

# Investigating Myths and Misconceptions Within the Maltese Primary School Setting

Loredana Muscat

## Abstract

Educational myths occur when evidence-based research does not confirm common beliefs about learning and teaching methodology. On the other hand, educational misconceptions are beliefs which have been debunked by research but are still being used in a classroom setting. This research aims to investigate the beliefs of Maltese primary school educators concerning the main educational myths and misconceptions. The researcher seeks to provide a perspective of the local educators in relation to common educational myths and how these beliefs could infiltrate the Maltese educational system. A quantitative explorative design was utilised to evaluate the beliefs of Maltese primary school educators concerning four areas: Learning Styles, Bilingualism, Digital Learners and Homework. One hundred and seventy-nine educators responded to an online questionnaire. The researcher used descriptive and inferential statistics to analyse the data. Results indicate that primary school educators believe in myths related to learning styles the most, followed by misconceptions about homework provision. Chi-square analysis revealed that myths were widespread throughout different cohorts, where no difference between educators' roles and level of education could be identified; however, some differences between sectors could be identified.

## Keywords

Educational Myths, Evidence-Based Education, Learning Styles, Bilingualism, Digital Learners, Homework

## Introduction

Myths and misconceptions have often infiltrated educational endeavours. An educational myth occurs when common beliefs about learning and teaching methodology are not supported by experimental investigations or, worse, when they are supported only by marketing techniques (Cheung & Slavin, 2022). The extensive dispersion of myths within an educational system may affect

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Contact: Loredana Muscat, [loredana.muscat@ilearn.edu.mt](mailto:loredana.muscat@ilearn.edu.mt)

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the teachers' ability to facilitate learning while wasting precious learning time through pedagogies that are either ineffective or hindering a child's educational advancement (Robert & Cheung, 2022; Pashler et al., 2008). Although the educational field cannot be assessed through strict scientific methods, it is still supported by educational psychology, neuroscience, computer science, instructional design and cognitive science (Sawyer, 2008). On the other hand, misinterpreting facts drawn from these fields could also help enhance the breadth of misconceptions (Adey & Dillon, 2012).

This research aims to investigate the belief of primary school educators concerning popular myths or misconceptions within the educational sector. The study primarily aims to investigate the awareness of misconceptions of educators in relation to four areas: learning styles, bilingualism, homework and digital learners. The researcher investigated whether variables such as school setting, the role of the educators and the level of training influence the participants' responses.

## **Background Literature**

### ***Learning Styles***

Investigations into the prevalence of the belief towards learning styles amongst educators have shown that teachers generally show significant levels of endorsement towards theories related to learning styles (Robert & Cheung, 2022). Learning styles are simplistic as these take away from the complexities of learning. In addition, teaching according to learning styles can keep away from teaching through multimodal methods and teaching pedagogy supported by extensive research (Koć-Januchta et al., 2019; Massa & Mayer, 2006; Mayer, 2002; Nancekivell et al., 2021). In a systematic review of the literature concerning learning styles, Adey and Dillon (2012) maintain that the literature retrieved is incoherent and theoretically confounded. Most studies that state evidence for learning styles do not satisfy validity and reliability criteria (Kirschner, 2017). Yet, it has been considered one of the strongest and most persistent educational myths (de Bruyckere et al., 2015; Furey, 2020; Kirschner, 2017; Newton & Miah, 2017). The strength of such a myth is enhanced by many factors, of which persistent marketing, perpetual reference to learning styles from higher institutions and teacher educator programmes, and also because teachers are unaware of the science that disproves it.

Studies investigating the endorsement of educators towards learning styles review staggering but not surprising numbers of papers, as the reference to learning styles is constantly heard within educational contexts at all levels. Simmonds (2014) reports the view of 1200 educators from the UK, of which 76% used learning styles during lesson planning and delivery. In addition, 15% of the educators supported left/right brain distinction activities, believing that different hemispheres support specific activities. This claim has not been supported by scientific research (Simmonds, 2014). Newton and Miah (2017) sampled 114 academics from Higher Institutions in the UK. Their results showed that 64% of the academics tried accommodating learning styles during teaching. Similarly, in their investigation, Dekker et al. (2012) included 242 educators from the UK and the Netherlands. Their study indicates that over 80% of the educators believed neuro-myths related to learning styles and left/right brain dominance theories. Such findings suggest that neuro-myths concerning learning styles are widespread geographically and across different education levels.

### ***Bilingualism***

Malta has been reported to have had a positive bilingual journey, with Maltese and English recognised as official languages (Mifsud & Vella, 2018). Although various levels of Maltese/English use and exposure are evident, the linguistic environment in Malta makes it nearly impossible for a child to grow up in a monolingual environment. In middle and secondary school, the National Minimum Curriculum prioritises teaching two official languages and a third and potentially a fourth language (Sciriha, 2001). The language strategy also provides national strategies for bilingual education, which is an addition to the National Minimum Curriculum. Yet, even though a wealth of bilingual education is supported, misconceptions concerning bilingualism are still prevalent among the general public and educators (Borges & Lyddy, 2023).

A common misconception is that acquiring two or more languages early can hinder cognitive development (Borges & Lyddy, 2023; Genesee, 2009). This misconception proliferates within the field of language or learning difficulties. Parents are often encouraged to use one language when a child has language learning difficulties, which could have negative underpinnings that could be social and emotional (Guiberson, 2013). Nevertheless, research indicates that language acquisition challenges in bilingual children don't seem to place them at higher risk of impairment than monolingual learners with language difficulties (Armon-Lotem et al., 2015; Borges & Lyddy, 2023; Byers-Heinlein & Lew-Williams, 2013; Kohnert, 2010).

