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Being Conscious of “Interest” in Education

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Abstract

It has been the focus of academic programs in recent years to build an “interest-based education” practice to engage students in personally meaningful learning. We say that we know interest when we see it, but any deeper dive is not a straightforward exercise. In what follows, we shall attempt to bring to mind a conscious awareness of three central concerns in understanding and applying beliefs about interest in our thinking as researchers and practitioners. We do not seek to describe all the features associated with interest but instead focus on the study of interest at the metatheoretical level. First, we examine three ways of slicing our perspectives on the construct of interest such that we can understand where the features for examination may lie, what might the basic developmental categories be, and what might be the goals that drive our practices. We then turn to some recent constructs that are often tightly linked to interest but are distinct from it in crucial ways. The discussion ends with a critique of social and biological predetermination and misled efforts to identify interests early in life. This paper does not seek to build the construct but only to assist in building an analytical space whereby the construct of interest can be examined.

Why worry about defining interest?

Personal interest is an easily recognizable construct at first glance—“to be interested is to be absorbed in, wrapped up in, carried away by, some object. To take an interest is to be on the alert, to care about, to be attentive. We say of an interested person both that he [sic] has lost himself in some affair and that he has found himself in it. Both terms express the engrossment of the self in an object" (Dewey, 2018, p. 135). There is no question that being interested is a desired state to be in, we want to be interested in something and we want others to be interested in what we have to share. But given this sense of clarity in what interest subjectively feels like, the psychological construct of interest has been historically difficult to pin down. As researchers and educators, it is just too easy to find inaccurate approximates for what we want to measure or engender in our students; we may subscribe to lay theories, depend on flashy book titles, motivational quotes, or let ill-defined policy drive our thinking. While existing measures have some strengths, their strengths only stand if we respect their assumptions and the philosophies on which they were built. Here, we shall explore the space surrounding the construct of interest by bringing to conscious awareness some of our beliefs and then evaluating how existing constructs and measures overlap and are discrete from the targeted construct. The reader is of course encouraged to disagree with some of the points here, but it is my hope that the framing that follows will help build a space to delineate that disagreement in a shared conceptual space.

Associated Outcomes

While we may find interest development a virtue unto its own, there is a clear record of how interest is associated with a number of valued educational outcomes. For all students both interest and intrinsic motivation predict overall positive affect to a significant extent (Bye, Pushkar, & Conway, 2007). Intrinsically motivated individuals have been shown to display autonomy and employ more agentic behaviours to direct their trajectory of interest development (Bye et al., 2007) having a more positive affect on their learning behaviours and academic motivation. Although interest and intrinsic motivation are discrete in their theoretical backgrounds, they predict outcomes that create and sustain a deepening involvement with content and affect (Bye et al., 2007). The interested person is also likely to maintain positive feelings for content and persevere in the face of difficulty or frustration (Prenzel, 1992; Renninger, 2000; Renninger & Leckrone, 1991). Furthermore, a well-developed individual interest enables a person to sustain long-term constructive and creative endeavours (Izard & Ackerman, 2000; Tomkins, 1962). The student is likely to be resourceful when conditions do not immediately allow a question concerning a well-developed individual interest to be answered (Renninger & Hidi, 2002; Renninger & Shumar, 2002). A well-developed individual interest enables a person to anticipate subsequent steps in processing work with content (Renninger & Hidi, 2002). The development of interest therefore has some clear utilitarian value for education.

How, then, should we begin to examine this important construct?

**What are the main taxonomic concerns?**

1. The Interested vs. the Interesting

Let’s begin by saying something we all know but are not always mindful of -- Math is not interesting. There is nothing about Math that makes it intrinsically interesting without the potential perceiver. Interest is not a Platonic metaphysical truth. Much like beauty and truth, interest does not exist as a ‘real’ metaphysical property of objects. Math (or any academic domain or object) is interesting only when both the mind of the perceiver and the object of perception are in complementary states in which the two can interact in a dynamic relationship. Interest is therefore, at a foundational level, not in objects or perceivers but in relationships. In the terms of embodied cognition where interactions are directly perceived (Chemero, 2011), interest could be considered an affordance. An object in the world (the potentially interesting) brings with it some features which are actionable to the perceiver (the potentially interested). Thus, it is only when the world is “ready to hand” that interest can potentially be developed and experienced (Gibson, 2014). Here, we will also make a brief note about the objects of potential interest. When referring to the object of interest, we are referring to not only the physical object in the environment, but also a collection of features that may involve a more abstract concept or activity such as science, sports, dancing, or gardening. What makes these the objects of interest is that they can involve sustained learning and seeking behaviour.

