Causal information as reward for children

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Life-span Developmental Psychology

Registration form (basic

data)

1. Details of the applicant: Loredana Lenghel

2. Title of the proposal: Keeping Children Engaged – Causal Information as Reward

3. Summary of the proposed research

This study proposes research on the effects of causal information as reward on the intrinsic motivation of children. Causal information has been shown to maintain task engagement in children better than tangible rewards because it touches children’s innate interest in the world. A repeated measures experimental design with children aged 8 to 10 will be used to establish if indeed the intrinsic motivation of children is not undermined by causal information as reward. The results have implications in areas such as education and learning.

4. Keywords

Intrinsic motivation, causal information, reward, education

dESCRIPTION OF THE PROPOSED

Research

5a. Research topic

Motivation to fulfill personal needs is what drives people to act. Being defined as “ the reasons underlying behavior” (Guay et al., 2010, p. 712), it is understandable why it is important to establish the building blocks of motivation and how these can be manipulated in order to preserve people’s sense of fulfillment. Motivation has been a topic widely investigated within the social sciences, there being several theories that attempt to explain this process. The most common distinction encountered in the literature is between intrinsic and extrinsic motivation (Ryan & Deci, 2000). Intrinsic motivation is seen as inherently volitional; it is the force that drives actions and sustains activities due to personal desires as it is associated to personal enjoyment, interest, pleasure or high engagement. In contrast, extrinsic motivation is seen as governed by reinforcement factors; this type of motivation implies doing activities due to reasons that are external to the task, such as receiving a reward (Lai, 2011).

The differences between these types of motivations can be associated with the quality of task outcomes. For instance, task outcomes such as spelling, writing or vocabulary development represent only a narrow range in which the relevance of these motivation forms can be observed. Thus, an important area where intrinsic versus extrinsic motivation needs to be taken into account is education and learning. The relevance and importance of this proposed study can be understood when looking at how children’s motivation develops. Research on children’s intrinsic motivation shows that it is not a stable construct. Intrinsic motivation tends to decrease with age, ninth graders exhibiting less motivation than third graders (Lepper, Sethi, Dialdin, & Drake, 1997) (Lai, 2011). However, some evidence shows that

after the age of 15, there is again an increase in this type of motivation (Gillet, Vallerand, & Lafreniere, 2012). One study argues that academic intrinsic motivation stabilizes as one advances in age. They found that between the ages of 9 and 17, motivation can be seen as having cumulative effects. Information about motivation at one age can be used to predict further motivation. Moreover, they argued that academic motivation is relevant for the school curriculum, showing a decline for sciences and reading. Another point touched upon was that children with low motivation at the beginning of schooling are at risk and lack future interest in learning (Gottfried, Fleming, & Gottfried, 2001). What is more, studies suggest that before starting school, children are generally intrinsically motivated, eager and excited about learning. This effect then diminishes and some children show reluctance towards studying. This is why having an efficient method to nurture children’s motivation can have a positive effect on their future motivation. It also shows that a method is necessary to help maintain academic interest in subjects for which children’s intrinsic motivation to learn declines.

Notwithstanding these findings, society has taken a problematic approach to maintaining children’s motivation. Several studies have shown that rewarding someone for doing a certain task can diminish their intrinsic motivation. (Lai, 2011) (Hagger & Chatzisarantis, 2011) (Lepper, Sethi, Dialdin, & Drake, 1997). Deci et al. (2001) have investigated the effect of different kinds of rewards on the motivation of children. They argue that rewards are composed of two aspects: the informational and the controlling aspects. The informational aspect of a reward conveys self-determined

competence and can enhance intrinsic motivation whereas the controlling aspect is what determines the external perception of locus of control and can decrease intrinsic motivation. The authors looked at verbal and tangible rewards to establish which one is more likely to be seen as informational or controlling. Their results showed that tangible, task-contingent rewards undermined the intrinsic motivation of children. Verbal rewards, on the other hand, increased intrinsic motivation and were more likely to be seen as informational. Another important result of this study showed that whereas verbal rewards are beneficial for college students, they have a lower effect on children. However, the undermining of intrinsic motivation by tangible rewards was more accentuated in children than in students. This shows that children are more sensitive to extrinsic rewards and that measures to resolve the issue of intrinsic motivation decrease caused by extrinsic rewards need to be taken.

Children’s inherent curiosity and interest in the surrounding world also plays a role in the development of motivation. Constructivist theorists argued that children are “ active builders of knowledge – little scientists who are constantly creating and testing their own theories of the world” (Ravitch, 2001, p. 442). In their study, Deci et al. (2001) also investigated children’s interest and discovered that offering verbal rewards results in enhanced self-reports of interest, whereas all tangible rewards resulted in lower interest. Chen and Xiang (2005) studied the interaction effect between intrinsic motivators and extrinsic rewards on behaviors. They argued that interest is a construct embedded in intrinsic motivation and that it is the most important predictor of future motivation for engaging in an activity. Their study showed

that activities based on interest could have a stronger and prolonged effect in a learning situation. Embedded in this idea, studies have tried to investigate whether children's curiosity could be utilized as a way to reinforce their learning . It has been showed that children understand and are interested in causal information and derive satisfaction from answering with causal factors (Lai, 2011). A recent study (Alvarez & Booth, 2014) utilized children's interest in the world to establish whether it can be used as reward for task engagement. They used causal information to reward children for engaging in a boring activity and discovered that youngsters showed more engagement when presented with strong causal information than when rewarded with something tangible.