“Code-switching leads to confusion”: this is another strong misconception within bilingual language learning (Genesee, 2009). In reality, code-switching is a natural process in bilingualism, and it allows learners to use any linguistic resources available to them to get their message across (Byers-Heinlein & Lew-Williams, 2013). Moreover, this is a natural phenomenon within a bilingual community; learners merely copy their surroundings (Comeau et al., 2003). Within the classroom context, this concept is also known as translanguaging, where teachers and educators take linguistic tools from each language to tackle the linguistic tasks at hand (Mifsud & Vella, 2018). Throughout this study, the researcher looks at whether any of the misconceptions related to bilingualism are carried forward into the Maltese classrooms.

### ***Digital Learners***

Our classrooms are now populated with students who have been experiencing advanced technology from the first hours of their lives (Paleczek et al., 2022). This is the generation of digital learners. But does that mean that our pedagogical practices must be tailor-made to accommodate these characteristics? Does it mean that teaching has to be transformed (Goodchild & Speed, 2019)? Educators sometimes struggle with technology and its implementation within the classroom as they are unsure whether this is a necessary tool or just entertainment (Renwick, 2015). Studies show that for the assimilation of technology to be successful, teachers need access to appropriate tools, support and a positive outlook on using technology (Instefjord & Munthe, 2017). The assumption that technology is easy to use is a misconception, as educators and students must undergo a learning process, and all need adequate support (Renwick, 2015).

Although acknowledging the strength of technology in the classroom, this is not always synonymous with better learning. This assumption highly depends on how technological tools are implemented in the learning experience. For example, Kramarski and Feldman (2010) identified no correlation between better achievement in English language acquisition and an enhanced internet environment. However, the authors have identified increased motivation and engagement, which was supported by further research (Dweck, 2015; Thomas, 2016). Thiemann (2020), from an empirical analysis involving 56 countries, identified that although students found lessons less boring and were willing to engage more, they did not necessarily achieve better test scores. Increased motivation has also been associated with decreased school dropouts (Alivernini

& Lucidi, 2011); hence, the success of digital tools should not solely be correlated to better test scores.

And do students read less because of technology? Primarily, before answering the question, we must agree on what we mean by the term reading. Does this refer to reading comprehension, to reading long texts or books, or does it mean reading for extracting information? A review of literature in these regards is rather problematic, as the terminology and methodology of studies are so varied that one cohesive answer is difficult to find (Baron, 2017). Some scholars see using technology as instigating the decline of traditional literacy. However, others see it as an aid to boost reading abilities (Vázquez-Cano et al., 2020). Fuchs and Woessmann (2004) maintain that high use of technology in the home positively correlates with better academic achievement. The PISA 2009 investigation (OECD, 2011) found that students who use a higher amount of technology perform poorer in reading competence skills. Yet, an improvement in the tested reading abilities was observed in students who used digital devices moderately. Nonetheless, the notion that technology kills traditional literacy has also been challenged. Researchers have also argued that digital devices are changing how students read and providing new opportunities through varied reading platforms (Cope & Kalantzis, 1999; Esteban Vázquez, 2012; Thiemann, 2020).

In summary, it can be concluded that research does not provide a unified front when it comes to evaluating the success of the use of technology within the classroom. Although higher engagement is perceived, academic gains are not always objectively apparent.

### **Homework**

The topic of homework has been a contentious issue throughout the years. From an educator's perspective, homework can be viewed as an extension of learning and may instil responsibility. On the other hand, students see this as an imposition on their free time, taking away from their time to meet up with friends, and also as an extension of school hours. On the other hand, some students also recognise the idea of reinforcement of learning (Matei & Ciascai, 2015; Walker, 2007). Parents/carers also have their views about the topic. It is regarded as support by some, where they see that their children are extending their learning to the home environment, but as an extra chore by others who feel that students are just reworking what has been done in the classroom. But

what is the correct balance? When is homework appropriate, too much or too little? The literature is also unsure about this (Dolean & Lervag, 2022; Sayers et al., 2021).

Repetitive homework has been considered to be counterproductive. Additionally, strictly guided homework has been associated with negative emotions and reduced effort, while autonomous learning is correlated with a positive attitude towards completing homework tasks (Trautwein et al., 2009; Xu et al., 2021). Galloway et al. (2013) report increased engagement levels in the subjects with increased time spent on homework. However, this also has repercussions, as the increased time heightened the likeliness of academic stress and reduced the balance between free time and academic life (Galloway et al., 2013). An efficacy study on writing competencies in elementary school has shown that students who were given increased homework practice showed better results on writing competency; however, this was not observed in mathematical writing competency (Dolean & Lervag, 2022).

National policies across different countries have often tried to structure the idea of homework to streamline it across schools and educators. Although the concept of streamlining can in theory be beneficial, in reality it can pose several difficulties. Schools and educators are still free to implement their idea of homework. MEYR (2018) produced the National Homework Policy, which aims to provide educators with meaningful guidelines. However, even though frameworks give educators guidelines, it is up to the educators to decide the quality, quantity and types of homework to be assigned. The teachers' views on homework objectives, implementation practices and attitudes towards parental involvement are key influential factors in homework assignments (Flunger et al., 2021). Throughout this study, the researcher aims to obtain an overview of educators' beliefs about homework in order to explore if they support the educational myths about such a controversial topic.

## Research Questions

1. What is the awareness of Maltese primary school educators in relation to learning styles, bilingualism, homework and digital learning?
2. Can a difference in the level of awareness be identified according to the school setting and educators' role?
3. Do the qualifications and the current training status affect the educators' responses?