The basic approach of categorising interest as an emotion has yielded some definitions that seem to allude to this property of the interest construct. Silvia (2008), in his most pared down definition of interest, asserts that, “if people appraise an event as new and as comprehensible, they will find it interesting” (p. 58). In other words, features need to be aligned between the perceiver and the perceived. Moreover, this definition brings to our attention some incredibly basic but important philosophies of education: those of Piaget (1976) and Vygotsky (1978). For Piaget interest in the world emerges from the process of equilibration. Knowledge about objects is assimilated into our existing cognitive structures and then through the process of accommodation our mental structures adapt to the new information which feeds back into the process allowing further, deeper exploration (Piaget, 1976). When one is interested, learning leads to more exploration and more learning. And, of course, this overlaps with Lev Vygotsky, Piaget’s contemporary, who suggests that interest is built through the process of learning opportunities being presented in a form that is accessible, within one’s zone of proximal development (Vygotsky, 1978). Interpreting this from the practitioner’s perspective encouraging interest is dependent upon scaffolding, i.e. presenting the material in such a way that it is comprehensible and actionable, to allow the potentially interested student to build the symbolic representations in their mind that are useful to connect with the material. In any case, interest is deeply connected to learning and motivation to learn but teachers must pay attention to both the state of the materials and the state of the potentially interested.

On initial evaluation these assertions may seem obvious, however it is not uncommon to see an instructor act and assign blame implicitly biased by believing in interests as Platonic truths. The teacher sees the problem lying with the student. If the student is not interested then it is likely due to either a basic lack of innate fit with the object of interest or some problem with the student; because, if the object is interesting to the teacher, it must be interesting to everyone. But simply understanding interest as a dynamic relationship one engages during learning captures only a small slice of what Dewey described, interest does not emerge fully formed as there are developmental complexities that need to be attended to. For this we will turn to a developmental taxonomy put together by Hidi and Renniger (2006) that can act as a heuristic allowing us to understand interest as a staged developmental process.

1. Interest: A Developmental Model

Reviewing the current plethora of research in interest, Hidi and Renniger (2006, 2015) analysed interest development as consisting of 4 ‘discrete’ stages: Situational, Sustained Situational, Emerging Individual, and Well-developed Individual Interests. The overall trajectory of this process begins with an arousal or trigger and with social support, scaffolding, and available resources the interest relationship evolves into a well-developed individual interest driven by internal need to practice and explore (Krapp, 2007). To ask if a student is interested necessarily involves further probing to determine where along this continuum the development of the interest lies. And if we desire to increase interest it is equally important to ask what level we are trying to obtain.

Situational interest focusses on the moment of attentional capture. The moment exists only when the object of interest is present. At this stage interest may be synonymous with attention. The teacher ‘captures’ the students’ attention or their interest by capitalizing on some perceptual bias or curiosity. Dynamic presentation that has high emotional valence or engages a sense of novelty is a typical hook to engage the student. While potentially fleeting, this is not a trivial phase--first impressions matter.

But this stage is deceptively simple. It would be inaccurate to say it is driven primarily by external events. In all cases, situational interest still involves some beliefs or knowledge of the student’s inner workings, their cognitive biases, their emotional state, and their readiness. Basic knowledge of what gets the attention of any human is useful, but situational interest may also be engaged by using deeper knowing of the potentially interested student. In fact, some situational interest may be triggered by using well developed interest as a lure. We can engage curiosity by presenting a gap in information, and enticing the student to fill that gap to relieve their uncertainty (Loewenstein, 1994). We may also have a deeper knowledge of the personal narrative and history of the student. Calling attention to one’s background, experiences and well-developed interests can also pull them into the task (Schmidt, & Rotgans, 2020). And, as alluded to above, even knowing the state of their knowledge and building upon it in an incremental way can offer a handle to inaugurate the interest development process (Hidi, 2006). We want to emphasise using any of these methods requires the researcher or practitioner to have information about both the interested perceiver and the object of interest. Even situational interest requires a calibration in this relationship—a fit. One cannot make something interesting without engaging knowledge or making assumptions concerning the features of the student.

