Interest: A Motivational Lever for Perseverance

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Perseverance and academic success are a matter of motivation, particularly interest in learning tasks, especially if we want this interest to last over time. In physical education, for example, success in the last college course (95% success rate) would indicate the ability to take charge of one's physical activity in order to maintain health. However, upon closer inspection, health problems related to physical inactivity are almost epidemic (Hall et al., 2020)! And yet, the majority of the Quebec population has a post-secondary diploma and, consequently, has demonstrated the ability to take charge of its health. There is much to think about in terms of the sustainability of the skills developed, in physical education in this case, but undoubtedly also in other teaching disciplines.

In an attempt to positively influence students to integrate the skills learned in the final physical education course into their lives in a sustainable manner, we conducted research (Bradette & Cabot, 2020) that involved providing a choice for each student to express their interests through the learning tasks in order to assess the impact of this assessment strategy on their motivation, engagement, and ownership of physical activity in the long term. Four months after the end of the course, students who were exposed to this strategy (experimental group) engaged in 96 more minutes of physical activity per week than before the course began, while those in the control group engaged in only 3 more minutes. These are results that deserve attention.

We believe that the motivational principle underlying our research and the knowledge derived from our results are transferable to several disciplines. In this article, we present avenues of reflection and recommendations so that you can draw from them everything that could be transposed into your personal teaching practices. Above all, we want to inspire you to develop new motivating practices based on these emerging results. At first glance, in each of the disciplines taught, students can feel interest thanks to the use of pedagogical or evaluative strategies designed by teachers who wish to encourage this mechanism: motivation.

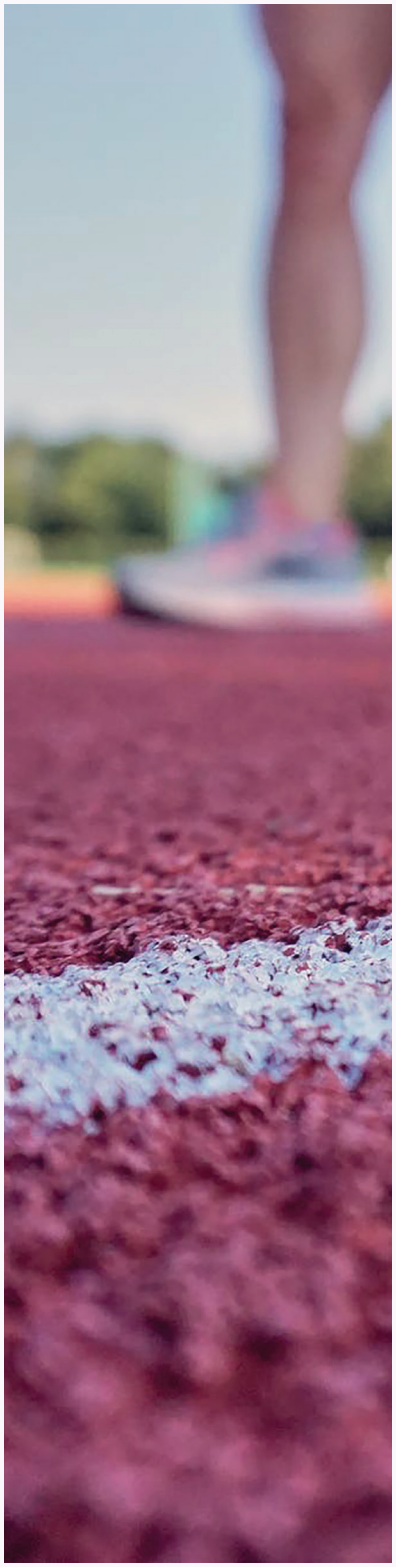
Research and methodology

As a result of a persistent three-part problem in physical education, namely sedentariness (Public Health Agency of Canada, 2016; World Health Organization (WHO), 2019), a decrease in motivation toward physical education courses during adolescence (Kino-Québec, 2012; Lemoyne and Girard, 2019) as well as a problem of evaluation using performance on an imposed physical test to sanction final competence, a PAREA research study was carried out in order to shed light on possible solutions. This study targeted the third and last physical education course in college, which is also the last one in the Quebec school system. This course targets autonomy in the practice of physical activities in order to encourage a healthy and active lifestyle and ultimately improve public health (Ministère de l'Éducation et de l'Enseignement supérieur (MEES), 2016; Lemoyne, 2012).

