a measure of teachers' motivation towards specific tasks. According to the authors, teachers' motivational processes may vary towards the tasks they perform.

Motivation in Virtual Exchange

Although the impact of motivating teachers and student teachers to deliver quality education to learners is essential, there is a lack of research examining the motivation levels of teachers and student teachers together when it comes to their VE participation.

When it comes to different motivation levels recorded in VE projects, Demir and Kayaoğlu (2021) referred to mixed motivation levels among students and teachers in an eTwinning VE project. Specifically, the

project provided the students with real-world experiences that increased their motivation, engagement and enjoyment. On the other hand, the lack of coordination and collaboration with the partner teacher abroad caused a teacher to experience reduced motivation levels. In another study, various factors such as the students' different expectations for the project, their differences in motivation and use of time, and other social and institutional factors leads to caused the phenomenon of "missed" communication and understanding of what was expected (Ware, 2005). The intercultural aspect of VEs also increased participants' motivation to communicate in the target language. More specifically, the value of new knowledge gained to improve skills in EFL was acknowledged by Korean student teachers in a study that connected them with American student teachers: the Korean teachers felt the project motivated them to practise their EFL writing and grammar (Yang, 2020). Similarly, in a study by Ko et al. (2015), the development of intercultural competence of Physical Education (PE) graduate students between an American and Korean university was investigated. The researchers found that participation in this project motivated the participating PE professionals to learn about a different culture, improve their communication skills with students from other countries and infuse cultural themes into their teaching practice.

Other studies have observed that the involvement of participants in VE leads to an increase in *intrinsic motivation*. For instance, Ramírez-Lizcano and Cabrera-Tovar (2020) reported on a VE project between 6th-grade students at a private school in Colombia and two international partners from France and Sweden. The authors demonstrated that participants felt motivated when using English as a foreign language in other settings rather than at the school, expressing happiness and enjoyment when doing so. Similar findings were recorded by Nicolaou and Sevilla Pavon (2023) who investigated the extent to which university English for Specific Purposes students' participation in the YES3D (Youth Entrepreneurship for Society in 3D) in Virtual English as a lingua franca (VELF) affected their beliefs of their self-efficacy and their motivation to learn English. Apart from being intrinsically motivated, learners also considered learning English important as it was likely be useful in their future professional lives. Furthermore, the learners valued acquiring new technological skills.

The present chapter aims to enhance our comprehension of motivational patterns, focussing on both teachers and student teachers who took part in VALIANT VEs. To do so, the study explores the following research questions:

RQ1: To what extent have the VALIANT VEs impacted participants' perceived change in levels of motivation to study/work?
RQ2: What motivated participants to join the VALIANT VEs?
RQ3: How have the VALIANT VEs influenced participants' motivation to teach?

To answer RQ1, closed-ended items from pre-VE survey and post-VE survey that measured participants' perceived levels of motivation before and after the VE were analysed. Three types of regulatory styles from the self-determination continuum of motivation in a context of studying or working were measured: *intrinsic regulation, identified regulation,* and *external regulation* (see Figure 4.1). The items pertaining to the three types of regulations used in the surveys were:

Intrinsic regulation
        Because I enjoy studying/doing my job.
        Because what I do in my studies/work is stimulating.
        Because what I study/the work I do is interesting.

Identified regulation
        Because I personally consider it important to put effort into my studies/work.
        Because putting effort into my studies/work aligns with my personal values.

External regulation
        Because others will respect me more (e.g., supervisor, colleagues, students).
        To avoid being criticised by others (e.g., supervisor, colleagues, students).

In order to answer RQ2 and RQ3, open-ended questions were included in the pre-, mid- and post-VE surveys:

Pre-VE survey questions:

Why are you interested in taking part in a Virtual Exchange with teachers and student teachers?

What do you hope to achieve or learn from this Virtual Exchange?

Mid-VE survey questions:

In your VE project you are using different online tools for communicating and presenting information. Have you learned something new about technology that might be applied to your own teaching? If possible, give a concrete example to illustrate your answer.