The second stage, sustained situational interest, could be seen as a continuation of the first. Situational interest may be sustained in situ for an extended period of time. Once the individual’s attention is captured the ongoing exploration of the topic will maintain that interest for the duration of the activity. Situational interest is often fleeting but it is not instantaneous. Even situational interest has a momentarily sustained or delayed fall off period in which the experience is still active in the mind of the interested, and this allows the cyclical experience of interest to get repeatedly triggered and build more and more inertia as one continues to engage the world. Perhaps a book title captures the reader’s attention, but each sentence, diagram, and word acts to sustain or distract from that ensnared interest. In the classroom context, interest may initially be captured by appealing to the senses with colour, excitement, and novelty and then sustained either through a continuation of this exhausting performance or more strategically through classroom activities that begin to move the interest into a sustained practice either individually or in a group (Hoffmann, 2002; Schraw & Dennison, 1994; Sloboda & Davidson, 1995). In a group or in the class interest is renewed through questions and experiences. But as with all perpetual motion, once situational interest is engaged it can decay. One can be distracted by other aspects of the activity (i.e., social pressures, conceptual rabbit trails, or the surrounding environment). One can also loose cognitive or physical energy and resources. Lack of sleep, stress, lack of nutrition, and simply a lack of time can short-circuit the persistence of the sustained situational interest. Even a declining sense of efficacy can be an impediment to further development which is alluded to in Silva’s definition above.

Awareness of these early stages and the goals of the lesson or experience can help us to clarify our goals. Are we interested in generating an activity that simply captures their interest so we may engage them in an activity that hopefully sustains the interest? The goal and definition here focus on the needs of the moment--to teach a lesson or sell a product or idea. The importance of these stages should not be minimised as they have a clear function. They meet the needs of the moment by focusing on the interestingness of the object in context. Something that defines these first two stages is that the absence of an object of interest will result in the reduction of repeated engagement. They are equally important to the other two advanced stages of interest to which we will now turn.

**Decoupling interest from the external environment.**

In the language of radical embodied cognition, there is a point at which the perceptual experience of the object in the world is “decoupled” from the object in the environment. It remains active in both our neural wiring and neural activity for sustained periods of time (Chemero, 2011). It is at this point that the individual’s interest is no longer tethered in the same way to the situation. This separates the second two phases of the taxonomy from the first. Both emerging-individual and well-developed individual interests are characterised by “a relatively enduring predisposition to seek repeated reengagement with particular classes of content over time” (Hidi and Renniger, 2006, p. 114) The key words here are “enduring” and “seek.” As Hidi and Renninger suggest, the seeking system appears to be coupled with perception of the object of interest in such a way that when activated will result in seeking behaviour for the object of interest. The object of interest is now internalised; the relationship between the interest and the object of interest is now strongly represented in the mind as a set of internalised or internally generated values, feelings, associations, and opportunities for further development. The movement to develop the interest is primarily although not exclusively from the individual.

While the tools of the first two phases such as curiosity and entertainment are still present, they are now internally generated or sought after. The individual now seeks opportunities to engage the object of interest in engaging ways. They may seek social support in the form of interest groups or seek artefacts generated from other similarly interested individuals such as online videos, books, or movies. The wanderings of the mind at this point often generate their own curiosity questions. We begin to generate questions of wonder that we desire to resolve. To progress from situational to individual interest, individuals typically ride on their own curiosity about the subject as they dig deeper into the content identifying with the interest as the interest becomes more developed (Renninger, 2000). The context of interest is now internalised to some extent and carried with the individual across contexts. Perhaps this is the ideal place to study generalization and transfer in learning how interest might be transferred to new objects of interest when that emotion is carried across contexts.

