



UNIVERSITY OF SOUTHERN QUEENSLAND

AN EXAMINATION OF FACTORS  
INFLUENCING BRUNEIAN SECONDARY  
TEACHERS' USE OF INFORMATION AND  
COMMUNICATION TECHNOLOGY IN  
TEACHING: A SURVEY EXPLORATION

A Dissertation submitted by

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## ABSTRACT

Examining teachers' attitudes/perceptions and their influence on behaviour can be an important step in understanding the psychosocial factors affecting teachers' use of Information and Communication Technology in teaching. This study attempted to provide such an understanding by elaborating Ajzen's theory of planned behaviour (TPB), a widely applied psychosocial theory in modeling behaviours. Basically, TPB explains a behaviour as a consequence of *attitude towards the behaviour*, *subjective norms*, and *perceived behavioural control*. These three direct factors of TPB are, in turn, influenced by salient beliefs or indirect factors: *behavioural*, *normative*, and *control beliefs*, respectively. In this study, the TPB was modified by (1) decomposing each of the three types of beliefs into two dimensions respectively, and (2) incorporating external variables – *age*, *sex*, *subject taught*, *teaching experience*, *teaching period*, *qualification*, *level of class*, *classroom access*, and *computer laboratory access*. Using these predictor variables, an Information and Communication Technology Use Model (ICTUM) was developed for assessment and comparison in performance with the TPB.

Using a survey questionnaire, data were collected from a total of 1,040 secondary school teachers in eighteen government schools in Negara Brunei Darussalam. Structural equation modeling, using AMOS 5.0 software, was employed as the major statistical analytic technique for a series of data analyses: measurement model assessment for validity and reliability tests; and assessments of the models, ICTUM and TPB.

The proposed model, ICTUM, was found to fit only marginally and the modification efforts through beliefs decomposition and external variables

incorporation provided only a small increase in the amounts of variance explained by the predictor variables. However, the TPB model of direct factors was found to be a good-fitting model showing *attitude towards behaviour*, and *perceived behavioural control*; as predictors of *intention*; and *intention* as a stronger predictor of *use of ICT* than *perceived behavioural control*. By demonstrating the significance of those factors as predictors of *intention* and *use of ICT*, this study suggests that augmenting teachers' positive attitudes towards the use of ICT and supporting them technically and personally could encourage teachers to increase the use of ICT in their teaching. This study also suggested a need for future research on the direct influence of salient beliefs on *intention*, and behaviour (*use of ICT*) respectively. Although the TPB model is theoretically and statistically justifiable, further testing with different samples is required. Through its use of a theoretical and statistical modeling approach, the current study represents an initial step towards uncovering fundamental mechanisms that explain teacher use of ICT in teaching.

## Certification of Dissertation

I certify that the ideas, experimental work, results, analyses, software and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award, except where otherwise acknowledged.



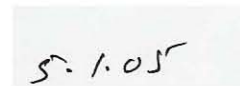
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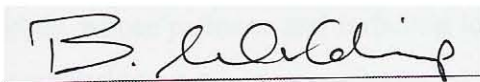
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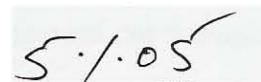
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I dedicate this dissertation to my mother whose unceasing prayer, motivation and inspiration encouraged me to complete this long journey, and to my beloved husband and children whose patience and unfailing love have accompanied me throughout this journey and making it a joyous one.

## ABBREVIATIONS

ACOT	- Apple Classroom of Tomorrow
AMOS	- Analysis of Moment Structures
ASEAN	- Association of South East Asian Nations
BATT	- Beliefs About Teaching with Technology
BECTA	- British Educational Communication and Technology Agency
BIT	- Brunei Information Technology
CDD	- Curriculum Development Department
CD-ROM	- Compact Disk Read Only Memory
CFA	- Confirmatory Factor Analysis
EFA	- Exploratory Factor Analysis
FRSS	- Fast Response Survey System
ICT	- Information and Communication Technology
ICTE	- Information and Communication Technology in Education
ICTUM	- Information and Communication Technology Use Model
IT	- Information Technology
MOE	- Ministry of Education
NCES	- National Center for Education Statistics
SEM	- Structural Equation Modelling
SPSS	- Statistical Package for Social Science
TAM	- Technology Acceptance Model
TLC	- Teaching, Learning, and Computing
TPB	- Theory of Planned Behaviour
TRA	- Theory of Reasoned Action
UTAUT	- Unified Theory of Acceptance and Use of Technology

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