Has your VE project impacted on how you see your current work situation or your career? If so, how? If possible, give a concrete example to illustrate your answer.

Post-VE survey questions:

Has your experience in the VE influenced how you approach your teaching/teaching career or your continued studies as a student teacher? If possible, give a concrete example to illustrate your answer.

Have your expectations about what you hoped to learn or achieve in the VE been fulfilled? Why / why not?

For more details about the motivation survey, data collection and analysis, please see chapter 3.

Main Quantitative Findings

Answers to the close-ended questions in the pre- and post-VE surveys allowed us to answer RQ1 which examined the impact of VEs on participants' levels of motivation to study or work. Overall, there was no or negligible change in the perceived levels of motivation to study (student teachers) or work (teachers). Most of the participants scored relatively low in their levels of *external regulation* and quite high on their levels of *identified regulation* and *intrinsic regulation* (i.e., intrinsic motivation) at the start of their VEs. The Wilcoxon Signed Rank test was used to test if the difference between the pre- and post-VE surveys scores was significant. The results showed that there was no significant difference

in the levels of perceived external regulation, but there was statistically significant increase in perceived *identified regulation* ($Md_{pre\text{-}VE\ survey}$ = 91, $Md_{post\text{-}VE\ survey}$ = 92, z = -2.452, $p < 0.05$, r = -.12) and perceived *intrinsic regulation* ($Md_{pre\text{-}VE\ survey}$ = 77.5, $Md_{post\text{-}VE\ survey}$ = 81.3, z = -4.091, $p < 0.01$, r = -.19). However, the effect size (r) indicated that these perceived changes lacked practical significance. Thus, from a quantitative perspective, it seems that VE had little effect on the participants' perceived motivation levels. The results are summarised in Figure 4.2.
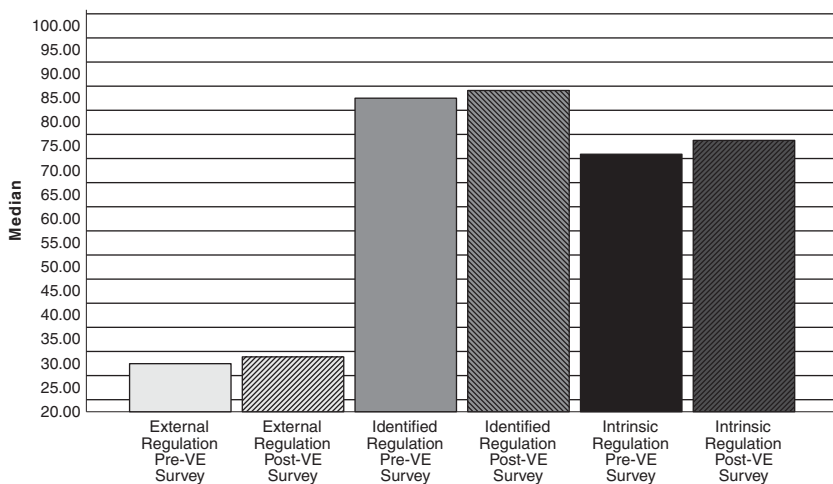

Figure 4.2: Median for the Pre-VE questionnaire and Post-VE questionnaire Scores for External Regulation, Identified Regulation and Intrinsic Regulation

The type of VE had a small effect on motivation. There was a statistically significant but practically negligible effect in one type of the VE where the teachers and student teachers collaborated closely. In those exchanges, participants showed a statistically significant but negligible increase in perceived *identified regulation* ($Md_{pre\text{-}VE\ survey}$ = 91, $Md_{post\text{-}VE\ survey}$ = 91.75, z = -2.49, $p < 0.05$, r = -0.15) and perceived *intrinsic regulation* ($Md_{pre\text{-}VE\ survey}$ = 76, $Md_{post\text{-}VE\ survey}$ = 80, z = -3.441, $p < 0.001$, r = -0.21). It is important to note that this type of exchange consisted mainly of student teachers with just a couple of teachers. There were no changes observed in the other two types of VEs i.e., (1) teachers only and (2) student teachers only.

