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Assessing driver distraction on simulated driving

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Abstract

Distraction experienced by the driver while driving is something that can reduce the level of performance, concentration, and attention of the driver. On the other hand, distraction makes driving activity less monotonous, a condition that can end up in sleepiness on wheel. This research was conducted to investigate further the outside distraction effect on drivers' performance, attention, and alertness. The performance level was measured through driver 's response time on a simple random stimulus. Spare attentional capacity was quantified by the percentage of eye gaze shifting while driving. Driver alertness was monitored through subjective sleepiness level. Within subject design experiments were conducted in a simulator for ten participants, where they drove with and THOM distraction. Based on the results, response time and spare attentional capacity showed significantlydifferentresultsbetweendrivingwithandwithoutdistraction, respectively the test in p=.001 (t=4.518, df=9) and p=.000 (t=5.802, df=9). Driving with distraction were resulted in significantly slower response time and higher spare attentional capacity. However, the alert ss level did not indicate a significant difference between driving with and without distraction. © 20 SERSC.

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Assessing Driver Distraction on Simulated Driving

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Abstract

Distraction experienced by the driver while driving is something that can reduce the level of performance, concentration, and attention of the driver. On the other hand, distraction makes driving activity less monotonous, a condition that can end up in sleepiness on wheel. This research was conducted to investigate further the outside distraction effect on drivers' performance, attention, and alertness. The performance level was measured through driver's response time on a simple random stimulus. Spare attentional capacity was quantified by the percentage of eye gaze shifting while driving. Driver alertness was monitored through subjective sleepiness level. Within subject design experiments were conducted in a simulator for ten participants, where they drove with and without distraction. Based on the results, response time and spare attentional capacity showed significantlydifferentresultsbetweendrivingwithandwithoutdistraction, respectively the tests resulted in p=.001 (t=4.518, df=9) and p=.000 (t=5.802, df=9). Driving with distraction were resulted in significantly slower response time and higher spare attentional capacity. However, the alertness level did not indicate a significant difference between driving with and without distraction.

Keywords: Simulated Driving

1. Introduction

Distraction experienced by the driver when driving is something that can reduce the level of performance, concentration, and attention of the driver. Based on data from the Polantas in 2013 figures stated that a total of 29.3% of the total accidents that occurred (100,106) were caused by drivers who were negligent or lacking in concentration. Generally, the distraction experienced by the driver is a distraction that occurs in the car such as playing mobile phones while driving, but there are also distractions from outside the car such as advertisements in the form of billboards, billboards, posters, or road side accidents which can also reduce performance and concentration. the driver and can cause traffic accidents (Shaw et al., 2018).

According to Article 1 number 24 of Law Number 22 Year 2009 concerning Road Traffic and Transportation ("LLAJ Law"), traffic accidents are an incident on an unexpected and unintentional road involving a vehicle with or without another road user resulting in a victim humanand/orpropertyloss.AndaccordingtotheBigIndonesianLanguageDictionary(KBBI), advertisementsarenewsormessagestoencourage,persuadethepublictobeinterestedinthe goods and services offered; Notification to the public of goods or services sold, installed in the mass media (such as newspaper sand magazines) or in public places.

Of all types of advertisements that exist, basically the purpose of advertising is to change o influence the attitude of the people who seethead, in this case is the attitude of the consumer. Based on the purpose of the ad, then there is one thing that needs to be considered so that advertising can be accepted as important information for consumers, namely the need for consumer attention. The first theory that explains about attention or attention emphasizes that each individual has attention capacity that can be processed with a limited amount. As is known, road side advertisements such as billboard shave

Vibro-Acoustic Signal Based Fault Diagnosis of Electric Motor Using Artificial Neural Network

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Abstract

This work presents a model for fault detection of an electrical motor using vibration and noise signals. Most of the motor faults generate specific patterns in the motor noise and vibration that can be captured and analyzed for diagnosis. Early detection of motor faults will save the motor from sequent deteriorations into a lot of severe conditions, and thus can save lot of maintenance costs. An accelerometer was used to capture decently accurate information of the motor-vibration and Microphone was used to capture decently accurate information of the noise. Features were extracted in time and frequency domain using which an Artificial Neural Network (ANN) called Multi-Layer Perceptron (MLP) was trained to learn different motor conditions such as healthy and faulty. This study shows that mistreatment easy options and ANN structure will effectively and with efficiency classify differing types of motor faults. The use of low-cost sensors has made this method very attractive to wide range of applications where a cost-effective solution is desired.

