

Using VAK Approach to Enhance Student's Learning via Moodle Platform

1

By Alex Tsang (BEng (Hons), MSc, PGDE(PVE))

Lecturer,

(Hong Kong Institute of Vocational Education (IVE))

Contents:

- Challenges in this generation
- Using ADDIE model in multimedia learning
- VAK learning styles review
- Gagne's nine Instructional Events Design with Moodle platform

Challenges in this generation



3

- Large learning individual differences
- Low learning motivation

Using ADDIE model in multimedia learning

-ADDIE (Analysis, Design, Develop, Implement and Evaluation)

Analysis:

Problems:

Students with low motivation

Large learning individual differences (students had different academic backgrounds)

Solutions :

Online instant feedback & attractive animations can improve student's motivation

Mastery e-learning can minimize the learning individual differences

Using ADDIE model in multimedia learning

Design:

Objectives:

A Higher Diploma course for Electrical Engineering “Control and Automation System” module, to enhance the learning process for the LabView software by knowing VAK learning styles and formative assessment.

Sequencing:

Students do the VAK test → using the VAK packages → formative assessment

Media selection:

Google and Moodle platforms

VAK learning styles



-**Visual** learning style has a preference for seen or observed things, including pictures, diagrams, demonstrations, displays, handouts.



-**Auditory** learning style has a preference for the transfer of information through listening: to the spoken word, of self or others, of sounds and noises.

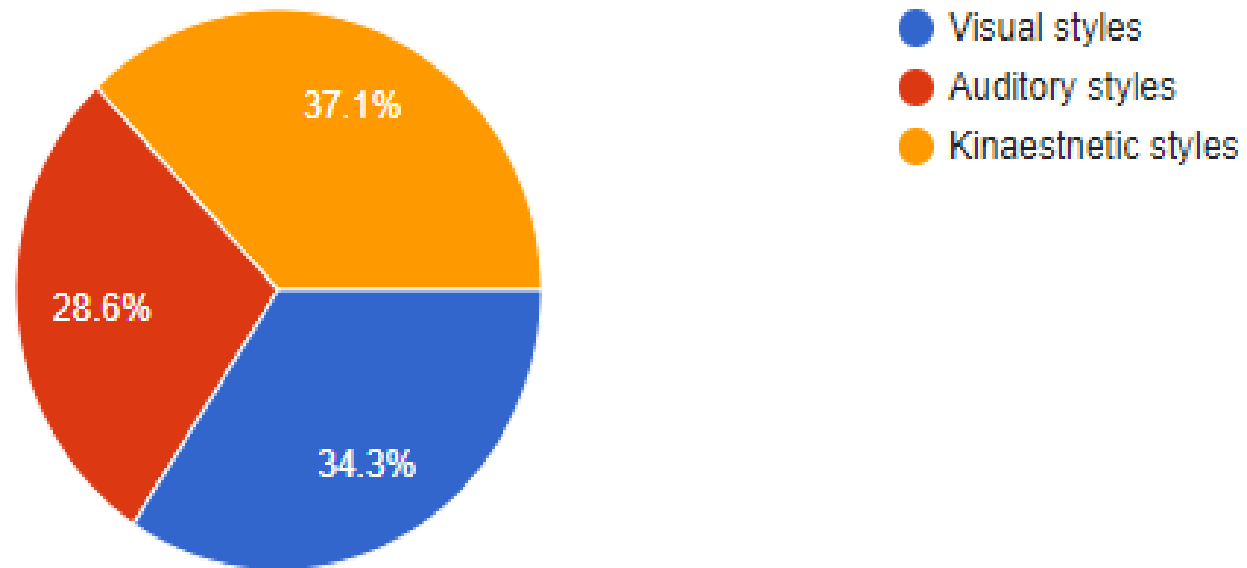


-**Kinesthetic** learning style has a preference for physical experience - touching, feeling, holding, doing.

VAK learning styles

What is your learning styles?

35 則回應



1.1 Visual styles

Someone with a Visual learning style has a preference for seen or observed things, including pictures, diagrams, demonstrations, displays, handouts, films, flip-chart,