Overall, quantitative data analysis indicates that the VALIANT VEs did not substantially impact teachers' and student teachers' motivation to study or work. Participants reported quite high initial levels of *identified regulation* and *intrinsic regulation*, which likely resulted in post-VE surveys not fully capturing any perceived change in motivation after VE completion. Although some changes in levels of motivation were statistically significant between pre-VE survey and post-VE survey scores, these changes lacked practical significance. However, quantitative data analysis only provides a partial picture and cannot capture more nuanced aspects of participants' VE experience. To better understand the impact of the VE on motivation, RQ 2 and 3 were answered using qualitative data analysis of the open-ended questions in the surveys.

Framework for Qualitative Analysis: Codebook

As already mentioned in the introduction, the self-determination theory (Ryan & Deci, 2000) was used to determine the participants' level of motivation for joining the VE but also whether the VE had an impact on their motivation to teach. The analysis was completed using essentially a thematic analysis approach, however the frequency of codes were also recorded. The analysis included both a deductive and an inductive approach since, while working with the original framework, the inductive approach was used as well, as some specific themes emerged (see Table 4.1). The codebook included all 3 types of motivation (*intrinsic motivation, extrinsic motivation*, and *amotivation*), all 6 regulatory styles (see Figure 1), and a third level of coding that emerged from our analysis. Table 4.1 presents an overview of the themes that emerged in our analysis, categorised based on the SDT.

Table 4.1. Codebook and examples

CODE	SUB-CODE	THEMES	DEFINITION	EXAMPLE	FREQUENCY
(1) Intrinsic motivation	(1.1.) Motivation to join the VE		This code includes statements in which participants reported their intrinsic motivation to join the VE.	I am really interested in learning more about the value of Virtual Exchanges. This is an opportunity to learn with and from others. Learn other points of views and improve my knowledge.	156
(2) Extrinsic motivation	(2.1) Integrated regulation	Integrated regulation to join the VE	This code includes statements in which participants reported their extrinsic motivation/integrated regulation that made the participants join the VE.	Because I am very interested to find the way to start a Virtual Exchange with my classrooms or my future classroom	631
		Collaboration with peers	This code includes statements in which participants reported how the VE has impacted their motivation due to different group work tasks, collaboration with peers during the VE or their motivation to work with peers in the future.	This types of group works have permitted me to work with various students, interchange our ideas about the influence of English around the world and talking with people from different cultures motivate us, I think, because we feel it is important to work in team	162

Knowledge gained	This code includes statements in which participants reported the knowledge that has been acquired or gained and hence how the participants' motivation has increased. This code also includes statements in which participants reported their motivation towards designing teaching material. and statements in which participants refer to their motivation to "internationalise" their teaching experiences after the VE.	I am enjoying very much all the meetings so far. They have provided us with really insightful views on language teaching and also with several useful technological resources to implement in the future.	686
More training	This code includes statements where participants refer to their "awakens" to their duties and need (but also willingness) to receive more training or more knowledge on something that was learnt during the VE.	Thanks to the discussions we made during the Virtual Exchange I realized that it is not hard to apply a Virtual Exchange in the classes in Turkey. So, I decided to do a further study about how to apply Virtual Exchange pro-grammes in classes regarding different ages and levels. Moreover, I want to apply the Virtual Exchange programme in my future classrooms.	17