## Method

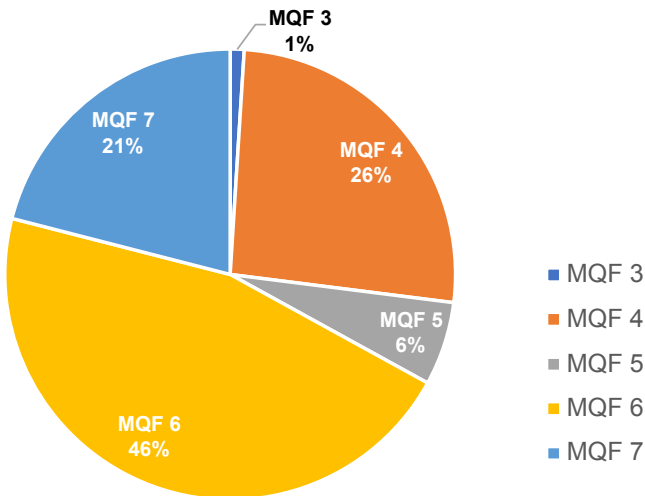
An online questionnaire was distributed to all primary schools in Malta. All primary schools were sent a circular with the details of the study, and all educators were invited to participate by answering an online questionnaire. The researcher followed the ethical protocol as stipulated by the Ethics Board at the Institute for Education.

## Participants

One hundred seventy-nine educators responded to the online questionnaire. One hundred and five educators worked in state schools, 46 in church and 28 in independent schools. Thirty-three percent of participants were receiving training at the time of data collection. Eurostat (2021) reports 2102 educators working in the primary sector in Malta; this sample is 8.5% of the total population, which gave the researcher a margin of error of 7.01% with a confidence interval of 95%. Figure 1 illustrates the type of training. The distribution of the educators within year groups and roles is represented in Figure 2.

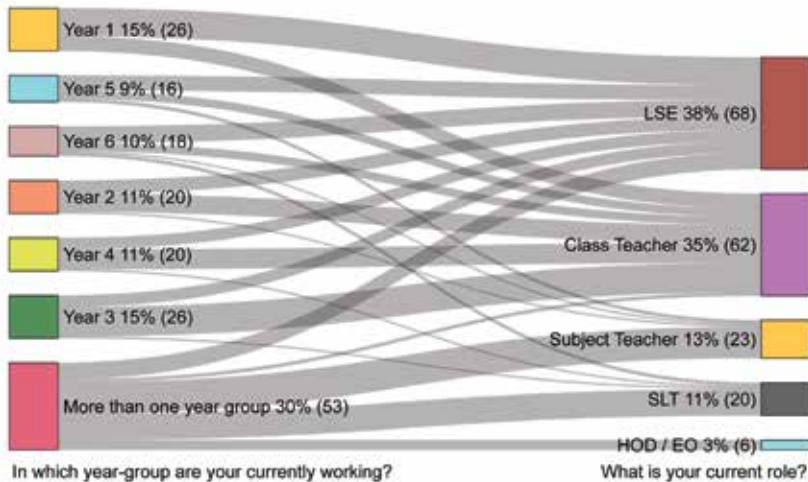
**Figure 1**

*Level of Education Distribution Amongst Participants*



**Figure 2**

*Sankey Diagram: Distribution of Participants Within Year Groups and Current Role*



### **The Assessment Tool**

The researcher adapted a questionnaire derived from the *Development and Validation of a Scale to Measure Misconceptions About Educational Psychology Among Pre-Service Teachers* (McAfee, 2018). The author granted permission for adaptation. The researcher extracted some questions from the original tool; however, due to the local bilingual situation, it was necessary to investigate myths and misconceptions concerning bilingualism. Hence these questions were introduced. The researcher presented the participants with 33 myths about learning styles, bilingualism, homework and digital learners. The participants had to report on a 7-point Likert scale their level of support for each educational myth.

Test-retest reliability was tested for the adapted tool. The Kendal Tau Test for each question indicated that all questions had a medium-high positive correlation; however, this was not always statistically significant. This was probably due to the small sample size ( $n=13$ ) for validity testing. See the Appendix for the full table of results. The questionnaire was also tested for Face Validity by seven professionals in the educational field.



### **Data Analysis**

DataTAB and Microsoft Excel were the tools used to assist with data analysis. The researcher used descriptive statistics to analyse the responses of the participants. The chi-squared test was then used to investigate differences in responses when controlling for variables; school setting, educators' training, and level of education and role of the educator. Following an individual evaluation of each group of statements, the research investigated the strength of the prevalence of the group of myths and misconceptions.

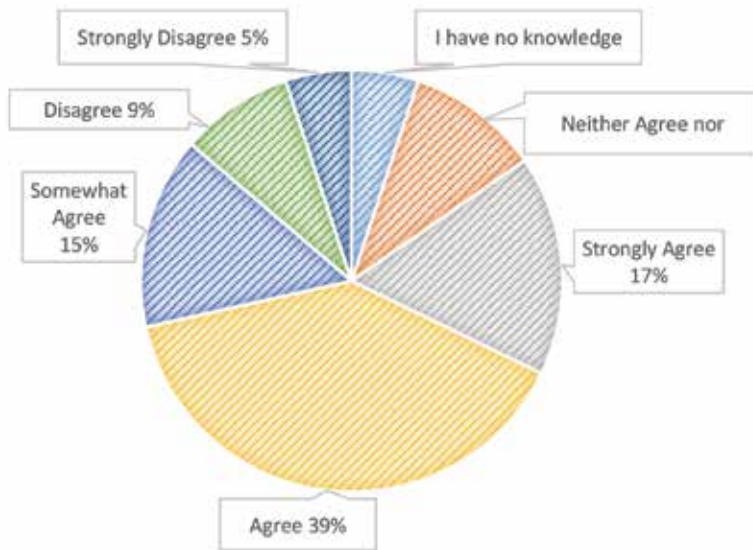
## **Results**

### **Learning Styles**

Nine statements investigated the beliefs of educators on learning styles. The responses of the participants are summarised in Table 1. Data indicated that a large proportion of participants believed in these educational myths. The analysis shows that the top 10% of responses (highlighted) on six statements were *Agree*. The top 10% refers to the subset of data that falls above the 90th percentile of the distribution. Furthermore, Figure 3 clearly illustrates that the cumulative percentage responses of participants that the largest proportion of answers was *Agree* (39%), *Strongly Agree* (17%) and *Somewhat Agree* (15%) on statements depicting learning styles myths. The only exception was the statement: *Boys are naturally better at Mathematics than girls* (refer to Table 1).