Importantly, this new stage seems to still be very sensitive to derailment and social supports may not be immediately clear. The classroom, the teacher, the advisor, and the parent can play particularly important roles in presenting opportunities for the individual in situations where the individual has the opportunity to accommodate new information or work within their zone of proximal development by engaging new levels of complexity. In this phase, the individual may also “try on” various interests, which may be sustained as they get to know the object of interest. Given both intrinsically and extrinsically rewarding experiences the individual will build a network of feelings and associations that return them to the object of interest even when distracted, exhausted, or discouraged. The interest is part of the individual’s momentary constructed interests but not yet a core part of their identity. Obviously, this is an important goal of education We desire individuals to sample what fascinates them but maintain interest long enough to make it personally meaningful and intrinsically generated. We would like them to learn more outside the classroom context, but interest in their homework or having discussions at home beyond the context of the classroom are evidence that the student has begun to internalize the interest.

The most advanced stage in the four-stage model is a well-developed individual interest. Based on Hidi and Renninger’s 2004 model this seems to be simply more of all the features found in emerging individual interest. However, as the name of the stage suggests, the individual interest stage appears to be a point at which the interest becomes a core part of one’s identity: “I AM someone who is interested in x.” While the model proposes a clear taxonomy of interest stages, it is not clear that these stages are clearly discrete. As mentioned earlier even this well-developed individual interest is engaged during the situational interest. When an interest is well developed it may still act as a hook to grab the attention in a moment and then quickly fade in that moment. Individual interest and situational interest are intimately intertwined (Rotgans, & Schmidt, 2018). Hence, this model works well to categorise interest development, but it is clearly a necessary theoretical simplification, albeit a useful one. At each stage we can identify the changing features of both the potentially interesting and the potentially interested. It may initially appear that we are moving from external to internal, but as mentioned this is not the right way to look at it. At the level of situational interest, a number of cognitive and perceptual biases orient us toward objects of potential interests. As we move from situational to individual we are building upon these predispositions and biases. The affordances in the relationship emerge dynamically as we move along this continuum, but at every level the object of interest asks for the mental apparatus to assimilate and accommodate changing the affordance relationship but not shifting the responsibility.

1. Teacher or Learner Centered

An assumption that is commonly made when it comes to interest is that we at least agree on the goals—an interest-based education is good. But depending on the pedagogical perspective we can focus on the study of interest from radically different perspectives. We can ask is the interest in interest teacher focused or student focused. Bowers & Flinders (1990) point to the idea that often education is driven by the needs of the state or the teacher who treat the student as a product with sets of outcomes.

From this perspective educators seek to engage students with the goal of “getting someone interested in” something. The goal of many motivational theories is “achievement motivation.” Lets take for example Expectancy-Value Theory which has tended to focus on reading and mathematics. In this theory the likelihood that one will engage in an activity is the multiplicative result of expectancies for success combined with the value of the task (Eccles, & Wigfield, 2002). One of these values is “interest” measured with student agreement to a single item: “I am interested in mathematics.” This type of theory has led us to operational thinking. Where we ask the question what we can do to increase this item: “How can I get my students interested in math?” The goals of this perspective on interest development are defined by the instrument and the teacher. The teacher centric goals here range from simple compliance in an activity to preparing individuals for socially determined economically valuable carriers.

But another approach is to work with the student where the interest is intrinsically valuable and emerging from the student. In this approach the role of the instructors is to find what interests the student and move from there. While on first reflection this may seem more democratic, it is by no means necessarily so. We can use personality and career questionnaires to canalise students into career (Louis, 2012), personality (Pittenger, 2005; Hough, & Oswald, 2008), and learning styles (Reynolds, 1997). We can use performance to push students into one field or another when college instructors act as gate keepers. We can limit education opportunities based on current skill levels and predispositions systematically excluding some cultures and disabilities.

 While it may be clear where the author’s perspective lies, this is an area with much still to explore and this is not the place to attempt a definitive review. But at the very least when examining our teaching and research practices we need to make our goals overt. Are we acting in a teacher centered or a student centered way? And within that how might our assumptions concerning student interest development impact students? At minimum we need to at least define the features of the object and the perceiver the state of the interest, and also our own perspective on interest itself. This preliminary list helps us to make ourselves aware of what is attended to and not attended to in our instructional practices or evaluations.