Keywords: Electric motor-Fault Detection, Auto Spectrum, Vibration Analysis, ANN (Artificial Neural Network) and MLP (Multi-Layer Perceptron).

1. Introduction

A large part of the electrical energy in Egypt is consumed by industries and domestic motors. The manufacturers and consumers of these motors are now interested to include condition-monitoring equipment, by which they can improve the safety and reliability of those equipments. A number of techniques are reported in the literature to diagnose and detect motor faults [1]. Early detection of abnormalities in the motors helps reducing the fault number and associated repair costs. Monitoring the motor condition is important to detect any fault in an early stage that can eliminate the risks of intense motor faults [1].

The influence of vibrations over the system is observed by performing motor current signal analysis to detect the presence of faults. The obtained results show the feasibility of detecting multiple faults in a kinematic chain [2] faults have to be treated before totally damaging the machine and consequently it will reduce the maintenance cost and shutdown time. Thus, there is a growing need for a simple, low cost and reliable technique to detect motor faults. Dejan V. Matijević and Vladimir M [3] studied Modern Contributions in Vehicle Noise and Vibration Refinement with Special Emphasis on Diagnostics. Partha Sarathee et al [1] reviewed faults and fault detection techniques on induction electric motor. Sy-Ruen Huang et al [4] built induction motor fault diagnosis

Malaysia and China Students' Feedback on the Implementation of Critical Thinking Pedagogy: A Case Study

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Abstract

Having a knowledgeable and highly skilled human capital is an important factor for Malaysia to transform its economy towards achieving a developed nation and highincome status by the year 2020. Hence, the Malaysian government strives to improve the enrolment of local and international post-graduate students by providing an effective learning process to ensure their quality. This research aimed at describing the impact of critical thinking pedagogy using case-based learning in curriculum studies course among postgraduate students. It was a case study with qualitative approach. Interview technique was used in this study whereby five students who enrolled in curriculum studies course were selected as the respondents. The study sample underwent learning through critical thinking pedagogy using SCSCBL interactive application. Overall, the findings showed that the teaching approach of using the case-based learning can promote critical thinking skills among pre-service and in-service teachers. This study has provided positive implications on the postgraduates' soft skill development as preparation for their future career.

Keywords: critical thinking pedagogy, in-service teacher, pre-service teacher

1. Introduction

Present university students including teachers who are pursuing their studies are achieving little connection and depth, either within or across subjects. Atomized lists dominate textbooks, atomized teaching dominates instruction, and atomized recall dominates learning (Sternberg, Kaufman & Grigorenko, 2008). What is learned are superficial fragments, typically soon be forgotten. What is missing is the coherence, connection, and depth of understanding that accompanies systematic critical thinking (Lee, 2012). To become 21 century teachers, they must prepare themselves in critical thinking and able to produce a good critical writing. Teachers who are furthering their studies at masters' level are supposed to be ready to increase their skill in terms of higher order thinking. However, previous study finding (critical writing assignment) showed that teachers need to improve critical writing through analytical thinking, creative thinking and practical thinking (Sternberg, 2018). Apart from that, various studies have found that many teachers are lacking critical thinking skills when giving their feedback on students' work like essays and also online forum. Thus, it is crucial to train teachers especially those who are furthering their studies to be critical thinkers. Additionally, exposures and proper trainings to effective teaching methods may also help to stimulate their higher order thinking skills (HOTS). This is crucial especially to students who are enrolling courses in curriculum studies.

This study adapted the case-based learning (CBL) in its intervention (the Smart Curriculum Studies Case Based Learning-SCSCBL). Its main purpose was to improve