**Figure 3**

*Pie Chart of Responses on Learning Styles Statements*



A chi-squared test was used to investigate whether different responses were achieved in different groups subdivided by the role of the educators, the sector, the level of education and whether they received training at the time. Results indicate that responses were uniform across groups and no differences could be identified on all questions (refer to Table 1).

**Table 1**

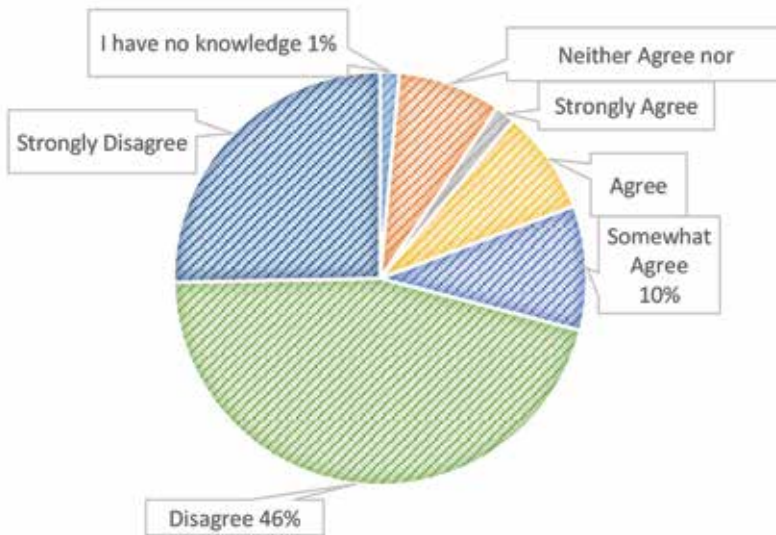
*Responses on Educational Myths Related to Learning Styles*

Statement	Percentage Responses					Chi² Test					
	I have no knowledge	Neither Agree nor Disagree	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree	Role	Sector	Level of Education	Training
Academic achievement is improved when instruction is customised for left- and right-brained learners.	33%	19.60%	8.90%	24%	8.40%	3.40%	2.20%	p = .711 V = .2	p = .156 V = .2	p = .954 V = .14	p = .928 V = .1
The student who is aware of their intelligence style knows the best way for them to learn.	1.68%	12.29%	16.20%	42.46%	19.55%	6.15%	1.12%	p = .444 V = .2	p = .141 V = .22	p = .962 V = .1	p = .482 V = .18
A visual learner will learn better through visual content.	0.56%	5.03%	34.08%	48.04%	8.38%	1.68%	2.23%	p = .096 V = .2	p = .832 V = .2	p = .832 V = .2	p = .805 V = .13
Boys are naturally better at Mathematics than girls.	3.35%	13.41%	1.68%	2.23%	5.59%	39.66%	34.08%	p = .995 V = .1	p = .206 V = .21	p = .549 V = .18	p = .244 V = .21
Effective teaching requires the alignment of instruction to students' learning styles.	1.12%	7.26%	24.02%	47.49%	17.32%	1.12%	0%	p = .267 V = .18	p = .13 V = .25	p = .325 V = .18	p = .279 V = .19
Differentiated instruction tailored to a student's intelligence type is useful in enhancing student achievement.	1.12%	5.03%	25.70%	50.84%	13.41%	1.68%	1.68%	p = .279 V = .2	p = .157 V = .22	p = .113 V = .21	p = .329 V = .2
Some students have true photographic memories.	2.20%	3.40%	16.80%	62.60%	12.80%	1.10%	0%	p = .018* V = .22	p = .42 V = .17	p = .002* V = .2	p = .831 V = .11
Students with the best memory get the highest grades.	2.23%	15.64%	6.70%	22.35%	30.17%	17.88%	3.91%	p = .61 V = .17	p = .336 V = .2	p = .468 V = .18	p = .463 V = .18
Instructional materials should be designed based on a student's learning style.	0.56%	9.50%	16.76%	50.84%	16.20%	5.03%	0%	p = .224 V = .19	p = .062 V = .22	p = .68 V = .15	p = .958 V = .08

Note: V = Cramér's V; \*post-hoc testing did not confirm the significant difference. Independent Variable – Statement, Dependent Variables – Role, Sector, Level of Education, Training. Highlighted responses indicate the top 10% of responses, which refers to the subset of data that falls above the 90th percentile of the distribution.

**Figure 4**

*Pie Chart of Responses on Bilingualism Statements*



### ***Bilingualism***

Six questions investigated the beliefs of educators on bilingualism. The responses of the participants are summarised in Table 2. Data indicate that many participants do not believe in educational myths related to bilingualism. The analysis shows that the top 10% of responses (highlighted in Table 2) on six statements were *Disagree*. The 10% responses refer to the subset of responses that belong to the highest performing category of all collected responses. The only statement that received a higher response on *Agree* was: *Parents must be fluent in a language to raise a child who is fluent in that language* (21.23%). However, this was still considered a small percentage. The cumulative percentages in Figure 4 indicate that the largest responses in these sections included *Disagree* (46%) and *Strongly Disagree* (25%).

