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A Philosophical Discussion of the Support of Self-Regulated Learning in Medical Education: The Treasure Hunt Approach Versus the (Dutch) “Dropping” Approach

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ABSTRACT

Issue: Many current educational approaches are intended to cultivate learners’ full (learning) potential by fostering self-regulated learning (SRL), as it is expected that those learners with a high degree of SRL learn more effectively than those with a low degree of SRL. However, these attempts to foster SRL are not always successful. **Evidence:** We considered complexities related to fostering self-regulated learning by use of an analogy. This analogy was based on two (Dutch) children’s games: the treasure hunt (children can find a “treasure” by following directions, completing assignments and/or answering questions) and the dropping (pre-teens are dropped in the woods at nighttime with the assignment to find their way back home). We formulated four interrelated philosophical questions. These questions were not formulated with the intention to provide clear-cut answers, but were instead meant to evoke contemplation about the SRL concept. During this contemplation, the implications of definitional issues regarding SRL were discussed by use of the first question: What are the consequences of the difficulties to explicate what is (not) SRL? The second question (How does SRL relate to autonomy?) touched upon the intricate relationship between SRL and autonomy, by discussing the role of social interaction and varying degrees of instruction when fostering SRL. Next, a related topic was addressed by the third question: How much risk are we willing and able to take when fostering SRL? And finally, the importance of and possibilities to assess SRL were discussed by the fourth question (Should SRL be assessed?). **Implications:** From our contemplations it has become clear that approaches to foster SRL are often insufficiently aligned with the experience and needs of learners. Instead these approaches are commonly defined by contextual factors, such as misconceptions about SRL and lack of leeway for learners. Consequently, we have used principles that apply to both treasure hunts and droppings, to provide guidelines on how to align one’s approach to foster SRL with the educational context and experience and needs of learners.

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The New York Times dedicated an article to a typical Dutch example of hands off parenting: “the dropping”.¹ During a dropping, teenagers are “dropped” in the woods at nighttime with the assignment to find their way back home. Droppees are usually blindfolded and/or disoriented on the way to the drop off point and only have access to limited resources (e.g. a compass or simple GPS device). Droppings typically take place during summer camps, but can also be organized as an exciting birthday party activity. While many parents (also Dutch ones) will lose some sleep thinking about the potential risks of a dropping, it is exactly these risks that characterize the dropping. Because

when all risks are canceled out (“let’s tell them which direction to go first, in order to make sure that they don’t get stuck near the river”, “maybe we should also give them a map”) a dropping is no more than an ordinary treasure hunt, where children can find a “treasure” by following directions, completing assignments and/or answering questions.

This philosophical paper uses the principles of treasure hunts and droppings as a metaphor to reflect on the endeavors of medical training institutes to foster self-regulated learning (SRL), as we noticed that efforts to foster SRL are not always successful. While many approaches to philosophy exist, the philosopher

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Isaiah Berlin distinguished philosophy from other scientific disciplines on basis of the questions asked, or more specifically how those questions can be answered.² He stated that, in contrast to empirical questions, for philosophical questions the method to find an answer is ambiguous, as is the way of evaluating the answer (or even knowing if there is a single answer or multiple possible answers).² We formulated four interrelated philosophical questions about SRL. These questions were not formulated with the intention to provide clear-cut answers, but were instead meant to evoke contemplation of the ways in which medical training institutes try to foster SRL.

Before we go into this, it is important to consider the origin and importance of SRL.

The origin and importance of SRL

The first models of SRL were introduced in the field of educational psychology around 1986 to better understand the cognitive, motivational, and emotional aspects of learning.³ In the years that followed, authors from different disciplines developed and adjusted models of SRL.⁴ Panadero compared six influential models and concluded that all models present SRL as cyclical and consisting of different phases and sub-processes. He describes SRL as an umbrella term that refers to a variety of constructs related to learning, that cover different domains: (meta)cognition, behavior, motivation, and emotion.³ Accordingly, it is difficult to provide a distinct definition of SRL. For the purpose of this article, we will use a definition of Zimmerman, who was one of the first to propose a model of SRL: “*the degree to which students are metacognitively, motivationally, and behaviorally active participants in their own learning process*”.^{5(p. 167)}