Table 4.1. Continued

CODE	SUB-CODE	THEMES	DEFINITION	EXAMPLE	FREQUENCY
		Passion about being a teacher	This code includes statements made in relation to "the passion" expressed by some participants about their job. How after the VE they become "more passionate" about their profession. Or simply how after the VE their motivation to become a teacher has increased.	I am even more motivated to become a teacher and I am looking forward for my ISP where I want to use the game we created.	20
		Professional task performance	This code includes statements in which participants reported their motivation towards performing their professional tasks/duties and /or motivations in relation to their professional development.	I have got a lot of information that is really useful for my professional development. It will help me change my lesson plans and work more effectively.	371
		Value of self	This code includes statements made in relation to the VE "increase the value of self", the self-esteem or confidence of the participants in relation to their work. They feel that their job has (more) value for others. Also, the value of the profession.	I have realised that teachers are a vital fabric of a society and they must be helped and supported more than we do know.	110
	(2.2) Identified regulation				

	Identified regulation to join the VE	This code includes statements in which participants reported their extrinsic motivation/identified regulation that made the participants join the VE.	Because I think Virtual Exchanges are important for teaching.	84
	Motivated to motivate students	This code includes statements in which participants reported how they learnt or are eager to motivate their students after the VE.	It has help me be even more aware of the challenges we are going to face. For instance, in order to motivate the students and getting them engaged in the tasks, a proper teacher's preparation is needed, but I feel ready to do my best and apply all the teaching methods I am learning.	37
	Sharing experiences	This code includes statements in which participants reported the knowledge gained in the VEs and how the participants are "more" "motivated" and willing to share this knowledge with other colleagues at work	I have realized the importance of sharing and discussion in a virtual world. With the help of our meetings within the scope of the project, all the information provided has made me feel valuable to exchange my ideas about what we can do as pre-service teachers in the online classroom.	18

Table 4.1. Continued

CODE	SUB-CODE	THEMES	DEFINITION	EXAMPLE	FREQUENCY
	(2.3) External regulation				
		External regulation to join the VE	This code includes statements in which participants reported their extrinsic motivation/external regulation that made the participants join the VE.	It is part of a class I am enrolled at university	6
(3) Amotivation			This code refers to being neither intrinsically nor extrinsically motivated and include statements that show that the participants find no value in participating as well as statements where they report the feeling of lack of competence to achieve a goal or a task.	[the VE] decreased my motivation to put more effort into my studies.	11

Results From Qualitative Analysis

RQ2 enquired into what motivated participants to join the VALIANT VEs. Our analysis revealed that participants' motivation to join the VALIANT VEs can be mainly classified into *intrinsic motivation* and *extrinsic motivation*. *Intrinsic motivation* (167 instances) appears in teachers' and student teachers' statements, reporting feelings of belonging and connectedness, interest, enjoyment, inherent satisfaction and a high level of autonomy as in examples (1) and (2):

> (1) *I am looking forward to learning new things and getting to know different cultures. I think that this can be a very inspiring and motivating project.*
>
> (2) *I hope to understand other people's perspectives, how they see things and their point of views, and I would also love to see how other cultures and other people try to solve a problem when encountered to find out whether there are differences or not.*

Example (1) illustrates the participant's internal enthusiasm to acquire new knowledge and immerse in different cultures, finding the project to be a source of inspiration and motivation. Likewise, in example (2), we observe a reinforcement of intrinsic motivation as the participant's goal is to comprehend various viewpoints and approaches to problem-solving. Both participants expressed that their curiosity drives their interest in exploring these facets, signifying a strong sense of autonomy and personal fulfilment attached to participation in the VALIANT VEs.

In contrast to *intrinsic motivation*, *extrinsic motivation to join the VEs* refers to the participants' willingness to learn about other ways to teach. This type of motivation can be ordered along the self-determination continuum from higher to lower levels of self-determination: *Integrated regulation to join the VE* (631 instances), such as in (3), *Identified regulation to join the VE* (84 instances), such as in (4), and *External regulation to join the VE* (6 instances), such as in (5).