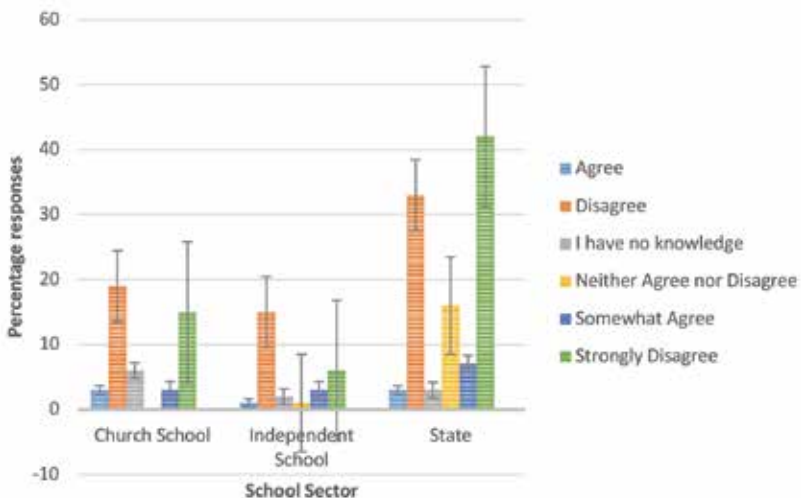
A chi-squared test was used to investigate whether different responses were achieved in different groups subdivided by the role of the educators, the sector, the level of education and whether they received training at the time. Results

indicate that the sector influenced the responses on two statements: *Parents must be fluent in a language to raise a child who is fluent in that language* and *Exposing infants and toddlers to more than one language may cause delays in their speech and language development*.

Further testing on the statement *Parents must be fluent in a language to raise a child who is fluent in that language* through a Kruskal-Wallis test showed that there is no significant difference between the categories of the independent variable for the dependent variable ( $p=.62$ ). However, further testing on the statement *Exposing infants and toddlers to more than one language may cause delays in their speech and language development* showed that there is a significant difference between the categories of the independent variable for the dependent variable ( $p=.001$ ). This revealed that the pairwise group comparisons of State – Church and State – Independent have an adjusted  $p$ -value of less than .05. Figure 5 indicates that responses from church schools were significantly different, and these participants disagreed more with this assertion.

**Figure 5**

*Exposing Infants and Toddlers to More Than One Language May Cause Delays in Their Speech and Language Development: Analysis by Sector*



**Table 2**

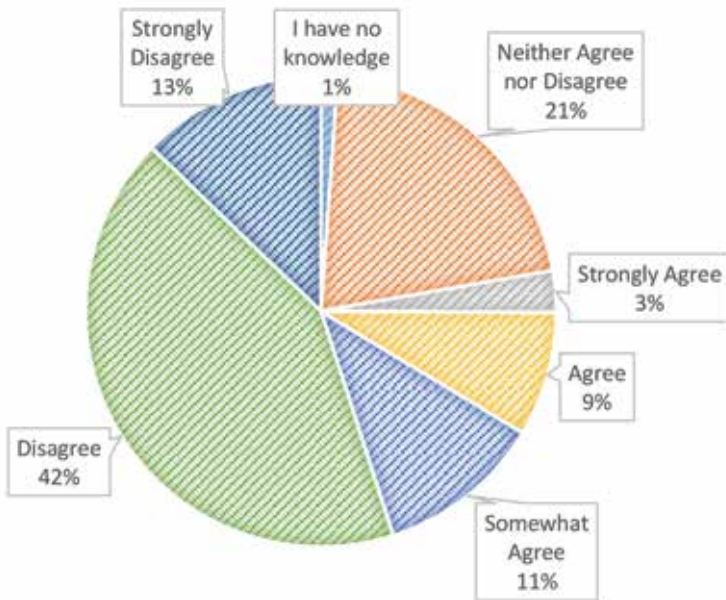
*Responses on Educational Myths Related to Bilingualism*

Statement	Percentage Responses						CHI Test				
	Neither Agree nor Disagree	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree	Neither Agree nor Disagree	Role	Sector	Level of Education	Training
If children do not learn a second language when they are very young, they will never be fluent in that language.	8.38%	1.68%	9.50%	12.85%	48.60%	17.32%	8.38%	p = .903 V = .15	p = .138 V = .18	p = .619 V = .29	p = .155 V = .23
Students with language and learning difficulties should only be exposed to one language.	8.38%	1.68%	9.50%	12.85%	48.60%	17.32%	8.38%	p = .903 V = .15	p = .515 V = .18	p = .619 V = .29	p = .155, V = .23
Parents must be fluent in a language to raise a child who is fluent in that language.	10.06%	5.03%	21.23%	17.88%	34.08%	11.73%	10.06%	p = .284 V = .18	p = .039 V = .23	p = .934 V = .13	p = .15 V = .28
If a child is exposed to two languages, he cannot develop a strong identity.	2.79%	0.56%	0.56%	1.68%	48.04%	45.81%	2.79%	p = .904 V = .15	p = .753 V = .15	p = .05 V = .35	p = .316 V = .2
Children must be very smart to grow up bilingual.	8.94%	0.56%	3.91%	5.59%	55.31%	23.46%	8.94%	p = .822 V = .16	p = .518 V = .18	p = .09 V = .22	p = .346 V = .19
Exposing infants and toddlers to more than one language may cause delays in their speech and language development.	9.50%	0%	3.91%	7.26%	37.43%	35.20%	9.50%	p = .719 V = .15	p = .018 V = .25	p = .207 V = .19	p = .15 V = .21

Note: Independent Variable – Statement, Dependent Variables – Role, Sector, Level of Education, Training. Highlighted responses indicate the top 10% of responses, which refers to the subset of data that falls above the 90th percentile of the distribution.

**Figure 6**

*Pie Chart of Responses on Digital Learners Statements*



**Digital Learners**

Seven statements investigated the beliefs of educators on digital learners. The responses of the participants are summarised in Table 3. Data indicate that many participants do not believe in these educational myths. The analysis suggests that the top 10% of responses (highlighted in Table 3) on four statements were *Disagree*. However, it can also be observed that a large proportion of respondents (21%) had a neutral position on the topic (Refer to Figure 6).

