

Tracing the impact of self-directed team learning in an Air Traffic Control environment

by

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Declaration

I, Christiaan Gerhardus Joubert (student number: 24218783) hereby declare that all the resources that were consulted are included in the reference list and that this study is my original work and it has not been submitted before for any other degree or examination at any other university.

Christiaan Gerhardus Joubert
October 2006

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Key terms

Air traffic control

Air traffic control training

Continuation training

Human factors

Self-directed learning

Self-directed team

Self-directed team learning

Self-managed work team

Team learning

Teamwork

Summary

Tracing the impact of self-directed team learning in an Air Traffic Control environment

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The aim of self-directed team learning initiatives is to provide a further level of defence against an eventuality by ensuring that air traffic controllers are aware of the sources of human fallibility, and by developing in the individual controllers and air traffic control teams the knowledge, skills and attitudes that will result in the successful management and containment of inadvertent error.

To gain a deeper understanding of self-directed team learning, I investigated the role and contribution of self-directed team learning principles and strategies that were present in the South African Air Force air traffic control team-based work environment. This research study was directed by the following primary research questions: Does self-directed team learning impact on the air traffic control work environment, and what is the nature of self-directed team learning's impact on the air traffic control work environment?

Insights gained as a result of this study contributed to the body of research concerned with learning design, development, implementation and evaluation by self-directed teams as well as the air traffic control discipline.

In this mixed-method study quantitative data collection was performed by means of a self-directed team learning questionnaire and a learning approach questionnaire, whereas qualitative data collection relied on

individual interviews and focus group interviews. This study involved 25 South African Air Force air traffic controllers (from three operational air traffic control centres).

The nature of self-directed team learning's impact on the air traffic control work environment was illustrated by individual and collective (team) views and dynamics. The impact of air traffic control team performances was traced in terms of identified teamwork characteristics, activities, dynamics, performance measures and focus areas and reflective practices. Results of this study indicated that self-directed team learning offered opportunities to individuals and teams to influence air traffic control performances in an air traffic control work environment. A perceived positive relationship between self-directed team learning and air traffic control operational outputs could be traced.

Lastly I concluded that self-directed learning by air traffic control teams had an impact on air traffic control operational outcomes, thus contributing towards a critical air traffic control goal – aviation safety.