The research undertaken simply sought to offer, at the beginning of the session, a choice (experimental condition) of cardiorespiratory tests to each student for their final evaluation, rather than imposing an activity (control condition), in order to evaluate the impact of this evaluative strategy on motivation, commitment and long-term physical activity management. To this end, a quasi-experimental design with control condition, longitudinal follow-up, and mixed methods analyses was planned. In the fall of 2019, 79 college students from two CEGEPs completed questionnaires measuring determinants of motivation (controllability, interest, usefulness, and sense of competence) toward their course and toward physical activity participation, and then were divided between the two conditions, forming an experimental and a control group. The two groups were equivalent on all data derived from pretest measures, including family and childhood sports habits, motivational expectations related to the physical education class, number of weekly hours spent in paid employment, and general interest in physical exercise. In addition, because the pedagogical relationship has a great deal of influence on motivation for a course, students' appreciation of teachers was controlled for in this study. In addition, students completed physical activity reports (one in April 2020 and another in October 2020) and 11 students participated in interviews (in March 2020, in the midst of lockdown; we believe this explains the low participation in this part of the research). The purpose of these interviews was to explore students' perceptions of the last physical education class and to assess its influence on their physical activity practice in the longer term, i.e., after the end of classes.

The four-phase model of interest development

Interest is a very powerful motivational variable (Renninger & Hidi, 2016, 2019). The authors of the model state that the level of interest development can influence attention, learning, as well as goal achievement. Two types of interest can be developed. On the one hand,



situational interest involves positive emotions aroused by the environment, i.e., the situation experienced. It is made up of a large part of emotions (pleasure, surprise, the sense of challenge and enthusiasm) and a cognitive trigger (attention and curiosity). Situational interest includes the first two phases of the development of a new interest. On the other hand, individual interest is considered to be a stable state resulting from a person's personal preferences. This type of interest, which concerns the last two phases of the development of an interest, does not depend on the situation and is more durable over time. It is composed of a larger cognitive component (perceptions and mental representations) than in the previous phases of development, but its affective components are always present and in constant interaction with cognition during the development of an interest (Cabot & Lévesque, 2014; Hidi & Renninger, 2006).

That being said, interest involves an interaction between a person and their environment. The difference between the two types of interest is that individual interest arises from the individual's participation in that interaction, whereas situational interest arises from the environment's contribution to that interaction (Ainley et al., 2002). In the development of a new interest, situational interest always precedes the appearance of individual interest. That is, a situation must first arouse and then maintain attention and positive emotions in the person for an individual interest to emerge, develop, and become an integral part of that person in order to trigger a well-developed individual interest (Hidi & Renninger, 2006).

The core of the strategy developed: being able to choose according to one's interests

Physical fitness tests are often used in CEGEPs. The purpose of this evaluation is to encourage the student to know the portrait of their physical condition, to set goals and ideally to attain them through a physical activity program. It should be noted here that the cardiorespiratory test and other physical fitness tests are part of a pedagogical approach that allows the student to design a physical activity program according to their needs. The competency to be acquired by the student is not to improve their physical condition, but rather to "demonstrate one's ability to assume responsibility for maintaining a healthy lifestyle through the continued practice of physical activity" (MEES, 2016, p. 29).

In order to motivate the students in this practice, we proposed a transformation of the pedagogical act within the context of the last physical education course, namely the addition of a choice of cardiorespiratory tests. This pedagogical strategy allowed students to perceive control over the progression of their course (Viau, 2009), leading them to express their interests in the evaluation activities. From a pedagogical point of view, this way of evaluation is more likely to emphasize the student's personal fitness management skills while creating a positive evaluation environment. Indeed, controllability refers to the possibility that the student has to decide on certain things or make choices guided by the teacher, which supports their desire for autonomy (Viau, 2009). This author explains that

if the choices presented to students are in line with their interests and goals, the controllability they can thus exercise over the task at hand will lead them to feel more motivated overall to engage in it. Controllability would thus be a natural vector of interest.

For this purpose, four different cardiorespiratory test options, with already existing execution protocols and evaluation standards, were presented and proposed: the 20-meter shuttle run, the Cooper run test, the Step test or the Cooper cycle test. The difference between the tests is essentially in their execution protocols. For example, the 20-meter shuttle run test is a run at an enforced pace, with the pace increasing with each level. The number of successful levels is the student's score. This test requires frequent and abrupt stops. The Cooper Running Test requires the student to run as far as possible in 12 minutes. On this test, the student can run at their own pace, without being forced to make sudden stops, which can be difficult on some participants' knees. Also, this test is anonymous, as all students finish at 12 minutes. It is only the personal result, in kilometers, that differs. The same is true for the Cooper cycle test, which asks the student to ride the longest possible distance in 12 minutes. This test is popular with students with a greater interest in cycling or who have a physical limitation. Finally, the Step test has a protocol to walk up and down two steps at a set pace to achieve a maximum number of incremental levels. Obviously, other cardiorespiratory tests could be suggested depending on the facilities of the school's sports environment, for example in a pool.