A chi-squared test was used to investigate whether different responses were achieved in different groups subdivided by the role of the educators, the sector, the level of education and whether they received training at the time. Results indicate that the sector influenced the responses on 2 statements.

**Table 3**  
Responses on Educational Myths Related to Digital Learners

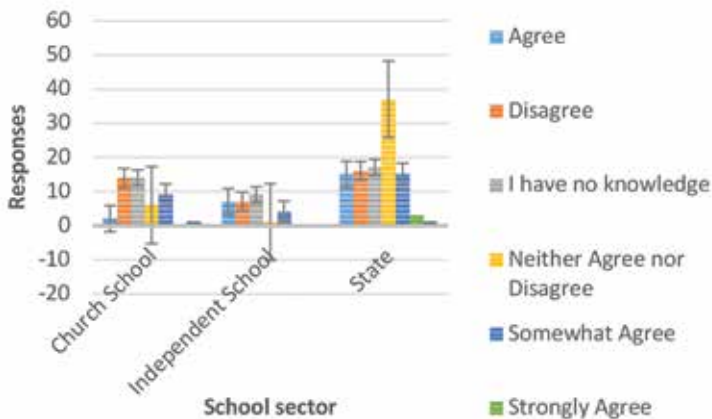
Statement	Percentage Responses					Chi² Test					
	I have no knowledge	Neither Agree nor Disagree	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree	Role	Sector	Level of Education	Training
Video games are not conducive to learning.	1.12%	20.67%	2.79%	8.38%	11.17%	41.34%	12.53%	p = .445 V = .18	p = .481 V = .18	p = .042 V = .22	p = .529 V = .17
Technology prevents children from having healthy social-emotional lives.	0%	15.67%	5.03%	12.85%	28.49%	32.40%	5.59%	p = .12 V = .2	p = .145 V = .2	p = .282 V = .18	p = .971 V = .07
The digital natives need a different type of education.	22.35%	24.58%	1.68%	13.41%	15.64%	20.67%	1.12%	p = .704 V = .17	p = .003 V = .29	p = .701 V = .17	p = .752 V = .14
The internet makes us dumber.	0%	13.41%	0%	2.23%	7.26%	44.69%	31.84%	p = .826 V = .12	p = .071 V = .2	p = .227 V = .18	p = .058 V = .28
An internet search can replace a lesson.	0.56%	16.67%	1.12%	7.26%	13.41%	37.99%	22.35%	p = .057 V = .23	p = .784 V = .15	p = .441 V = .19	p = .44 V = .18
Young people do not read anymore.	1.68%	13.97%	1.68%	12.85%	29.05%	31.84%	8.38%	p = .215 V = .2	p = .601 V = .17	p = .109 V = .21	p = .509 V = .17
Students are motivated by technology so they must learn better when they use it.	1.12%	20.67%	5.03%	30.73%	29.05%	11.17%	1.68%	p = .128 V = .21	p = .364 V = .19	p = .166 V = .2	p = .843 V = .12

Note: Independent Variable – Statement, Dependent Variables – Role, Sector, Level of Education, Training. Highlighted responses indicate the top 10% of responses, which refers to the subset of data that falls above the 90th percentile of the distribution.



**Figure 7**

*The Digital Natives Need a Different Type of Education: Analysis by Sector*



Further testing on the statement *Video games are not conducive to learning* indicated a significant difference between the Level of Education and the dependent variable  $p=.042$ . However, post-hoc testing showed no pairwise group comparison was significant in the Dunn-Bonferroni test. Further testing on the statement *The digital natives need a different type of education* indicated a significant difference between the sector and the dependent variable  $p<.001$ . Post-hoc testing showed a significant difference in the pairwise group comparisons of State – Church and State – Independent have an adjusted  $p$ -value less than .05. Thus, it can be assumed that these groups are significantly different in pairs. Figure 7 indicates that educators in state schools are unsure about the assertion *The digital natives need a different type of education*, and this response was significantly different from the responses of other sectors.

### **Homework**

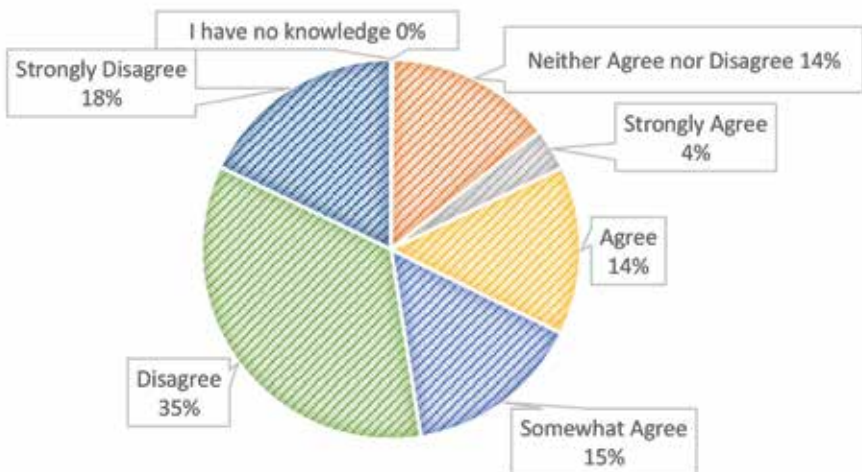
Seven statements investigated the beliefs of educators on homework. The responses of the participants are summarised in Table 4 below. Data indicate that many participants do not believe in these educational myths. The analysis shows that the top 10% of responses (highlighted in Table 4) on five statements were *Disagree*. However, it can also be observed that on two statements,

*Homework enhances learning* and *Homework is essential for the learning process*, the top 10% responded Agree. None of the participants answered that they did not have enough knowledge about this topic. The cumulative percentage presented in Figure 8 illustrates that most participants refute learning myths related to homework.