visual styles- labview manual

1.2 Auditory

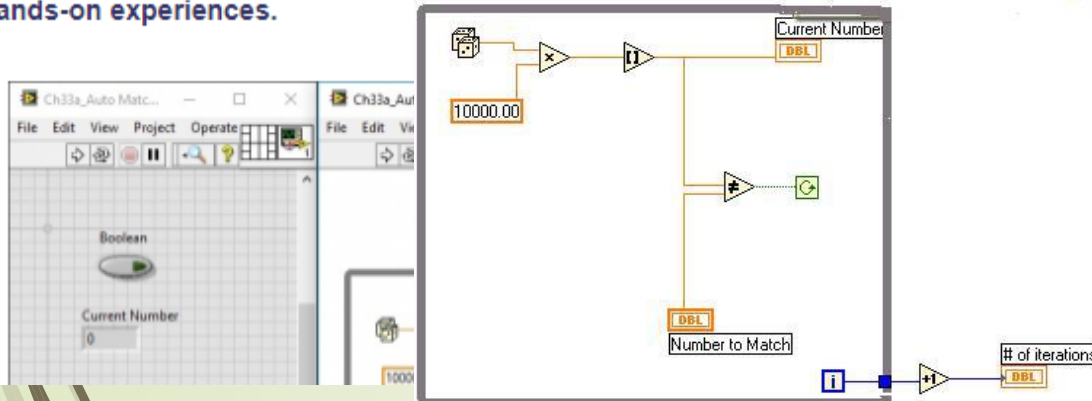
Someone with an Auditory learning style has a preference for the transfer of information through listening: to the spoken word, of self or others, of sounds and noises.



labview while loop audio

1.3 Kinaesthetic

Someone with a Kinaesthetic learning style has a preference for physical experience - touching, feeling, holding, doing, practical hands-on experiences.



VAK packages in Moodle

► <http://www.ni.com/pdf/manuals/320999e.pdf>

► <https://www.youtube.com/watch?v=E1O4frOtTO4>

Google formative assessment



9

LabView Formative Assessment 2

what is the meaning of data type with pink color ?

Scalar



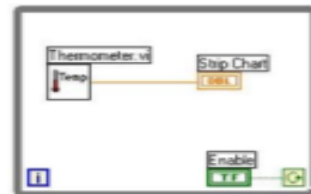
- ☐ number data
- ☐ boolean
- ☐ string

What is the structure type of below diagram?



- ☐ For loop
- ☐ while loop
- ☐ case loop

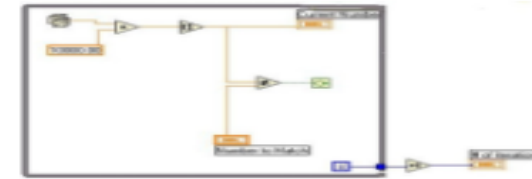
what is the result if the enable switch is false?



continuously

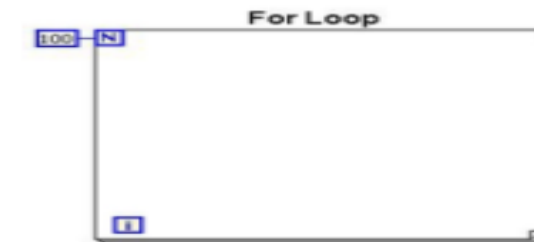
- ☐ No change
- ☐ the program will be stopped

Can this program use 'For loop' instead of " while loop"?



- ☐ yes
- ☐ no

What is the iteration number in the first loop?



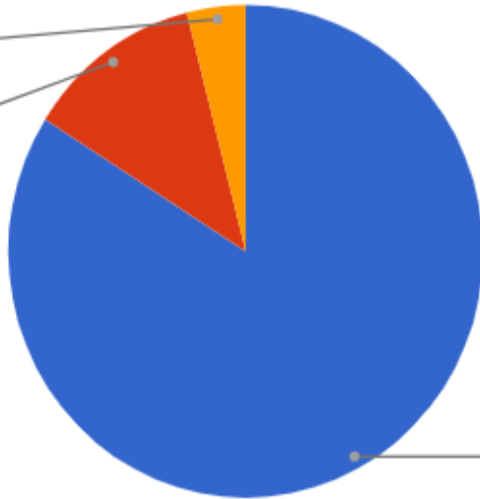
- ☐ 1
- ☐ 0
- ☐ 100

Google formative assessment

Group A

1 what is the meaning of data type with pink color
?計數

boolean
4.0%
number data
12.0%

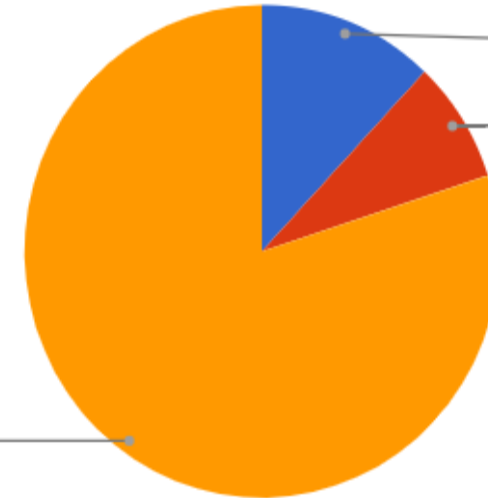


string
84.0%

Group B (control)