The justification of SRL is usually twofold. Firstly, SRL is considered to help learners during education, as those learners with a high degree of SRL are expected to learn more effectively than those with a low degree of SRL.⁶ Proof for this idea is often provided by research that showed a positive correlation between the degree of SRL (usually measured with the use of self-evaluation surveys) and academic performance (e.g. grade point average).⁷⁻⁹ Secondly, those with a high degree of SRL are supposed to engage more easily in lifelong learning after education, as the two constructs are theoretically linked.¹⁰

This second justification can explain the increased popularity of SRL within medical education in particular. In the last decades medical training has focused on lifelong learning, as it is expected that a mindset favoring lifelong learning helps physicians to adequately respond to the

ever-changing demands of their profession.¹¹ Consequently, medical training institutes aim to invoke SRL in learners during education. This aim is substantiated by research that has shown that it is possible to foster SRL, not only through direct instructions and/or guidance of faculty, but also by various aspects of the learning environment (e.g. enthusiasm of teachers, technology used).¹²⁻¹⁵

However, as we just described how difficult it is to explicate what is (not) SRL, it is not surprising that there are also studies that show that efforts to foster SRL are not always successful, especially in the busy clinical context where it can be difficult for learners to keep track of individual learning needs.^{10,16,17} Therefore, it is important to ask questions about our attempts to foster this ambiguous concept within medical education.

The “treasure hunt/dropping-continuum”

Before we will question efforts to foster SRL, we propose the “treasure hunt/dropping-continuum” as a metaphor for approaches to foster SRL. On one end of the continuum there is the treasure hunt that resembles approaches where learners are clearly instructed to perform specific learning activities during an assignment (e.g. learners are obligated to formulate and evaluate three SMART learning objectives). In contrast, the dropping resembles approaches where only the assignment itself is defined, so learners themselves should decide which learning activities are valuable to fulfill this assignment. While we will focus on the two ends of the continuum during this reflection, there are naturally also approaches that hold a middle ground between these two extremes (e.g. learners are provided with a selection of learning activities from which they can choose).

Four philosophical questions about SRL

In the above it has become clear that SRL is a comprehensive, theoretical concept, that is not always successfully fostered by medical training programs. We therefore argue that those who aim to foster SRL should be willing to ask themselves (philosophical) questions about the concept, as such a contemplation can support deliberate decision-making, implementation, and evaluation. Accordingly, we formulated four interrelated questions about SRL which will be discussed below. The “treasure hunt/dropping-continuum” will be used to further elaborate on these questions.

The first question considers the relevance of definitional issues related to SRL. Further, the relationship

between SRL and autonomy will be questioned. Subsequently, the third question explores the effect of current medical curricula on the opportunities to foster SRL. Lastly, we will contemplate on the complexities related to the assessment of SRL.

What are the consequences of the difficulties to explicate what is (not) SRL?

We explained that SRL is a comprehensive concept that is difficult to define. This might explain the abundance of lingo present that seems derived from the SRL rationale that actively engaged learners learn more effectively than inactive learners, such as “student-centered learning” and “active learning”.^{18,19} Related to this are the efforts of medical training institutes to foster “reflective learning”.^{20,21} While terms like this are commonplace, they are also catch-all terms that can mean different things in different contexts and for different people.

Conway and colleagues already discussed the importance of precision in lifelong learning terminology, which includes SRL and self-directed learning, as “*differences in the interpretation and application of a word or phrase between groups of users, particularly when unrecognized, can have impactful real-world implications*”.²² (p. 702) Imagine the reactions of children who expected directions on where to go, as they were told to go on a treasure hunt, but who are instead dropped in the woods directionless. Likewise, instructions provided to learners to foster SRL should be consistent with the approach that is performed. In order to do so, it is important that all involved stakeholders are aware of the definition and theoretical underpinnings of SRL, so chances of misperception are minimized.

How does SRL relate to autonomy?