This body of literature offers the foundations for the investigation of the effect of causal information as reward on intrinsic motivation, which is the aim of the current study. Causal information as reward is fundamentally an extrinsic factor that can be used to motivate children; however, because it touches upon children's inherent curiosity and can be seen as having an informational aspect, its effect should not be as detrimental. If this type of information increases task persistence, children's engagement could increase as well, promoting better learning. Thus, the *key objective* of this study is to establish whether causal information as reward undermines intrinsic motivation in children between the ages of 8 and 10. It is hypothesized that children who will be rewarded with causal information will not show a decrease in their intrinsic motivation, as opposed to the children who will receive tangible rewards.

The innovative aspect of the study is to be found in the manner it uses previous research which found that causal information engages children just as much as tangible rewards and tries to determine its effect on intrinsic motivation. There is no prior research that has taken this approach, making it the first study that might offer some insight into this issue. This insight could bring about numerous implications for children’s education and learning. Moreover, further research in this area could investigate the method in which the presentation of causally rich information could increase learning. One mechanism that we propose to play a role in this process is that of attention. Catching children’s attention with causal information that appeals to their interest can result in more task engagement and thus an increase in their learning process.

5b. Approach

In order to establish the effect of causal information as reward on the intrinsic motivation of children, a repeated measures experimental design will be used. Based on the discussed literature, it is hypothesized that offering children causal information as reward will not undermine their intrinsic motivation.

The experiment will consist of 120 children aged 8 to 10 doing a boring, repetitive task. Local schools will be contacted in order to gather the necessary participants. The age range was chosen because it represents the ages at which children in most countries are already in school[1]and poses some basic educational knowledge, such as counting or writing. Moreover, the previously mentioned studies showed that the intrinsic motivation of

children tends to decrease with the advancement in age (Lepper, Sethi, Dialdin, & Drake, 1997) (Lai, 2011). A boring, repetitive task of moderate difficulty is likely to keep children somewhat engaged while not making them abandon the task due to its difficulty. The task will be divided into trials and will consist of children counting how many animals of a certain type appear on a screen. After each trial, they will be rewarded according to the group they are in. Each child is required to do 10 trials. To compare the intrinsic motivation of children, three different groups will be made; each group having a minimum of 40 participants. The first group will receive as reward causal information about the animal they were required to count. The second group of children will receive a tangible reward in order to determine whether there is a significant difference between tangible and causal information as rewards. A third group will be the control group, not receiving anything for doing the tasks; thus being used as a base category to which the other two will be compared. Therefore, the type of reward will constitute the independent variable (IV) of the study. The three different groups will represent the three levels of the ID.

In order to establish the intrinsic motivation of children, measurement of it will be done before and after the tasks. Intrinsic motivation will be measured by offering them the chance to do the task before and after the study. In the before and after measurements of intrinsic motivation, the “ free choice” (Thakor, 1994) measure combined with a self-report questionnaire will be used. The children will be told they can do the task for as long as they want, without receiving any rewards. The time spent on the task will be indicative of their intrinsic motivation because it is assumed that their engagement

with the task comes from personal interest, as no other reinforcements are offered.

If there is no difference in the group receiving causal information as reward in the before and after measurement of intrinsic motivation, it would show that this type of reward has no effect on the intrinsic motivation of children. A self-report questionnaire will be used alongside the “ free choice” method to strengthen the measurements. The questionnaire will consist of items which measure interest, enjoyment and attention paid to the task. The answer categories will be based on an enjoyment scale that will show smileys depicting faces from sad to happy and organized on a 5-point Likert scale. This method intends to make the self-report of children more suitable for their understanding. The measurement of intrinsic motivation will constitute the dependent variable of the study.

The innovative aspect of this methodology can be seen in the combination of self-report questionnaires and the previously used method of measuring intrinsic motivation, namely the “ free choice” method. Moreover, the self-report method has been designed with the intention to facilitate children’s’ understanding of the answers they choose. One valuable addition to this method needs to be mentioned. When assessing the intrinsic motivation of children, problems with the accuracy of responses might be encountered even though measures to control for this issue have been taken. It is not guaranteed that children are able to provide unbiased assessments of their interests or motives. However, a more clear image of the results will be gather in this way rather than utilizing only the “ free choice” method, as done in previous research.

5c. Word count (sections 5a-5b)

11 59 70 78

5d. Time plan

The timetable proposed for this research project is divided according to the tasks needed to be accomplished. First, two weeks are dedicated to the writing of the introduction and determining an exact research design. Next, one month is needed to conduct the experiment, which entails finding enough participants and the actual experimental sessions. Another month would be required for the coding, analysis and reporting of data. A final week would be dedicated to finalize the research report. Thus, the total time required to for this research amounts to two months and three weeks.

5f. Social significance(max. 200 words)

It is often said that children are the future of society. They are the ones that will take oven when the current generations fade away. It is important, thus, to provide them with all the resources and quality care available. Motivation plays an important role in the shaping of individuals and as it has been shows, motivation is not a fixed concept. Discovering methods in which we can shape the motivation of children in such way that they maintain their innate excitement and curiosity towards learning and knowledge has major implications for their development. A generation of people who retained an intrinsic motivation as the one of children can give rise to a great number or innovations and societal improvement, bringing about higher life satisfaction (Martin-Albo, Nunez, & Domingues, 2012).

5g. Literature references

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[1]http://data. worldbank. org/indicator/SE. PRM. AGES