**Potentially Problematic Ways Interest is Measured**

To help us better understand interest it is also useful to distinguish it from and identify similarities with other popular constructs. We need to not simply apply all research to the construct of interest as a whole we need to see how the research relates to actual and perceived differences with existing measures. We will now turn to a short sample of these discriminate and convergent topics which are fascinating in their own right, and in the ways they interact with the construct of interest, but they do have very clear differences in nuance. The first two of these may actually be seen as potential tools or torquers to engage interest. They are closely related emotional states, but they have important qualitative distinctions.

 **Intrinsic Motivation and Engagement**. Broadly we have agreement that intrinsic motivation is a natural inclination towards engagement, mastery, curiosity, and exploration (Ryan 1995). Intrinsic motivation is based broadly in self-determination theory to the concepts of autonomy, relatedness, and competence. If these are satisfied, one finds an object aesthetically pleasing, challenging, or containing some novelty (Ryan & Deci 2000). Intrinsic motivation is a vast theoretical perspective which has begun to lose some of its cohesiveness as a construct in recent years. The concept is certainly in need of a “fresh look,” (Lindenberg, 2001) and a wide range of literature has attempted to tame the beast (Sansone, & Harackiewicz, 2000). Some have found the dichotomy between intrinsic and extrinsic motivation oversimplistic and have sought multifaceted or different approaches to motivation to better understand it (Amabile, 1993). Importantly there are many activities that one could become intrinsically motivated to perform without actually having an interest in them in the way we have been discussing interest. As mentioned above part of the interest construct is the relationship between an object and the perceiver. Interest is not a generalizable trait property of the individual and many measures of intrinsic motivation seek to characterise the individual as more intrinsically or extrinsically motivated. Interest may be seen as a form of intrinsic motivation, but considering the broad use of the term in recent years it is difficult to connect the two topics in a clear way and this effort would be beyond the scope of the paper.

**Enjoyment.** Enjoyment can be problematic as an indicator for intertest. This is true in two ways. First as Vallerand et al. (2003) discuss some of our activities can become obsessive to the point of being destructive. To characterise these as enjoyable is a bit of a stretch. Secondly, one of the defining aspects of interest is that one will undergo moments of intense difficulty perhaps a loss of efficacy, and frustration in learning. These are seldom not enjoyable experiences, but the interest perseveres even though these unpleasant experiences. Thus, while interest is appetitive it is not always positive.

**Curiosity.** As Renniger and Hidi (2015) point out that the construct of curiosity has an important distinction from interest although it is intimately connected with interest. Curiosity has two commonly referred to dimensions: trait and state.

***State curiosity.*** This form of curiosity focuses on the state an individual is in when presented with a situation where some information is missing. One approach suggests that curiosity is the result of a gap in knowledge. Basically, when a gap in knowledge is presented a discomfort is present and the exploration that results from this curiosity is driven by the need to alleviate this discomfort. And indeed, there is ample evidence now that when someone is made curious, their continued exploration is satiated and recedes when the gap is filled (Berlyne, 1954; Dember, 1956). Imagine hearing a new word and being curious to its meaning, once the definition is known you may use the word with no further exploration as to its meaning. Or, similarly, one can be shown a trivia question, riddle or puzzle and the presented gap in knowledge leads to wonderings and exploratory behaviour that will seek to relieve that tension. A later development to state curiosity is that it is not induced by a gap but is instead induced by a state of activated calm that when experienced stimulates the search for more stimulation which involves seeking answers to problems that are present (Berlyne, 1967). Often, we read a word that we do not know; under the right conditions we will be curious about the meaning of that word whereas in other condition we may simply accept our lack of knowledge and move on with minimal understanding.

It is debatable whether situational interest and state curiosity are synonymous. However, curiosity in the orienting response may perhaps be considered subset of situational interest where curiosity leads to orienting behaviour.