A chi-squared test was used to investigate whether different responses were achieved in different groups subdivided by the role of the educators, the sector, the level of education and whether they received training at the time. Results indicate that the sector influenced the responses on four statements: *Homework enhances learning*, *Students who earn the highest grades have learned the most*, *Homework can be assigned to new topics without prior introduction to the topic*, and *Homework is essential for the learning process*. However, on further investigation, post-hoc testing identified the difference in groups on only two statements.

**Figure 8**

*Pie Chart of Responses on Homework Statements*

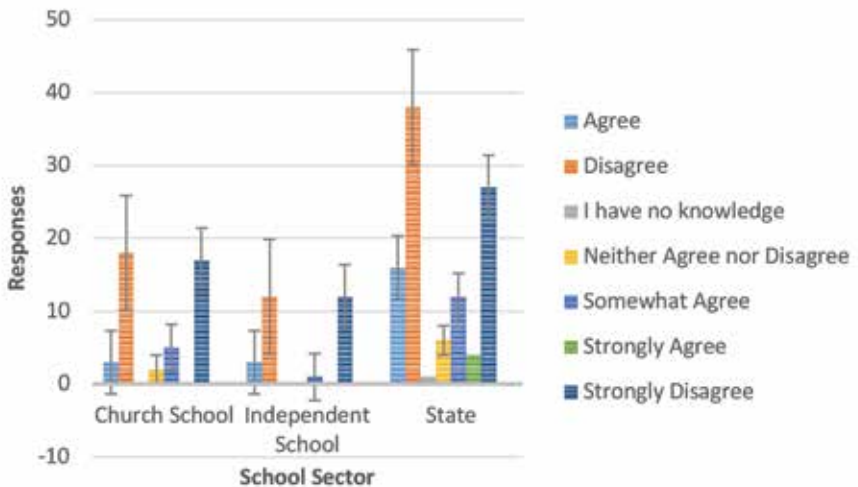


Further testing on the statement *Homework can be assigned to new topics without prior introduction to the topic* indicated a significant difference between the sector and the dependent variable,  $p=.004$ . Figure 9 indicates that educators within state schools disagree the most, which was statistically significant compared to other sectors.

Post-hoc testing on the statement *Homework is essential for the learning process* indicated a significant difference between the sector and the dependent variable,  $p=.038$ . Results showed that educators in state schools differed in their response compared to other sectors. Figure 10 demonstrates that educators in state schools were unsure about their response as they responded more *Neither Agree nor Disagree*.

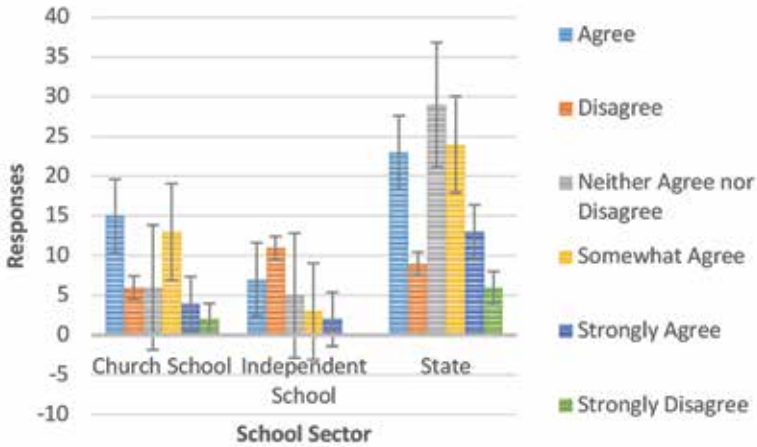
**Figure 9**

*Homework can be Assigned to new Topics Without Prior Introduction to the Topic: Analysis by Sector*



**Figure 10**

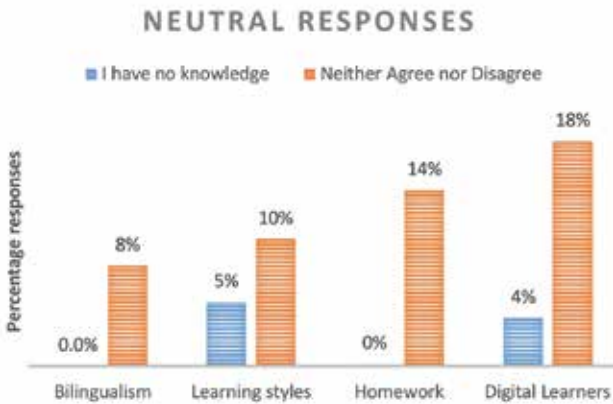
*Homework is Essential for the Learning Process: Analysis by Sector*



An analysis was computed in order to investigate which group of educational myths were considered the strongest, weakest or received the most neutral responses. Figure 11 illustrates the percentage of neutral responses received in all four categories. Figure 12 illustrates the percentage of responses that indicate the endorsement of myths, while Figure 11 illustrates the percentage of responses refuting myths. Results will be evaluated in the following section.