We think that it is important to consider the relationship between SRL and autonomy during this contemplation of approaches to foster SRL, as the “self” in SRL implies a focus on and appreciation of autonomy; one learns most effectively when learning comes from within oneself. Matthew Crawford explains that our western emphasis on autonomy is in essence political.²³ For this, he uses the work of the 17th century thinker John Locke who reasoned that no person can exert authority over another person, in a time that political sovereigns had complete power. With the wish for political freedom came a plea for intellectual independence; no one but you should decide what is true. While the political system was reformed long

since, this line of thinking still echoes in modern day society where autonomy is a value in itself.

While SRL shares commonalities (and is sometimes conflated) with theory on learner autonomy,^{24,25} its relationship with autonomy is actually rather complex. This is resembled by studies that show the importance of guidance by teachers during (the development of) SRL.^{7,12} Furthermore, there are concepts like co-regulated learning (i.e. somebody else helps you to structure your learning) and socially shared regulated learning (i.e. learning is regulated in collaboration with peers), that also stress the importance of social interaction during SRL.^{26,27}

Besides the presence and value of social interaction, autonomy of learners also varies on basis of the degree and specificity of instructions that are provided. Some learning activities provide learners with more autonomy to approach the activity (e.g. a project where learners should come up with a solution to a common health problem) than others (e.g. a class on how to perform chest compressions). In theory learners can engage in SRL in all these situations, as they can always decide on their desired goal-level (“how do I wish to perform during this activity?”), assess their own performance, etc.¹³ However, it is imaginable that learners are more inclined to engage in SRL when they experience some leeway to make personal choices.

But what is the preferable amount of leeway to foster SRL of learners? This is probably dependent on personal characteristics of learners, such as tolerance to uncertainty.^{28,29} Additionally, experience with learning activities can be an important factor. Where a five-year-old is not equipped to participate in a dropping, a teenager might be bored during a treasure hunt. Likewise, approaches to foster SRL are probably most effective when they include more structure (treasure hunt-style) at the start of education than at the end of education where a dropping-style might be the preferred approach. This aligns with theory about the acquisition of SRL skills.³⁰

How much risk are we willing and able to take when fostering SRL?

While we ended the previous question by stating that external structure can be preferable when fostering SRL during the early stages of education, we also suggested that learners are more inclined to engage in SRL when they have some leeway to make personal choices. This brings us to another conundrum of fostering SRL: how much risk are we able and willing to take during education? Because learners can only experience leeway when medical training institutes hand off some control.

However, current (Dutch) curricula are actually highly controlled, as they are designed to reduce potential risks, such as learners dropping-out or graduation of learners that are unsuitable for the profession.³¹ This is exemplified by the level of detail included in many training plans (e.g. the required number of OSCEs is specified for every internship). One can wonder how this affects the motivation of learners. Moreover, how much leeway can learners experience when they frantically try to fulfill all that is demanded of them?

This tension between learners' leeway and control of training institutes also surfaced in the interviews performed by Watling and colleagues,³² who explored what it means to be an agentic learner in medicine. They defined agency as "*the intentional actions that constitute learners' participation in the social experience of learning*". The interviews revealed that respondents considered it to be burdensome to show agency, as they needed to defy expectations that were set out by the highly standardized setting of medical training. The authors linked the high degree of standardization to competency-based education (CBE). While CBE is theoretically intended to be flexible and learner-centred, the outcome-based nature of CBE can also be considered as a fixed and prescriptive image of how doctors should perform, think, and act.^{32,33}

In such a clearly delineated environment, approaches to foster SRL will almost naturally turn out to resemble the treasure hunt-style. Learners are not provided with the opportunity to find their own way through the forest, but are instead (compellingly) directed to follow the paved roads set out by the curriculum, as medical training institutes fear that without these guidelines countless learners will end up in puddles. When learners only encounter treasure hunt-style approaches to foster SRL, they have limited opportunities to experiment with different ways of learning (e.g. only completing assignments that are considered relevant, making a collage or song about one's experiences). Consequently, learners cannot fully experience through trial and error which types of learning are (not) successful for them.

Should SRL be assessed?

We just described that medical curricula are highly controlled, which is also resembled by the comprehensive assessment programs of most medical training institutes. It is therefore not surprising that in the last years it has become more common to assess (aspects of) SRL during medical education. But how do you assess if learners

are "*metacognitively, motivationally, and behaviorally active participants in their own learning process*"? In order to do so, you need to know (and assign value to) how actively involved learners think, feel, and act.