***Trait curiosity.*** From the optimal arousal approach has come the idea that individuals differ in their optimum level of arousal and when their arousal is too low it will stimulate a generalised curiosity. Some items from the Peterson and Seligman (2004) questionnaire focus on a desire to know: “I can find something of interest in any situation” or “I really enjoy learning about other countries and cultures,” but other items that measure curiosity look at epistemic curiosity: “I enjoy exploring new ideas” or conversely “I feel frustrated if I can’t figure out the solution to a problem, so I work even harder to solve it” (Litman, 2008; Litman & Patrick, 2013). It is clear from this small sample that trait curiosity is seen as an individual level measure. It is something that the individual carries with them through their daily experiences of life.

Interest on the other hand is not viewed as a trait because it is tied specifically to a domain. However, the ease at which one enters or leaves interest is an understudied area that may reveal more individual differences than we have currently envisioned (Hidi & Renninger, 2006; Hidi, 2006; Renninger, & Hidi, 2015). One way that trait curiosity may be related to interest is in how the stimulation of curiosity could lead to the development of new interests. Furthermore, when interests are well developed, the individual “generates their own curiosity questions.” Curiosity overlaps considerably with interest, but they are not synonyms.

Yet another question we could ask about curiosity is whether one could be curious about something if they do not have an interest in it. Being curious about an answer to a trivia question or wondering what is within a gift, are types of curiosity that are far from what we would consider the development of an interest.

**Awe.** A comparatively less studied but clearly related construct is the sense of awe and wonder. Similar to state curiosity awe is related to a particular context, but it is not seen as a personality trait. Awe involves the perception of vastness and is accompanied by a need for cognitive accommodation, a sense that what is being experienced is “both powerful and moving” (Keltner & Haidt, 2003). Often awe is related to vastness and size potentially both physically of conceptually (Bonner & Friedman 2011). However, this contrasts sharply with interest as defined above because there is not a sense of “comprehensibility.” In the construct of awe, specifically, there is a sensation that the external environment is far beyond comprehensibility and during the awesome situation one may be psychologically comfortable and relish in the vastness of the experience and yet explored no further.

Like curiosity, awe and wonder may stimulate interest and they may stimulate curiosity. But they in themselves are not interest. Rather they have a dynamic relationship with it. The literature here is ripe for exploration.

**Passion.** It is typical to combine interests and passions together as they are clearly tightly bound. We often use passion to accompany descriptions of student work “what are students passionate about and interested in?” In many ways they are conceptually identical, but as with other similar constructs it depends what the goals of the research and practitioner are.

Passion is a well-studied phenomenon which entails a “strong inclination toward an activity that people like, that they find important, and in which they invest time and energy. [...] it has to be significant in their lives, something that they like, and something at which they spend time on a regular basis” (Vallerand et al., 2003, p.757). Furthermore, passion is tightly bound to identity and passionate activities become part of how people describe themselves (ibid). Passion has been reliably separated into two types with different implications: harmonious passion integrates the object of passion under one's control and becomes a positive influence on their lives; obsessive passion controls the individual and consequently has a negative impact on their lives. Unfortunately, the passion scale does not address information seeking behaviours associated with interests.

In addition, responses to what individuals are passionate about do not always fit well with our conceptualisation of interest. This is clear when we look at the categories of passion that emerged in response to Vallerand et al.’s (2003) query to identify activities that one engaged in that were “dear to their heart” and he further restricted the list to those that individuals were passionate about. This included items which are prototypical of what would be considered interests: painting, photography, sports, learning music or an instrument, hobbies, or other academic areas. However, some items which we could be passionate about but seem to diverge from what we would consider interests are passive leisure actives such as watching tv, listening to music, or sleeping. Another area that emerges for passion that is not one that would typically show up as an interest are interpersonal relationships such as family, dating, having coffee, being with friends or family. One can be passionate about these things without seeking additional information or generating curiosity questions. One could be passionate about friendships but not actively seek information or research about their friends. Also one could be passionate about religious teachings or even specific stories but that doesn’t necessarily mean that they are going to build on those religious teachings or on those stories. Interest, however, will require a deeper engagement than a passive enjoyment which may be true of passions.

 Based on this perspective it is more likely that one may display varying levels of passion for their interests or interests for their passion, but it is likely that we would prefer to retain some separation in these concepts which is clear from the practitioner’s reference to developing both passions and interests.