what is the meaning of data type with pink color
?計數

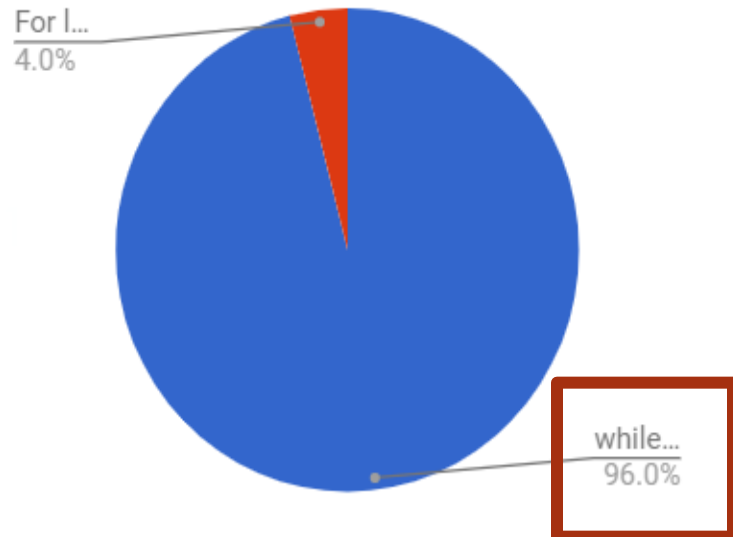
number data
12.0%
boolean
8.0%



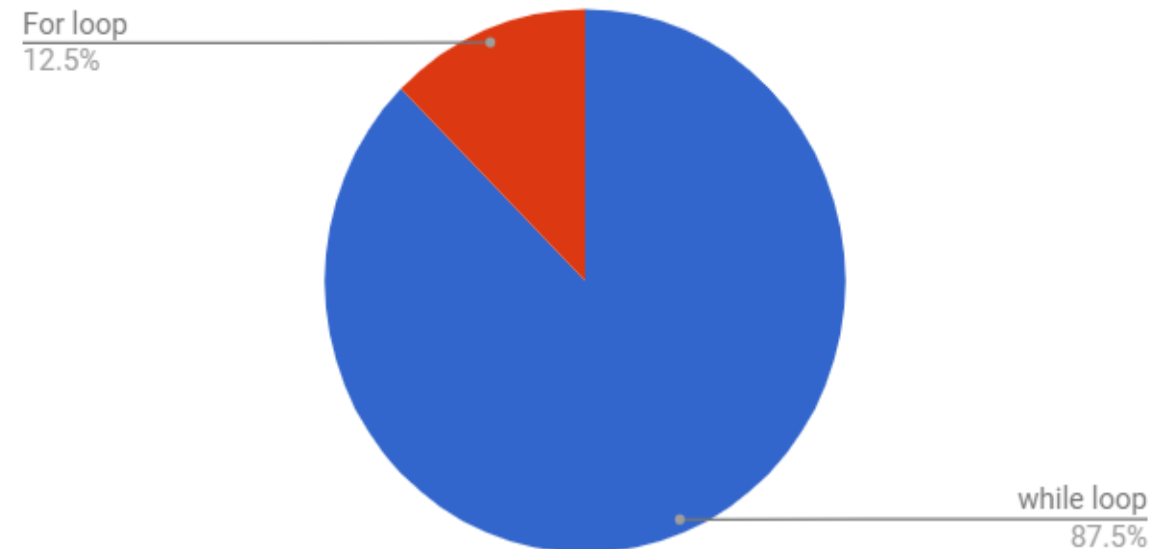
string
80.0%

Google formative assessment

What is the structure type of below diagram?