> (3) *I want to learn more about other cultures and ways of teaching and motivate students.*
>
> (4) *I was looking for projects to participate in and one of my professors advised me to enrol in this project.*
>
> (5) *It is mandatory for the course I am taking -- it was not my decision.*

Integrated regulation represents the highest level of self-determination within the extrinsic motivation framework. In (3) the participant expresses a desire to learn more about other cultures, which is similar to the intrinsic motivation seen in examples (1) and (2). However, in example (3), this interest is not solely integrated into personal values and goals; it is also part of an extrinsic motivation guided by the participant's willingness to engage in an activity because it aligns with their desire to learn "new ways of teaching and motivate students", that is, an integration of personal values with motivation originating from outside influences.

Identified regulation falls in the middle of the self-determination continuum. In (4) the participant's decision to join the VE is influenced by external advice, specifically a recommendation from a professor. While the motivation is not entirely self-generated, the participant has identified a reason for participation that aligns with his/her interests. This indicates a moderate level of autonomy, as the participant has recognised the value in the project and decided to engage based on his/her own understanding of its benefits.

External regulation represents the lowest level of self-determination in extrinsic motivation. In (5) the participant states that his/her participation is "mandatory for a course". This type of motivation is primarily driven by external pressures or requirements, with minimal personal choice or autonomy. In this case, the participant's engagement in the VE is largely compulsory and not based on his/her intrinsic interest or personal goals.

Finally, *Amotivation* towards joining the VALIANT VEs has minimum representation in the participants' responses (only 5 instances). These statements mainly refer to participants' lack of goals and hesitation to join the VEs, such as in (6).

> (6)   *I have no particular goals for this endeavour and hope it is not a waste of time.*

In (6) the participant conveys a sense of disinterest or uncertainty about the project's purpose and its potential value, showing lack of motivation in engaging in VALIANT VEs. While amotivation is the least common form of motivation observed among participants' responses to join the VEs, it is important to note its presence as it contrasts with the more prevalent intrinsic and extrinsic motivations discussed earlier. Participants who express amotivation may require additional support or clarification regarding the project's objectives to increase their engagement and commitment.

Regarding RQ3, investigating VALIANT VEs influence on participants' motivation to teach, our qualitative findings reveal that all participants perceived that the VEs have impacted their motivation extrinsically. A possible explanation to this finding may lie in the fact that extrinsically motivated behaviours are instrumental in nature, that is, they are "not performed for the activity itself but rather as a means to an end" (Fernet et al., 2008, p. 258). In other words, through their participation in the VEs, teachers and student teachers attained a separable outcome. However, extrinsic motivation can vary greatly in its relative autonomy.

When it comes to *integrated regulation* (2063 statements – the most autonomous form of extrinsic motivation), we observe that participants' responses are aligned with their own values and needs. In addition, even though the reported actions share many qualities with intrinsic motivation, they are considered here to be extrinsic because they are carried out to attain separable outcomes rather than for the participants' inherent enjoyment. Within *integrated regulation*, *knowledge gained* was the most prominent theme with 686 instances. In these instances, it is possible to observe that the knowledge gained during the VE has impacted the participants' motivation towards teaching, as in (7); their willingness to internationalise their teaching practices, as in (8); or participants reported motivation towards designing teaching material, as in (9).

(7) *From teachers, I have learned various methods to make the students more motivated during the lesson. I will take those points away for my future career.*
(8) *I would like to internationalise my teacher network.*
(9) *I have learned that there are apps that allow me to create children's book looking story books which will help me in my career.*

In (7), the participant mentions having learned various methods to enhance student motivation during lessons and express a clear intention to apply these newfound techniques in his/her future teaching career. Similarly, in (8) the statement indicates that the participant has incorporated the goal – "I would like to"- of expanding the teaching practices on a global scale into his/her own values and needs. Also, in (9) the knowledge gained during the VE indicates positive impact on the motivation to teach which "will help [him/her] in [their] career". These examples suggest that the VEs had a positive impact on participants' teaching motivation by connecting extrinsic goals with their intrinsic values and interests.