Concretely, among these different tests proposed at the beginning of the session, the students in the experimental group chose and performed a test while keeping in mind that they had to include this cardio activity in their personal program, the target skill being to integrate an active lifestyle by taking charge of their physical activity program throughout the session. This variety of cardiorespiratory testing allowed for a better fit with physical activity interests, inclusion of diversity of physical abilities, as well as offering education about managing a test that can be completed during the course, but also autonomously in the future. The research premise was to believe for it to be possible that a student performing a physical activity they had chosen based on their interests and integrated into their physical activity program, was more likely to implement it on a regular basis, which could lead them to integrate a healthy and active lifestyle into their reality, even after the course had been completed.

Table 1 provides a summary of the phases of interest development in relation to the research undertaken and the results. It should be noted that teachers can have a significant potential for influence in their courses, particularly in phases 1 and 2.

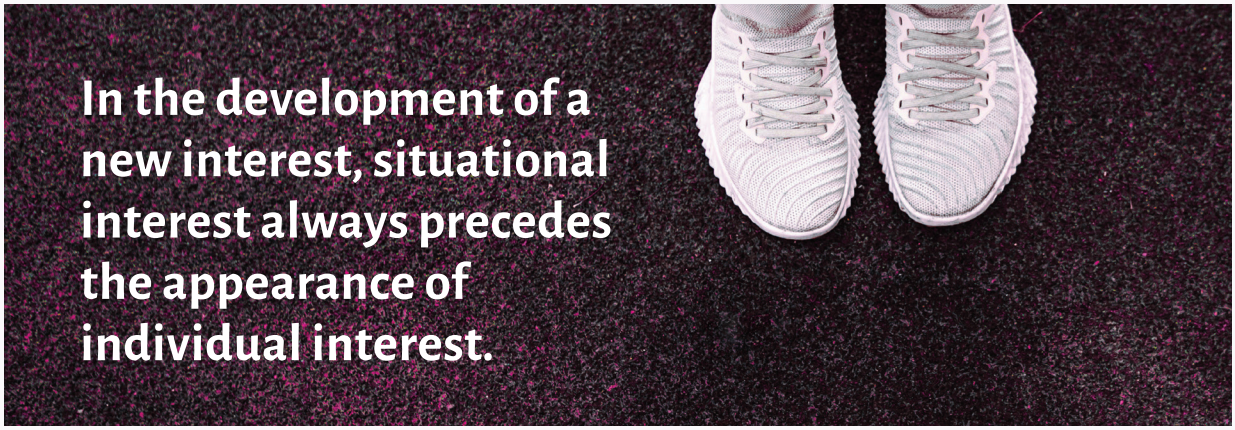


Table 1

Phases of interest development

	SUMMARY	LINKS WITH RESEARCH	RESEARCH OUTCOME
PHASE 1 ***Triggered situational interest***	Situational interest is triggered by the environment. It can be triggered by the teacher's pedagogical strategies that generate pleasure, surprise and pique the student's curiosity.	The student could choose a cardiorespiratory fitness test based on their pre-existing interests and insert this activity into their physical activity program. This choice situation was new and surprising for the students exposed to it, all of whom had experienced the shuttle test imposed in elementary and high school.	Interview results indicate that the proposed instructional strategy was mostly appreciated by students. Sample verbatim: *Choosing something you like is more motivating.*
PHASE 2 ***Maintained situational interest***	To maintain the interest triggered earlier, the environment, i.e., the teacher and the learning situation, must continue to spark the student's interest on several occasions during the session (Cabot & Lévesque, 2017).	In the personal physical activity program that the student was required to complete throughout the session (15 weeks), the student inserted a cardiorespiratory activity they enjoyed. They were more likely to actually perform it during the session. At the end of the session, it was more pleasant to repeat the evaluation with the test chosen at the beginning of the session and integrated into the program in order to see their progress.	The tested assessment strategy positively influenced the situational interest students felt toward their physical education course, as measured at the end of the session (Bradette & Cabot, 2020). Sample verbatim: *The course gave me a taste for physical activity.*

Evidence for the influence of the controllability-interest combo

The results of this research indicate a favourable influence of this theoretical combo on motivation and engagement. First, the experimental condition caused a very high level of perceived controllability by the students, compared to what those in the control group felt, which validated the effect of the pedagogical device: they were given control and they actually perceived it. This may have contributed to their need for autonomy, a very important need in early adulthood. In addition, as the literature predicted, students in the experimental group reported a greater perceived interest in the physical education class than they initially expected, which was not the case for students in the control group.