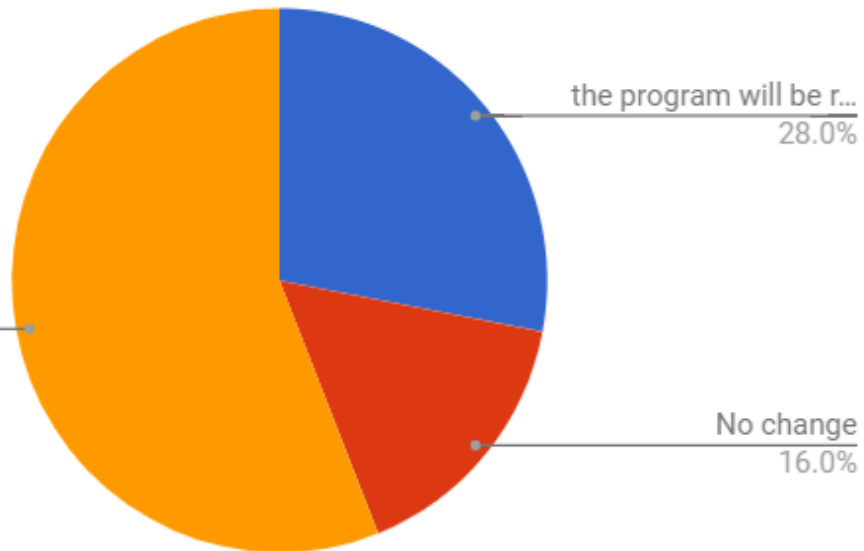


What is the structure type of below diagram? 計數



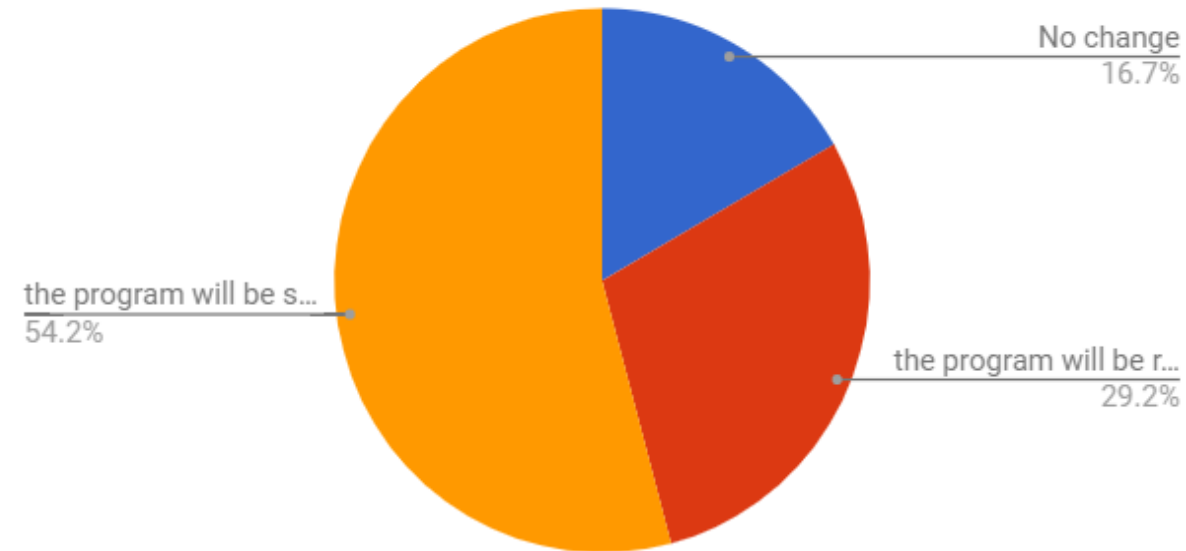
Google formative assessment

what is the result if the enable switch is false?計數



the program will be s...
56.0%

what is the result if the enable switch is false?計數



the program will be s...
54.2%

No change
16.7%

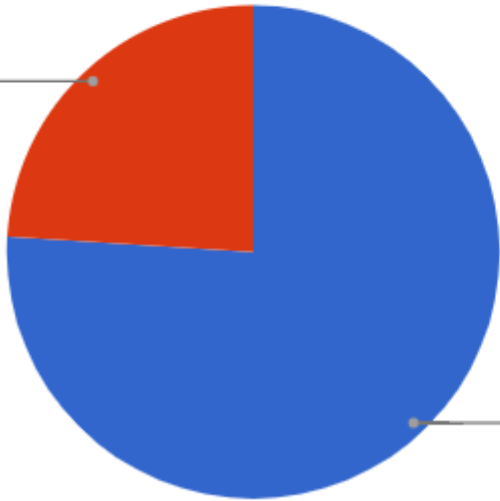
the program will be r...
29.2%

Google formative assessment

0

Can this program use 'For loop' instead of " while loop"?

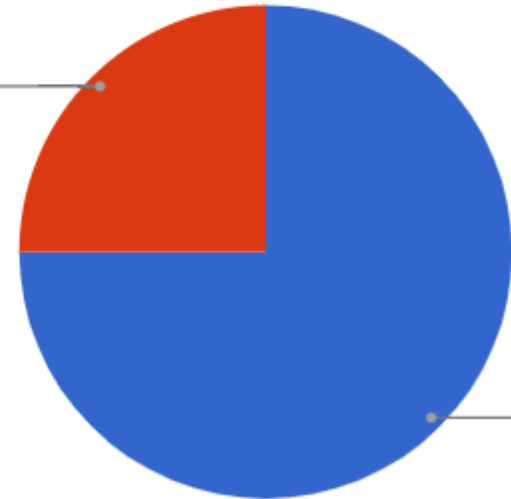
yes
24.0%



no
76.0%

Can this program use 'For loop' instead of " while loop"?

yes
25.0%



no
75.0%

Google formative assessment

- Limitation: the google assessment cannot give the correct answers individually.
- Use **Moodle platform** for further assessment with correct feedback individually

Using ADDIE model in multimedia learning

Development & Implementation:

Instructional activities:

use Gagne's nine instructional events (Mayer, R.E., 2001)

1. Gaining attention
2. Informing learners of objectives
3. Stimulating recall of prior learning
4. Presenting the content
5. Providing learning guidance
6. Eliciting performance
7. Providing feedback
8. Assess performance
9. Enhance retention and transfer