Another salient theme within *integrated regulation* is *professional task performance* (371 instances). Here, we can observe statements in which participants reported increased levels of motivation towards performing their professional tasks or duties after having attended the VE and a sense of professional development, as in (10):

> (10)   *My vision of the education system is now quite different. This experience has shown me that another way of teaching English is possible. I've found out what the TBL approach is (I found it fascinating) and I'm sure it will help me to create different, innovative lessons for my pupils.*

In example (10), the participant's motivation is closely tied to professional growth as an educator. After attending the VE, the participant has discovered new teaching approaches like the TBL method, which has sparked his/her fascination "I found it fascinating". This newfound awareness, "My vision of the education system is now quite different", has awakened the motivation to create innovative lessons for the students, reflecting a commitment to professional development and improved task design.

Collaboration with peers (162 instances) and *value of self* (110 instances) also appear as prominent themes within *integrated regulation*. The former includes statements in which participants reported how the VE has impacted their motivation due to different group work tasks, collaboration with peers during the VE or their motivation to work with peers in the future, as in (11). The latter refers to those statements where participants explain how the VE has increased their self-esteem or confidence in relation to their work, as in (12).

> (11)   *Working with partners from abroad has been an impulsion to work harder. It has been a great source of motivation while studying on the topics.*
> (12)   *It has served to make me feel more confident about becoming a teacher. It has also made me feel more enthusiastic about it and made me realise that this is the path I want to follow.*

In (11), the participant highlights how collaboration has become a significant "source of motivation", emphasising the role of relatedness in SDT. The participant's willingness to work with peers and the motivation derived from this social interaction align with SDT's concept of relatedness, which underscores the importance of interpersonal connections in motivating individuals.

The newfound confidence showcased in (12), "[I] feel more confident", and enthusiasm, "[I]feel more enthusiastic", are indicative of an increase towards intrinsic motivation as the participant is now more self-determined and enthusiastic about pursuing their chosen career path. Essentially, the VE experience has fostered a greater sense of autonomy and competence in the participant's teaching profession.

Less prominent but recurring themes within *integrated regulation* are *passion about being a teacher* (20 instances), as in (13); and enthusiasm about receiving *more training* (17 instances), as in (14).

> (13) *I want to be as passionate about my job as our teachers have been. I will bear in mind that being a teacher means that you have to put effort in your skills constantly and that learning and developing is a constant part of the job.*
>
> (14) *I consider the VE project as an occasion to make one more step in my education as a teacher and move beyond a traditional class. I would like to follow further training.*

In (13), the participant expresses a desire to be as passionate about their job as their teachers have been. The participant's motivation to put effort into his/her teaching skills and continuous learning is integrated into their personal values and the perceived importance of these qualities in their teaching profession. While it is not purely intrinsic, as it involves aligning with external values, it reflects a sense of personal autonomy and the integration of professional values into his/her motivation.

In (14), the participant sees the VE as an opportunity to enhance his/her teaching education beyond traditional methods. The participant's drive for additional training "I would like to follow further training" integrates with his/her quest for professional growth and the innate interest in improving teaching skills and knowledge. This signifies personal autonomy and competence in his/her career, driven by the alignment of professional development with intrinsic interests and career objectives.

With regard to *identified regulation* (140 instances), apart from the statements referring to the rationale for joining the VEs (84 instances) as in example (4), two main themes emerged within this category: after participating in the VE, in-service and student teachers were *motivated to motivate students* (37 instances), and they were also more prone to *sharing experiences* (18 instances), as in (15) and (16), respectively.

> (15) *We work on vocabulary (jobs, shopping, food, restaurant) but our main task is the motivation factor. All of the teachers struggle with motivating the students*

> to learn a new/second language. Therefore, I have learned a lot about the diffi-
> culties that they experience (that I could experience as well.)

