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TOWARDS UNDERSTANDING INFORMATION SYSTEMS STUDENTS' EXPERIENCE OF LEARNING INTRODUCTORY PROGRAMMING: A PHENOMENOGRAPHIC APPROACH

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ABSTRACT

Aim/Purpose	This study seeks to understand the various ways information systems (IS) students experience introductory programming to inform IS educators on effective pedagogical approaches to teaching programming.
Background	Many students who choose to major in information systems (IS), enter university with little or no experience of learning programming. Few studies have dealt with students' learning to program in the business faculty, who do not necessarily have the computer science goal of programming. It has been shown that undergraduate IS students struggle with programming.
Methodology	The qualitative approach was used in this study to determine students' notions of learning to program and to determine their cognitive processes while learning to program in higher education. A cohort of 47 students, who were majoring in Information Systems within the Bachelor of Commerce degree programme were part of the study. Reflective journals were used to allow students to record their experiences and to study in-depth their insights and experiences of learning to program during the course. Using phenomenographic methods, categories of description that uniquely characterises the various ways IS students experience learning to program were determined.
Contribution	This paper provides educators with empirical evidence on IS students' experiences of learning to program, which play a crucial role in informing IS educators on how they can lend support and modify their pedagogical approach to teach programming to students who do not necessarily need to have the computer science goal of programming. This study contributes additional evidence that suggests more categories of description for IS students within a business

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	degree. It provides valuable pedagogical insights for IS educators, thus contributing to the body of knowledge
Findings	The findings of this study reveal six ways in which IS students' experience the phenomenon, learning to program. These ways, referred to categories of description, formed an outcome space.
Recommendations for Practitioners	Use the experiences of students identified in this study to determine approach to teaching and tasks or assessments assigned
Recommendations for Researchers	Using phenomenographic methods researchers in IS or IT may determine pedagogical content knowledge in teaching specific aspects of IT or IS.
Impact on Society	More business students would be able to program and improve their logical thinking and coding skills.
Future Research	Implement the recommendations for practice and evaluate the students' performance.
Keywords	information systems, introductory programming, outcome space, phenomenography

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Irene Govender is a Professor of Information Systems and Technology at the University of KwaZulu-Natal. She is an NRF rated researcher in the field of computing and technology for learning. Her field of research is a niche area of OOP programming, technology for learning, and ICT4D. She has 25 years in higher education, teaching security, networking, and OOP programming – 15 of which was specifically in teacher education for computer science. Prior to this period, she has been a teacher of Mathematics. She is widely published and has been the Academic Leader for Information Systems and Technology for the past six years. Served as reviewer for over 15 international journals. Served as Moderator of BSc (honors) degree program (at local accredited colleges) offered by London Metropolitan University in the UK, part of the review panel for Ghana BEd programme, as well as examiner for theses internationally. Has been chief examiner for matric senior certificate for IT for several years. She believes that teaching and learning is a partnership.