Gagne's instructional events

16

Instructional event	Corresponding design	Purpose
1. Gaining attention	News cut video is introduced first.	To arouse student's motivation in order to help the memory process (高源令, 2010)
2. Informing learners of objectives	Simple wording and graphic to show Objectives	To let students the aim and the expectations in learning
3. Stimulating recall of prior learning	Use Moodle to check students prior knowledge	To help recalling prior learning to develop from zone of proximal development (陳世芬, 2010)
4. Presenting the content	Present the content systematically and different VAK learning styles can be used.	To construct interrelationships of different concepts To encourage multi-channel learning
5. Providing learning guidance	To give a examples to explain the array	To provide scaffolding and to maintain learning motivation

Gagne's instructional events

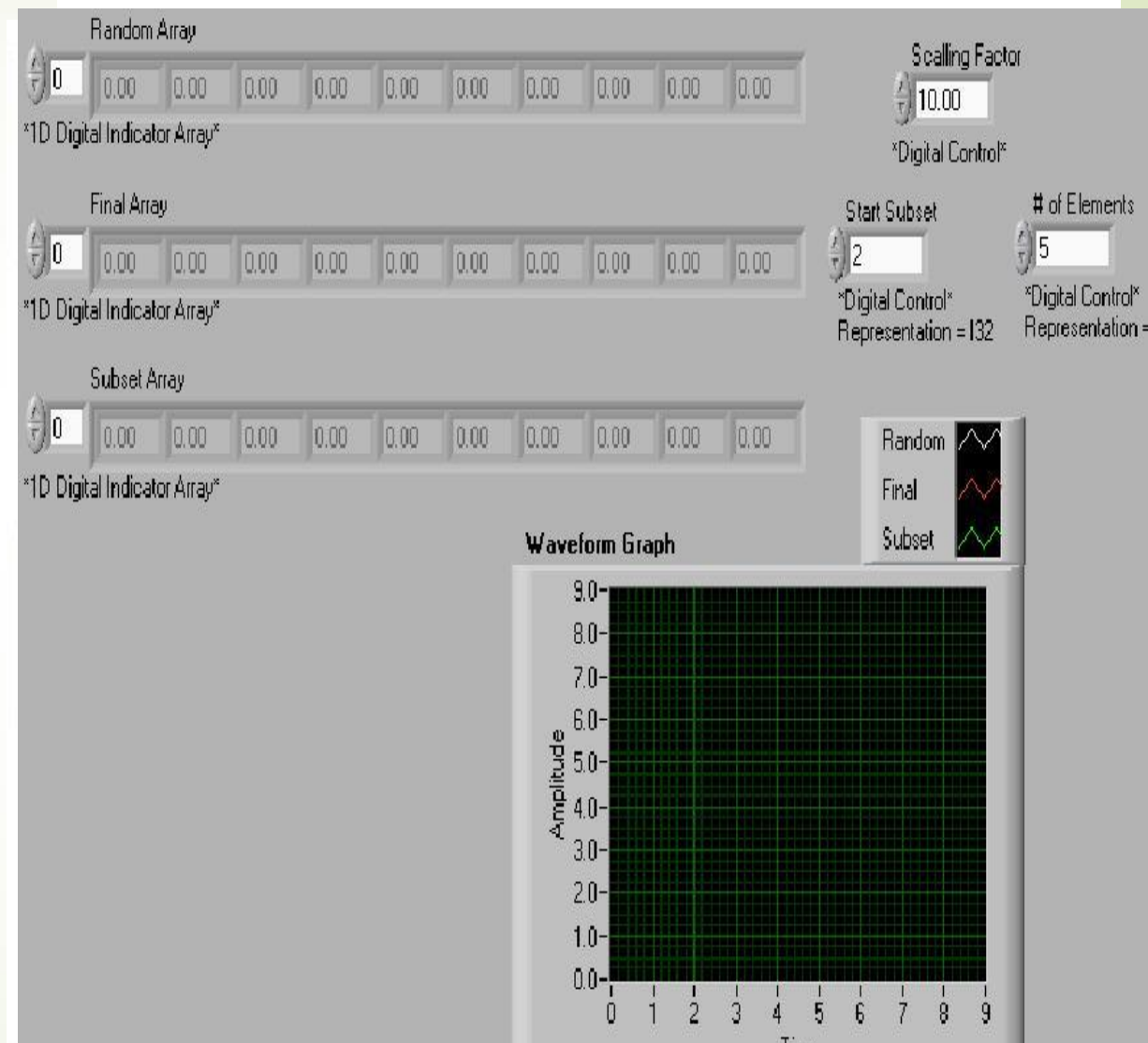
17

Instructional event	Corresponding design	Purpose
6. Eliciting performance	To give a short quiz in Moodle to do the formative assessment	To check students' level of understanding To provide online instant feedback
7. Providing feedback	To perform the summative assessment e.g. MC test and give an instant feedback	To check students' level of understanding By instant feedback
8. Assess performance	Provide instant scores of test results	To explain the difficult questions
9. Enhance retention and transfer	To carry out a min-case study in order to have an authentic assessment.	To generalize the knowledge To encourage "learning by doing" To check students' level of understanding