> (16)   *Learning from each other is an important step for us prospective teachers.
>   When it comes to experience, teachers always go one step ahead of our profes-
>   sion, and therefore they are most likely able to help us out through challenges.
>   Therefore, I have realised the importance of sharing, and I hope to contribute
>   to pre-service teachers with my experiences in the future, too.*

Identified regulation involves behaviours driven by internalised "some-
what internal" (Ryan & Deci, 2000, p. 72) motivations rooted in a per-
ceived understanding of their value. In (15), the participant highlights the
teacher's responsibility in motivating students, emphasising the recogni-
tion of the value and significance of this task, even when it is not inher-
ently motivating, as indicated by "the teachers struggle with motivating
the students to learn a new/second language." The participant's motivation
to assist students in overcoming language learning challenges exemplifies
identified regulation.

In (16), the participant emphasises learning from experienced col-
leagues, particularly teachers, as crucial for professional growth. The
motivation to share and learn from others is rooted in recognising the sig-
nificance of these interactions, aligning with identified regulation, where
motivation arises from understanding the importance of such exchanges,
even if not entirely intrinsic.

Moving to the lower level of self-determination, the responses of
the participants did not portray any statement that could be character-
ised under the *introjected regulation* and *external regulation* categories.
These findings are in line with the quantitative results which showed that,
after the VEs, there was an increase in teachers' and student teachers'
self-determined types of motivation (i.e., *intrinsic motivation*, *integrated
regulation*, and *identified regulation*). Finally, in the lowest level of the
self-determination continuum resides *amotivation* which results from not
valuing an activity. As we saw, most of the statements referring to this cat-
egory were related to the participants' lack of goals and hesitation to join
the VEs. However, we also found statements expressing *amotivation* after
the VE experience (6 instances), as in (17):

> (17)   *It made me feel a little bit disappointed and unmotivated when I realised that
>   not every member of the group was as compromised with the Virtual Exchange
>   as they should be.*

In (17), the participant expresses a sense of disappointment and amotivation after the VE experience due to the realisation that not all group members were equally committed to the VE, that is, not all group members were "compromised" in their level of dedication or involvement in the VE as expected. This statement highlights how the level of amotivation can emerge not only from the lack of initial interest or goals but also because of the negative experiences during the VE. It also underscores the importance of fostering a supportive and engaged environment within VEs to maintain participants' motivation and commitment throughout the exchange.

Conclusion

This part of the study investigated whether VALIANT VEs impacted on participants' levels of motivation. More specifically, it sought to discern what motivated participants to join the VALIANT VEs, and to what extent and how the VALIANT VEs influenced participants' motivation to teach. Overall, the quantitative findings revealed there was little to no change observed in the levels of motivation as measured by the pre- and post-VE surveys. However, upon conducting a more in-depth qualitative analysis, an alternative perspective emerged. In accordance with previous research on motivation in VE, our findings corroborate the enhancement of intrinsic motivation, as demonstrated by Nicolaou and Sevilla Pavon (2023). Additionally, our study highlights the importance of acquiring new knowledge within the VE context, leading to a boost in motivation, aligning with the conclusions drawn by Yang (2020). Furthermore, our results align with the work of Ko et al. (2015), who similarly found that collaboration with peers significantly increased participants' motivation. Furthermore, both the shared experiences within the project and the collaborative efforts among the participants have demonstrated a notable enhancement in the motivation levels of in-service and student teachers. These results are consistent with the research conducted by Demir and Kayaoğlu (2021), which revealed that the inclusion of real-world experiences in a VE project had a positive effect on students' motivation.

Our study extends beyond the existing research by unveiling additional positive outcomes not previously reported. For instance, after engaging in the VEs, the participants exhibited enhanced motivation towards performing professional tasks, an increased sense of self-worth and strong enthusiasm for their profession as teachers or becoming teachers. Additionally, the participants were willing to receive further training in the various topics covered by the VALIANT VE, and they also displayed increased motivation to inspire and motivate their students.

Contrary to most studies pertaining to motivation that focus on either students or teachers respectively, this study investigated both the teachers' and student teachers' motivation levels in participating in VEs and and the implications VEs can have on their professional lives as teachers or future teachers. Finally, this study provided an example of how the SDT theoretical framework can be used in the analysis of teachers' and student teachers' motivation levels in VE participation.

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