In addition, students' perception of the usefulness of their third physical education course was measured. The result was that the course they took lived up to the expectations they had at the beginning of the session. That is, the usefulness they conferred on the course was maintained during the session for both students who experienced the experimental condition (choice) and those in the control condition (imposed test). Although no increase in usefulness could be linked to the experimental condition, this result is very interesting for the discipline of physical education, as it possibly refers to the recognition of the relevance of the course in the development of healthy lifestyle habits. The same is true for the perception of competence: both groups saw an increase. This may indicate that physical education courses, regardless of the intervention chosen, have a positive impact on the student's

(Continued)

	SUMMARY	LINKS WITH RESEARCH	RESEARCH OUTCOME
PHASE 3 ***Emerging individual interest***	The environment is no longer the only source of interest, since the student interiorizes the object of interest, giving it importance and value. They now seek to self-initiate interaction with their source of interest.	In the long term, we wanted to know if the pedagogical strategy proposed in the last physical education course had an impact on the student's level of physical activity in their personal life, outside the context of academic obligations.	A measure of physical activity practice indicates an increase of 96 minutes per week, 4 months after the course ended. This indicates a real potential for the impact of this strategy on independent physical activity beyond the course situation. Sample verbatim: *If you have the opportunity to choose something you can enjoy, I think you can more easily enjoy it outside of class.*
PHASE 4 ***Well-developed individual interest***	The student deepens and maintains their commitment to their source of interest on their own. Encountering obstacles does not undermine this interest because the student values the object of interest and experiences positive emotions from it.	A well-developed individual interest would have been indicated by a sufficient and regular level of independent physical activity several months after the end of the intervention.	The October 2020 measurement indicates that physical activity levels dropped in both groups. The majority of students attributed this decrease to the COVID-19 pandemic.

physical literacy, in that they promote the integration of technical skills into the practice of physical activities. Conceptually, these findings are important, as they once again (Cabot, 2017) confer the power of specific impacts on interest, without its usual correlates of usefulness and feelings of competence.

With regard to behavioural engagement, the results indicate a significant increase in the students in the experimental group, i.e., those who reported having more controllability thanks to the possibility of choosing, at the beginning of the session, the physical test of their final evaluation. Indeed, as revealed at the beginning of this article, the students targeted by this evaluation strategy spent 96 more minutes practicing physical activities by themselves every week, before being exposed to the experimental condition, while those in the control group did not change their habits. Overall, the results encourage college-level physical education teachers to allow choices of physical activities during teaching or evaluation tasks, thus respecting students' interests. Following this idea, intervention avenues for teachers of various disciplines who wish to engage and motivate students in their courses can be adapted. In other words, manipulating the variables of interest and controllability in the design of learning or evaluation tasks is a promising practice for building motivation (Bradette & Cabot, 2022, 2020). As disciplinary experts, teachers can draw on this principle to create pedagogical devices to test in their practice.

Conclusion

While the design of learning or evaluation tasks is part of the teacher's role, the theoretical framework presented in this article can influence this implementation by inspiring innovative teaching practices. Indeed, the positive research results revealed suggest a multitude of possibilities for the design of learning situations aimed at motivating students. Of course, in this implementation, teachers could pay particular attention to the controllability and situational and/or individual interest of the students in order to develop courses more focused on their current needs. By respecting student perspectives and using them to shape instructional and evaluation strategies, practices can be improved and updated to ultimately impact student motivation.

The intervention proposed in this research has effectively allowed students to acquire the competency of the course and to maintain their practice of physical activities beyond the course until its decline in time of pandemic. It is possible to believe that this motivational principle can be applied to any other discipline in order to make learning sustainable and thus have a positive impact on our society of tomorrow. In light of this research, it is clear that motivation to engage in physical activities is generated up to four months after the intervention. It would be possible to test this intervention in a non-pandemic context in order to verify its durability. Nevertheless, we note that motivation can be generated by special ingredients: controllability and interest. ▬

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