Gagne's instructional events

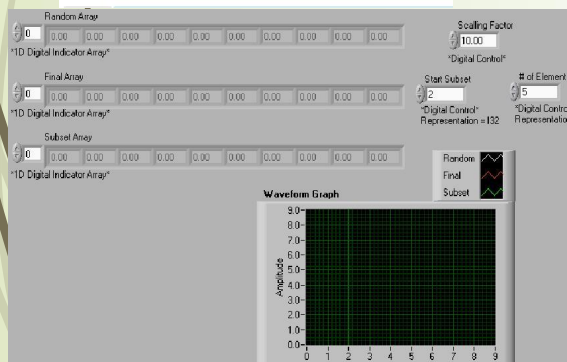
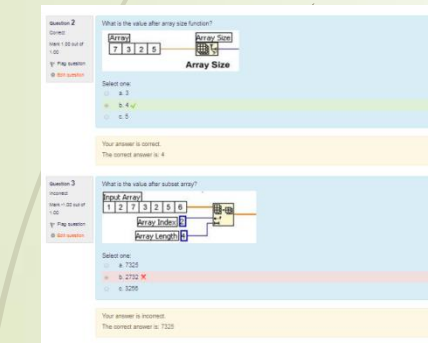
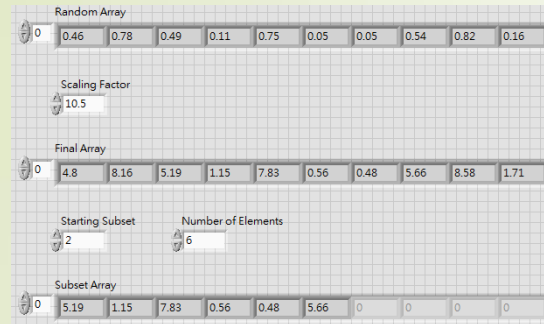
18

1. Gaining attention
2. Informing learners of objectives
3. Stimulating recall of prior learning
4. Presenting the content
5. Providing learning guidance
6. Eliciting performance
7. Providing feedback
8. Assess performance
9. Enhance retention and transfer

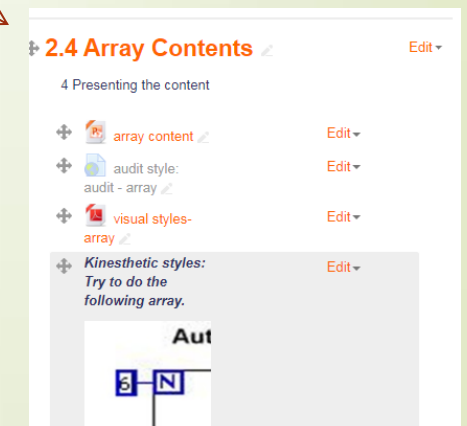
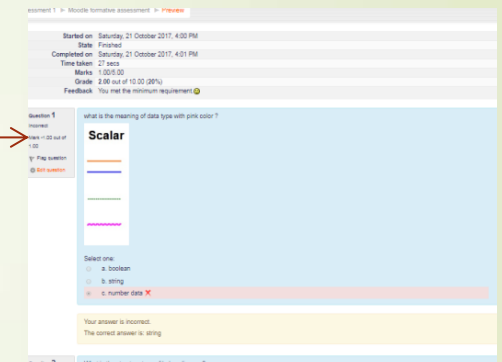
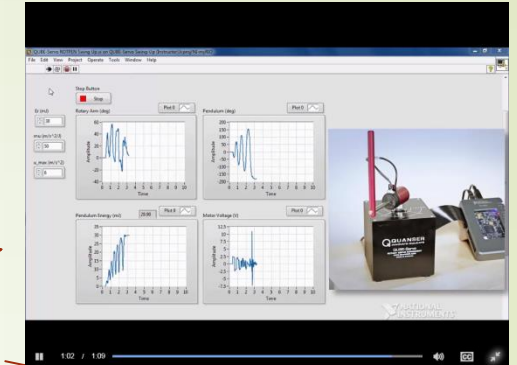