**Grit.** This is first related to the idea that passion and interest are often intertwined. The title of Duckworth’s (2016) book, “GRIT: The Power of Passion and Perseverance,” has led some to make a connection with interest, and suggest that grit is a measure of interest. The overlap can be seen in two of the items on the short grit scale have the word interest embedded in them “I have been obsessed with a certain idea or project for a short time but later lost interest” and “My interests change from year to year.” These items focus on the temporal dimension of interest not on interest as a whole. They focus on the persistence of an interest but that is their extent.

Perseverance and Regular Engagement

Passion, grit, and trait curiosity each deal with an aspect of interest that is often taken for granted. It is assumed that if one is interested in something, they will be engaging with it; however, we ask the reader to consider if interests are always actively practiced: life interferes; time and resources are limited. Would we say that the student working on their dissertation, the overworked professional, or the attentive parent no longer interested in those things that they had previously considered well developed interests? If not, then measures of persistence and active practice are not crucial to defining interest. At times, we may need to put our interests on the backburner; or we may only engage our interest when we make time for them. Additionally, none of the constructs listed above discuss in detail how interests can be practiced in the form of mind wanderings or daydreams. An architect is not only engaging their interest when they are working, they also engage their interest when they are in the presence of buildings they walk by and see on a daily basis.

We intuitively know that when we don’t have time to externally practice our interests, we may temporarily put them on pause, or we may exercise them internally in ways that are not observable by others. The concept of losing interest in something is not the same as not being able to practice it. And we should even question if we really loose interest or if we instead lose the confidence, time, opportunities to engage the interest. To lose interest may simply mean to put it on pause until the right conditions present themselves again which may take many years.

Interest as Persistent and Predetermined

 Yet at another temporal level, we can think about how interests emerge. There is clearly some variability in whether we believe interests are discovered or developed (O’Keefe, Dweck, & Walton, 2018; Plante, et al., 2019). These beliefs impact how we approach interest in our own lives and likely how we support interest development in others. Let’s now just take a moment to deconstruct this idea.

**Predetermination and early identification.** Just as objects cannot be interesting without the interested, interest cannot exist without an object in the world, and if we ascribe to this basic belief, we have to say we are not born with interests they are necessarily only formed when a relationship begins via situational interest. Despite this, our experience of having an interest constitutes a core part of our identity and our desire to make plans or to control the paths of others in the future has really ground into our collective psyche the idea that interest is predetermined.

However, there is a conceptually difficult part of the predetermination question. Beginning with thinking about interests as affordance relationships, no relationship can exist before experience. While there may be some biological and cultural preparedness that biases one in a particular way to take advantage of exposure to particular objects facilitating the emergence of the interest relationship, this would encourage only “situational interest.” More developed levels of interest are, by definition, developed by experience and are therefore not predetermined. So, is interest predetermined? I would suggest the answer is a definitive no, with the caveat that biological and social situatedness bias the likelihood of interest development.

**Performance.** The relationship between the interest and performance is messy: interest does not equal performance or talents. While it is associated with knowledge and skill building, interest is not dependent upon performance and is specifically not associated with performance comparisons. If someone is performing poorly in a course, it does not mean they are not interested in it. In fact interest may be so deep in one particular area that other subtopics are neglected, or one may show interest in a non-traditional way. Seeking science as a road to science fiction does not mean that the student is not interested in science; it means they are interested in science as an inspiration to another art form. This may at some level seem obvious, but we still seem to assess individual performance as a proxy for how much they like a particular subject. The serious effect of this is that we may discourage someone from following their interests further and developing their knowledge because we classify them as not showing ‘sufficient interest.’ At an opposite extreme we may have someone deeply interested in a topic and studying it or learning it in completely unacceptable ways. Their interest may be based on false information or misunderstandings yet they find the false information interesting. This would clearly lead to lower standardised performance, but it does not diminish the strength of their interest. Interests do not have to be grounded in reality or truth.

Also, we need to remember that skills and talent are things measured by the culture and not by the individual (Gould, 1996). What is considered artistic talent changes across generations and engineering skills have moved from pen and paper to computer. Today’s childish doodle is tomorrows masterpiece, and today’s flawed thinking processes are tomorrow’s insight. If we attempt to measure interest by performance, we miss so many potential interests that emerge uniquely from individuals to the loss of both the individual and society.