Veen and colleagues explained that concepts like SRL are traditionally assessed by a model of representation, where particular language and actions are used to represent the concept that is assessed.³⁴ So, in concern to reflection it is for example common to use rubrics that distinguish between different levels of reflective writing.^{35,36} It is debatable whether such rubrics, and other assessments based on the model of representation, can actually determine whether learners adequately engage in SRL.

Moreover, where it might be possible to assess which child performs best during a treasure hunt, as all children will have to complete the same route and assignments, it will be very hard to assess children that are on their way back home during a dropping. Are those heading in the wrong direction failing, or will they course correct in due time?

Besides determining whether learners do (not) succeed at something, assessment is also intended to support learning, as assessments provide learners insight into their performance and that what is considered important.³⁷ This last aspect adds to the fact that approaches to foster SRL that include assessment will in most cases turn out to resemble the treasure hunt-style, as these assessments of (aspects of) SRL provide learners with stringent information about the learning behavior and strategies that are (not) considered desirable.

The aligned approach

Learners' SRL development is ideally fostered by treasure-hunt approaches first, which transform into dropping-approaches when learners become more experienced with SRL. However, from our philosophical contemplations it becomes clear that approaches to foster SRL are often insufficiently aligned with the experience and needs of learners. Instead these approaches are commonly defined by contextual factors, such as misconceptions about SRL and lack of leeway for learners due to the assessment program among other things.

While the importance of constructive alignment during educational design is long recognized,³⁸ approaches to foster SRL are thus often lacking constructive alignment. Therefore, we have used principles that apply to both treasure hunts and droppings, to provide guidelines on how to align one's approach to foster SRL with the educational context and the experience and needs of learners.

Decide which game you will be playing

When preparing a birthday party one chooses between a treasure hunt and a dropping based on various factors, e.g. age of the children, group size, the presence of children with special needs. Similarly, there are various factors to take into account when one is deciding on an approach to foster SRL. These include experience of learners with SRL, the amount of autonomy provided by the curriculum and whether the education will be assessed.

Learners with limited SRL experience will in general not benefit from a dropping approach. On the other hand, a dropping approach will be difficult to attain when the curriculum and/or assessment program enforce strict demands on learners, e.g. “upload one reflective form and one feedback form in your portfolio every day.”

Discuss the ground rules

Before one can start with the treasure hunt or dropping, it is important that everybody involved knows what is expected of them. Likewise, education aimed to foster SRL should be discussed between faculty and learners, in order to make sure that all are on the same page concerning the what, how, and why of the education. And while it might be enough to explain the rules of treasure hunts and droppings once, we think that the conversation about the ground rules of SRL should be continuous. Such a continuous conversation could consist of a lecture/e-learning session on the principles of SRL, scheduled time to discuss learners’ learning process, and periodical evaluations to assess what aspects of education are (not) working in concern to SRL.

Let them play

Especially during a dropping, those organizing should be willing to step back and trust that the kids will find their way back after the conditions have been set. But also during a treasure hunt it is important that those who guide the treasure hunt only provide (additional) instructions when required, so the kids can come up with their own answers and solutions. In similar fashion, fostering SRL asks for constant deliberation of faculty concerning the amount and type of instructions that they provide to learners.

Conclusion

One should be mindful of the complexity of SRL when implementing education that aims to foster SRL.

By use of four interrelated philosophical questions we aimed to elicit consideration and contemplation of various complexities related to fostering SRL: the comprehensiveness of the concept that causes it to be conflated with related terms, its difficult relationship with autonomy, the amount of leeway that learners need to engage in SRL, and difficulties to assess SRL.

From our contemplations it has become clear that approaches to foster SRL are often insufficiently aligned with the experience and needs of learners. Instead these approaches are commonly defined by contextual factors, such as misconceptions about SRL and lack of leeway for learners. Consequently, we have used principles that apply to both treasure hunts and droppings, to provide guidelines on how to align one’s approach to foster SRL with the educational context and experience and needs of learners.

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