Gagne's instructional events

19



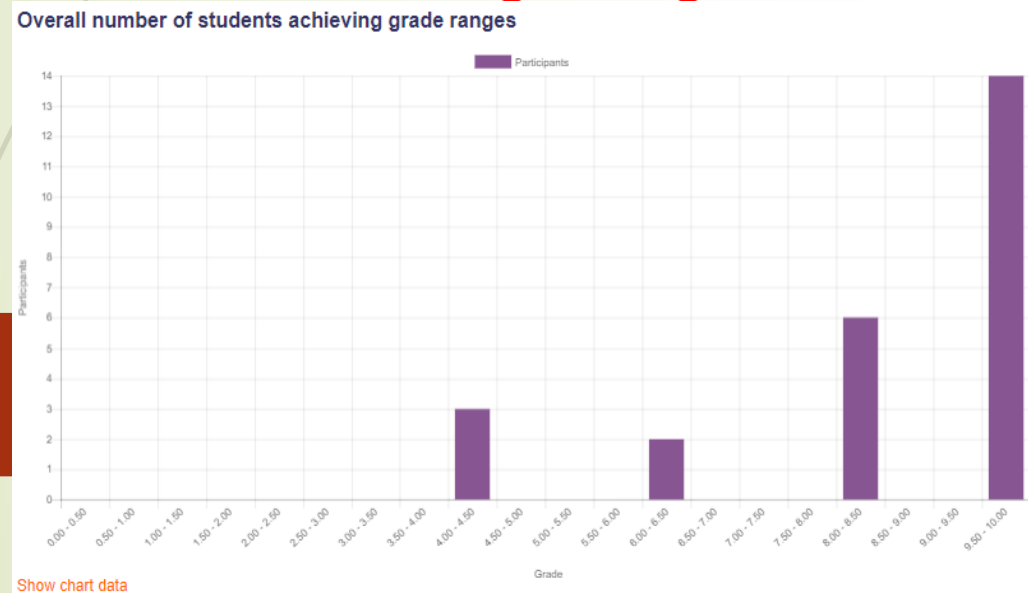
1. Gaining attention
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6. Eliciting performance
7. Providing feedback
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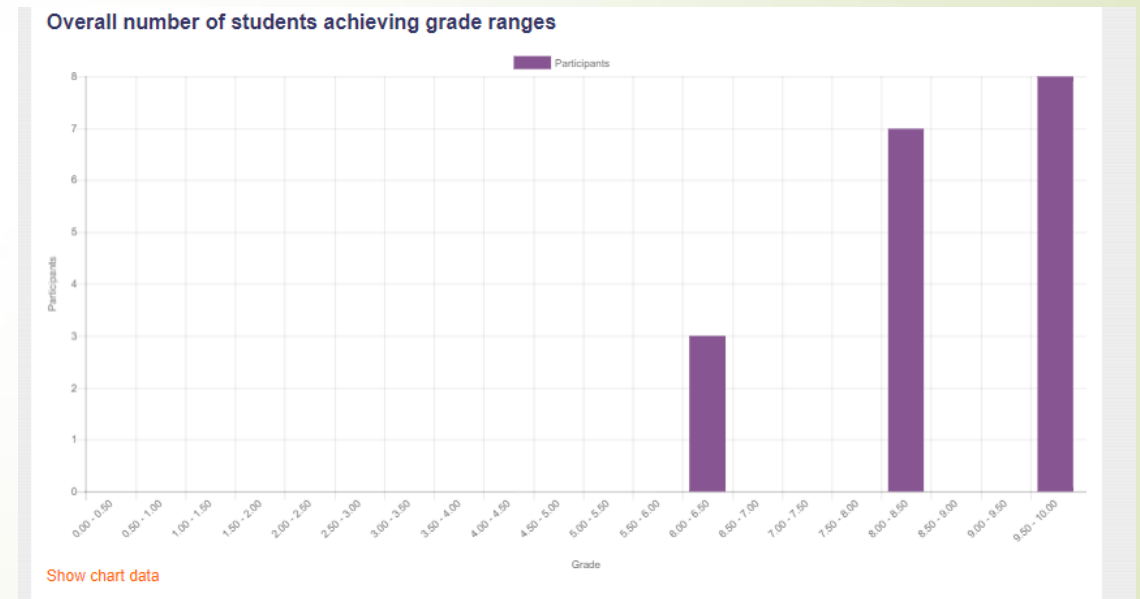
Using ADDIE model in multimedia learning

