

# Jean Pratt

Professor  
Information Systems



BEHAVIOUR & INFORMATION TECHNOLOGY, 2016  
<http://dx.doi.org/10.1080/0144929X.2016.1171399>



## The influence of goal clarity, curiosity, and enjoyment on intention to code

Jean A. Pratt<sup>a</sup>, Liqiang Chen<sup>a</sup> and Carey Cole<sup>b</sup>

<sup>a</sup>Department of Information Systems, University of Wisconsin-Eau Claire, Eau Claire, WI, USA; <sup>b</sup>Department of Computer Information Systems and Business Analytics, James Madison University, Harrisonburg, VA, USA

### ABSTRACT

The purpose of this study is to examine the influence of goal clarity, curiosity, and enjoyment – dimensions of flow theory – on the intention to write programming code. This research refines and extends previous information systems (IS) research in two significant ways: first, this research is focused specifically on systems development behaviour; second, this is the first research that isolates specific flow theory constructs associated with systems development behaviour. We used SmartPLS to test our model, as partial least squares is the appropriate statistical methodology for theory building and model testing. Findings are based on survey data from computer IS classes at two different universities. Goal clarity and curiosity independently and significantly contributed to enjoyment when programming, which significantly and positively influenced a future intention to code. Recommendations for practitioners and faculty include testing for curiosity characteristics, providing clear goals, and providing stimuli to pique curiosity.

### ARTICLE HISTORY

Received 6 August 2015  
Accepted 22 March 2016

### KEYWORDS

Flow; behavioural intention; programming; information systems; coding

### 1. Introduction

Programming is a highly intellectual, highly creative activity which, when performed under high pressure, can lead to decreased productivity, increased stress, and eventual burnout (Chilton, Hardgrave, and Armstrong 2010; Moore 2000; Shih et al. 2013). Further contributing to developer stress is the increasing complexity of software (Zhan, Zhou, and Zhao 2012), the continual and rapid evolution of technologies and methodological approaches to software development (Chilton, Hardgrave, and Armstrong 2010; Latorre 2014), and a shortage of talent resulting in perhaps unreasonably high expectations for existing developers (Diedericks and Rothmann 2013). Software application development is fast paced. New applications are continually being developed and upgraded under tight deadlines as organisations increasingly automate business processes and develop applications to reach customers in more personalised ways. Decreased developer productivity has the potential to delay projects, which in turn increases costs. Organisations seeking to remain competitive must retain their systems developers and help them advance their professional skills. Job satisfaction is essential to developer retention.

Environmental factors (e.g. appropriate workload, sufficient – but not surplus – supervisory support, job clarity, and participation in an effective team) are conducive to increased performance and decreased employee

stress (Chilton, Hardgrave, and Armstrong 2010; Zhan, Zhou, and Zhao 2012). Individual factors such as perceived sufficiency in skill level compared to task complexity, personal accomplishment, autonomy, having a match between self-concept and work role, and having sufficient physical, cognitive, and emotional resources can also lead to job satisfaction (Diedericks and Rothmann 2013; Lee and Mike 2011; Moore 2000; Shih et al. 2013). Satisfied employees are more engaged and flourish both at work and in their personal and social roles (Diedericks and Rothmann 2013).

The above studies, while beneficial and contributing to the general body of information systems (IS) knowledge, focus on environmental factors or the combination of environmental, personal, and interpersonal factors. However, productivity researchers ground their work in intrinsic motivation, citing ample evidence to demonstrate that external factors and rewards decrease internal motivation (Deci and Moller 2005). Other factors that decrease intrinsic motivation – deadlines, evaluations, and imposed goals (Deci and Moller 2005) – describe a typical work environment for system developers. The research reported in this paper examines factors that enable systems developers to become individually engaged in their work – to get into their groove (or flow) *despite* a stressful work environment – so that they will flourish both professionally and personally. Given the paucity of systems development talent and

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The purpose of this study is to examine the influence of goal clarity, curiosity, and enjoyment – dimensions of flow theory – on the intention to write programming code. Goal clarity and curiosity independently and significantly contributed to enjoyment when programming, which significantly and positively influenced a future intention to code. This research is important for information systems because it focused specifically on systems development behavior. However, this research is important for all disciplines because it isolated specific flow theory constructs associated with a discipline. Recommendations to faculty include testing for curiosity characteristics, providing clear goals, and providing stimuli to pique curiosity.

CONTACT Jean A. Pratt [prattja@uwec.edu](mailto:prattja@uwec.edu)  
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