**Vocation and academic typing.** Additionally, interest does not necessarily match vocational or academic pursuits: although our interests may influence our pursuits, they do not necessarily coincide with them but complement them by increasing our general knowledge and helping us build a more solid identity foundation. Instruments should be used with care with relation to individuals' interests and best career fit (Louis, 2012, Pittenger, 2005; Hough, & Oswald, 2008). We enter our careers for many reasons including sometimes from necessity, connection with family traditions, or because the system has given us very few options. This is not to mention that financial security is a strong motivator (to pursue or ignore an interest) for both the individual and the state.

**Interest is not determined by a young age**. In addition, we need to dissuade ourselves of the idea that interests are determined early in life. It is very clear that new interest can emerge throughout our lifetime; the continued plasticity of the brain into late adolescence and beyond has made this clear.

Influences of social and cultural practices, values, and skills are at their peak during adolescence when we begin to explore and try-on different identities before settling into ourselves. Erikson (1968) described this period as the Identity vs. Confusion stage. When an adolescent receives support in their exploration of who they are they will emerge from this stage with a strong sense of self and identity. If, however, the individual is not supported, they tend to enter adulthood with a sense of confusion and an unstable sense of self. Thus, in preparation for choices in college and career which will emerge in late adolescence it is in the state’s best interest both economically and socially to encourage teaching and parenting practices which would benefit this stage of development as a settled period, but a period of exploration.

Adolescence is also important due to its stabilizing features; it has been demonstrated that interests tend to stabilize within a small timeframe and after which the workplace curtails the frequency of new experiences impeding any further changes to perceived individual or situational interest (Low and Rounds, 2006). It has been shown that stability rises sharply only during the beginning of emerging adulthood (Low and Rounds, 2006) and subsequently plateaus; as such, there is scope to argue that person-environment interactions are responsible for the personality trends at an earlier age. Of course, adolescence is only an example new interests commonly emerge when we change jobs, or when we retire and have more free time.

 Interest as a Personal and Interpersonal Experience. We also need to be aware that interest is currently not easily measured by any known behavioural indicator or written inventory. It is a deeply felt emotion that we need to share with the student. Interest to some extent is still something we know but can’t quite put our finger on. It is perhaps still best described through careful qualitative analysis because interest practices differ so much across domains. But we are not completely in the dark. As one instructor said recently “I see a fire in their eyes when they are interested, I don’t know what it looks like, but I know how it feels.”

Conclusion

Interest is currently a loosely conceived conceptual term with some strong theoretical background and face validity. We all agree it is a desirable state in our students, but we are not always sure what it really means. Some of the other related constructs mentioned vary from a broadly acceptable conceptualisation of interest in important ways but each also touches on important aspects as well.

Firstly, it can be helpful to classify our research and practices surrounding interests across three dimensions. (1) Feature assignment: What are the features that come with an object which is potentially interesting, and what are the features of the potentially interested individual? (2) Developmental level: At what developmental level are we interested in building an interest: situated, sustained situational, emerging individual, or well-developed individual? (3) Teacher or student centric: Are we interested in interest as something we want to build in a particular domain or are we interested in helping scaffold the ‘natural’ emerging interests of the student? All of these questions have to do with our goals as educators. Secondly, we need to consider measurement critically. Measures for related constructs can get at part of what we are interested in evaluating but we need to be explicit about what is being measured and the assumptions of the instrument. Passion, curiosity, awe, grit, and motivation all share something with interest, but they are not the whole picture. Also be aware of what no instrument currently measures. What interferes with interest? What role does external practice play in interest? Can interests be deep but not regularly practiced? And finally, we need to be careful to not confuse potential dependent variables with interest. Such variables include skill, talent, and performance, which are based in reality, and we also need to recognise that interests are not stable personality traits that we are born with. They are malleable, and our experiences and our biases will affect the way we interact with the object of interest.

Clearly there is much more to be discussed for each of the points above, but here we hope to give a basic heuristic to think about interest in a more systematic way. What does it mean if you are a teacher or school that takes into account student’s interests? Interest driven education is a vapid preprogramed term that means little without articulation.

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