Evaluation : Moodle Formative Assessment at early learning stage

20



Q2

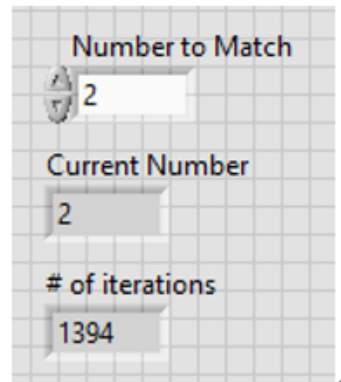


Q3

Using ADDIE model in multimedia learning

Evaluation :Formative Assessment at middle stage

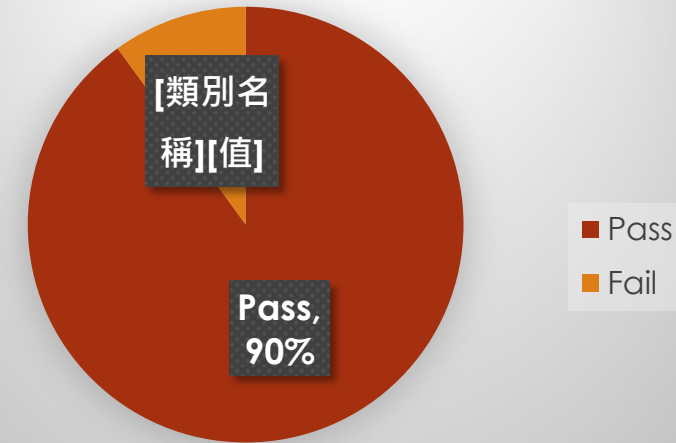
5. Design a LabVIEW program (block diagram) to generate a random integer number between 1 to 1000. Then the random integer number will be run until matches a number specified "Number to Match" in the front panel. The matched number is indicated in "Current Number" and the number of iterations is indicated in "# of iterations" in the front panel.
- Sample results in the Front panel:



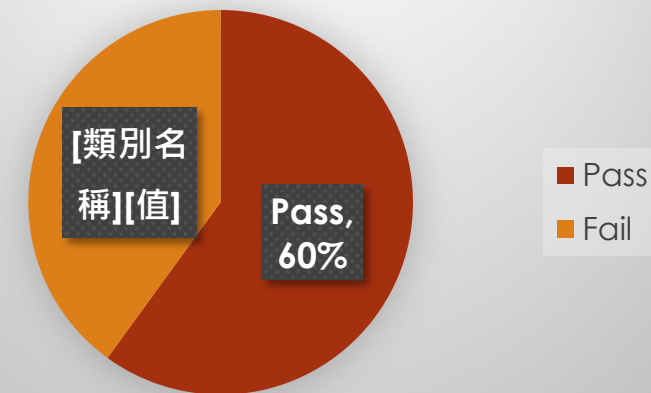
Using ADDIE model in multimedia learning

Evaluation : Formative
Assessment at middle stage

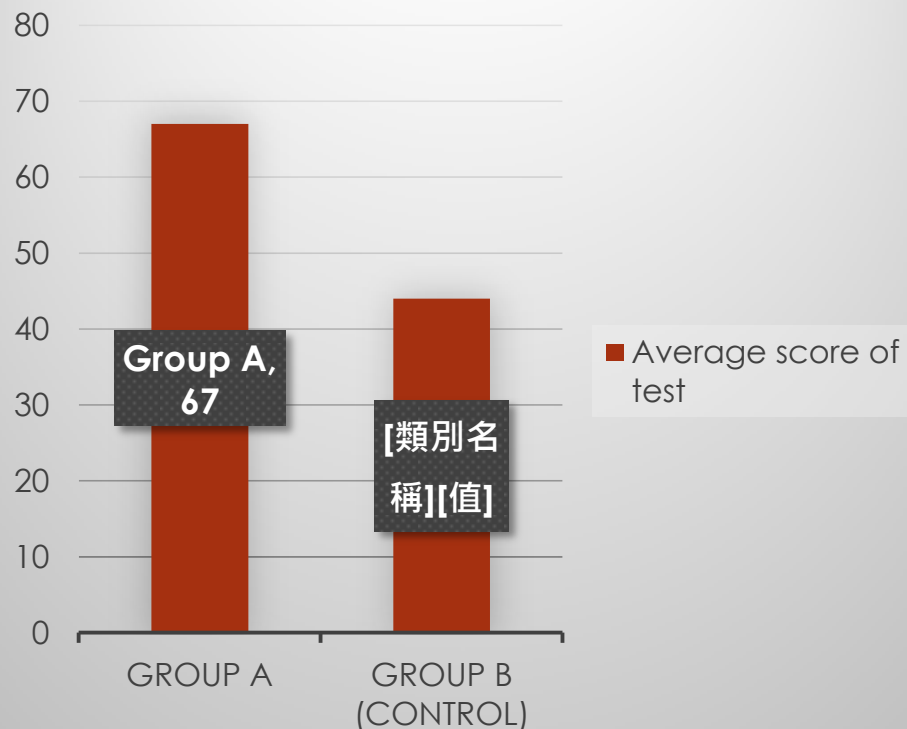
Pass Rate of group A



Pass Rate of group B
(control)



Average score of test



Conclusion:

- ADDLE model provides structural teaching strategy analysis
- Students have relative good performance if they know their VAK styles
- Moodle E-learning platform gives instant feedback individually to improve low motivation and individual differences
- Gagne's instructional design provides lesson development to improve low motivation and individual differences

References:

- Mayer (2001) 'The Promise of Multimedia Learning' & 'Principles of Multimedia Design'
- HUI King Fai Sammy, research into effective teaching in technical and vocational education and training: implications for teachers
- 葉玉珠、高源令、修慧蘭、陳世芬、曾慧敏、王珮玲、陳惠萍著 (2010). 教育心理學(第二版) 台北,心理出版社

Thanks