Mini Review
Volume 11:12, 2022

Journal of Applied & Computational Mathematics

ISSN: 2168-9679 Open Access

Examination of the History of Mathematical Intuition and its Possible Applications to Education

Wararat Wongkia*

Department of Mathematics, Mahidol University, Salaya, Thailand

Abstract

In light of current psychological and educational research, I examine two of L.E.J. Brouwer's hypotheses regarding the origin of mathematical intuition in this article. Processes related to the perception of formal properties of sensory stimulation, attention, and memory that emerge in early infancy, it is argued, can be understood as the unfolding of the fundamental intuition of mathematics, the abstraction of the relation of n to n + 1. In addition, I contend that over the course of a person's lifetime, these fundamental processes facilitate the creation of more intricate mathematical entities. Mathematical entities constructed from the abstract properties of perceptual activity are expressed and communicated, albeit imprecisely, through language and logic. Last but not least, I think about what the intuitionistic perspective means for teaching mathematics.

Keywords: Mathematics education • Meaningful learning• Control value theory

Introduction

Although people often encounter mathematical phenomena or problems in their everyday lives, they are not likely to use their mathematical knowledge acquired in school to understand the phenomena and solve the problems. To address this inert knowledge issue, educators and researchers should pay more attention to mathematical intuition. The mathematical intuition plays an important role not only in making sense of new mathematical knowledge but also in solving real-world problems based on mathematical concepts and principles. To enhance mathematical intuition in school, we suggest two instructional approaches, intuitive instruction and learning by intuiting, and provided storytelling examples in regard to each of the approaches. Although both approaches emphasise the importance of mathematical intuition, the latter focuses more on student-centred learning activities, which occur in formal and informal settings, than the former [1].

Discussion

In general, CV-theory holds that, in relation to the object at the center of the achievement situation, students' evaluations of control and value are significant determinants of their emotions. The learners' perceived abilities to influence and succeed in the achievement situation are what determine an assessment of control over an achievement task. The intrinsic or extrinsic (i.e., test grade, perceived importance for future) appreciation of an activity by students can be linked to an evaluation of the value of its outcome. The learner's object focus is on whether the achievement situation is related to a (current) activity, a past event (outcome/retrospective), or a future event (outcome/prospective). The levels of control and value appraisals, in conjunction with the object focus, are crucial, according to CV theory, for the intensity of the achieved emotions. For instance, experiencing feelings of anxiety or even hopelessness can result from a lack of confidence in one's ability to perform well on a significant, high-value upcoming math test. Enjoyment may result from working on a math task that is thought to be useful (high value) and that one is confident can succeed at. The valence and activation of the possible emotions can be used to classify them. It has been demonstrated that positive activating emotions like enjoyment have a positive bidirectional link with performance, whereas negative deactivating emotions like boredom have a negative bidirectional link with performance. Although negative activating emotions like anxiety and anger have been shown to have negative bidirectional relations with performance, some state-level studies have found that lower to moderate levels of anxiety may increase persistence in challenging tasks. In a Meta-Analysis, high levels of math anxiety were found to have a negative correlation with math performance. This is probably because people with high levels of anxiety have a higher working memory load [2].

The preceding demonstrates that in the learning process, cause and effect cannot be clearly distinguished. Even though performance is frequently thought of as the result, it can also be thought of as the cause of feelings and evaluation. Without assigning cause and effect, a learner's emotions, appraisal, and performance levels are displayed in a profile. We took a person-centered approach rather than the usual variable-centered analytical approach because we were interested in such qualitatively distinct subgroups of people based on their profiles of emotions, evaluations, and performance in a math context. A predictor like math anxiety could be the cause of differences in math performance when variable-centered analytical methods like general linear models are used. On the other hand, approaches that place a strong emphasis on the person rather than the variable, such as profile analysis, shift the focus to how a variable appears in relation to other variables. Individuals from qualitatively distinct subgroups are revealed through profile analysis [3-5].

Conclusion

Profiles of achievement emotions and their relationship to various predictors or have been the subject of numerous studies. Even though the studies conceptualized and measured achievement emotions differently (for instance, state vs. trait emotions; domain specific versus domain general; retrospective measures versus state measures) and the population studied (students from secondary schools to colleges), three similar achievement emotions profiles emerged in all studies: a positive (adaptive) profile characterized by lower levels of negative emotions and higher levels of positive emotions (such as pride and enjoyment); a negative (maladaptive) personality that is characterized by lower levels of positive emotions and higher levels of negative emotions like boredom and anger; and a profile of no emotion also known as low affect or moderate characterized by lower levels of all emotions. A fourth profile, characterized by additional negative emotions like shame

***Address for Correspondence:** Wararat Wongkia, Department of Mathematics, Mahidol University, Salaya, Thailand, E-mail: Wararatwongkia@mahidol.ac.th*

***Copyright:** © 2022 Wongkia W. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.*

Received: 02 December 2022, Manuscript No. jacm-23-88393; **Editor assigned:** 04 December 2022, PreQC No. P-88393; **Reviewed:** 16 December 2022, QC No. Q-88393; **Revised:** 21 December 2022, Manuscript No. R-88393; **Published:** 28 December 2022, DOI: 10.37421/2168-9679.2022.11.509

and anxiety or feelings of calm but worn out, emerged in some samples. The results on the co-occurrence of emotions of similar valence, which co-occur on both the trait and the found emotion profiles, match.

Acknowledgement

None.

Conflict of Interest

None.

References

1. Biskup, T., Schleicher, E., Okafuji, A., and Link, G., Hitomi et al (2009). Direct observation of a photoinduced radical pair in a cryptochrome blue-light photoreceptor. Angew Chem Int Ed 48, 404– 407.
2. Åkesson, Susanne, Jens Morin, Rachel Muheim, and Ulf Ottosson. "Dramatic orientation shift of white-crowned sparrows displaced across longitudes in the high arctic." Current Biology 15 (2005): 1591-1597.
3. Fleissner, Gerta, Elke Holtkamp-Rötzler, Marianne Hanzlik and Michael Winklhofer et al. "Ultrastructural analysis of a putative magnetoreceptor in the beak of homing pigeons." J Compar Neurol 458 (2003): 350-360.
4. Alerstam, Thomas. "Conflicting evidence about long-distance animal navigation." Science 313 (2006): 791-794.
5. Bonadonna, F., C. Bajzak, S. Benhamou, K. Igloi, P. Jouventin, H. P. Lipp, and G. Dell'Omo. "Orientation in the wandering albatross: Interfering with magnetic perception does not affect orientation performance." Proc Royal Soc B: Biological Sciences 272 (2005): 489-495.

How to cite this article: Wongkia, Wararat. “Examination of the History of Mathematical Intuition and its Possible Applications to Education.” J Appl Computat Math 11 (2022): 509