**Figure 11**

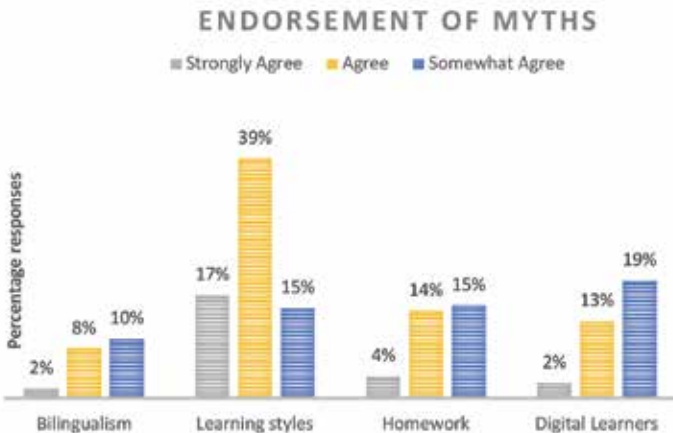
*Percentage of Neutral Response Results*



Note: Neutral responses refer to answers that indicate neither agreement nor disagreement and are positioned in the middle of a response scale

**Figure 12**

*Percentage of Positive Response Results*



Note: Positive responses refer to answers that indicate agreement or affirmation to the presented statements

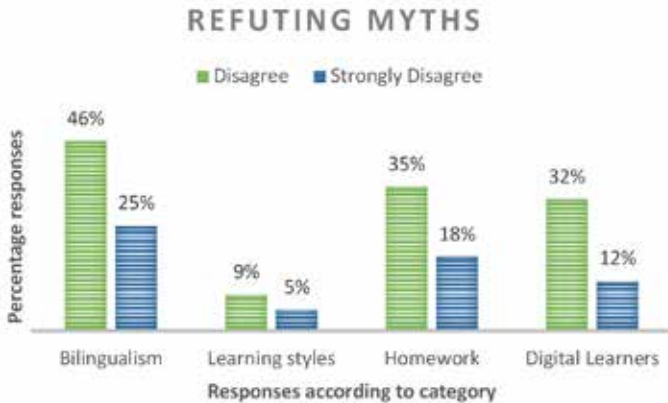
**Table 4**  
Responses on Educational Myths Related to Homework

Statement	Percentage Responses					Chi Test					
	I have no knowledge	Neither Agree nor Disagree	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree	Role	Sector	Level of Education	Training
Homework enhances learning.	0%	13.41%	8.38%	35.20%	30.17%	10.61%	2.23%	p = .186 V = .19	p = .036 V = .23	p = .945 V = .13	p = .158 V = .21
Students who earn the highest grades have learned the most.	0%	10.06%	0.56%	4.47%	10.61%	50.28%	24.02%	p = .829 V = .14	p = .12 V = .21	p = .018 V = .22	p = .32 V = .18
If students do not do Homework, they will forget what they covered during the lesson.	0%	17.32%	3.35%	9.50%	18.09%	39.66%	10.61%	p = .077 V = .2	p = .123 V = .21	p = .439 V = .16	p = .246 V = .18
Homework can be assigned to new topics without prior introduction to the topic.	0.56%	4.47%	2.23%	12.29%	10.06%	37.99%	31.28%	p = <.001 V = .3	p = .483 V = .18	p = .126 V = .21	p = .402 V = .19
Longer time spent on Homework leads to higher academic gains.	0%	9.50%	0%	3.91%	3.35%	50.28%	31.84%	p = .259 V = .16	p = .217 V = .17	p = .477 V = .17	p = .973 V = .05
Homework is essential for the learning process	0%	22.35%	10.61%	25.14%	22.35%	14.53%	4.47%	p = .256 V = .18	p = .008 V = .26	p = .479 V = .17	p = .332 V = .18
Grading a Homework with a mark leads to better academic performance.	0.56%	21.23%	0%	9.50%	10.06%	37.99%	19.55%	p = .055 V = .21	p = .217 V = .19	p = .081 V = .2	p = .121 V = .2

Note: Independent Variable – Statement, Dependent Variables – Role, Sector, Level of Education, Training. Highlighted responses indicate the top 10% of responses, which refers to the subset of data that falls above the 90th percentile of the distribution.

**Figure 13**

*Percentage of Negative Response Results*



Note: Negative responses refer to answers that indicate disagreement or rejection of the presented statements.

## Discussion

This investigation aimed to establish the awareness and perceptions of Maltese primary school educators concerning four distinct areas: bilingualism, learning styles, homework and digital learners. The study sought to evaluate whether educators endorsed or refuted educational myths concerning the topic and whether distinct differences between cohorts could be identified.

Results revealed that the strongest myths resulted in the area of learning styles. This finding agrees with international literature (de Bruyckere et al., 2015; Kirschner, 2017; Newton & Miah, 2017; Furey, 2020). The analysis indicated that the top 10% of responses on six statements were *Agree* (refer to Figure 3). The endorsement towards learning styles myths was observed across all cohorts, thus emphasising that these educational myths are widespread across all educators. Such a finding is considered rather worrying, as this shows the stubbornness of the myth and, consequently, the impact these could have on educational practices. Higher Education institutions should implement information campaigns and better divulge academic truths to reach all teaching sectors. Widespread continuous professional development in the area is also called for to mitigate the spread of these misconceptions.

Participants also showed a strong trend of agreeing with two educational myths in the area of homework. On the statements *Homework enhances learning* and *Homework is essential for the learning process*, the top 10% responded Agree. This shows that educators strongly agree with the correlation between homework and learning. The problem lies in the fact that literature is still unsure of such an assumption. From the areas presented in the study, the topic of homework is still being received with uncertainty among scholars (Dolean & Lervag, 2022; Sayers et al., 2021). This is because the literature available is sporadic in terms of methodology and context. Although the uncertainty in the literature is evident, a very small proportion of participants mentioned that they did not know the topic (0.3%). Such a finding leads the author to question whether educators keep abreast of current academic findings.

On the other hand, it is encouraging to observe that most educators from this study refuted myths about bilingualism. Over 70% of educators refuted bilingual myths (see Figure 4). Such results indicate that most educators endorse the language strategies forwarded by the national curriculum. Promoting bilingualism within the classroom is important, as educators are helping their students maximise cognitive abilities. Bilingualism is often associated with enhanced critical thinking (Albert et al., 2002), increased attentional control (Adesope et al., 2010), and increased problem-solving (Byers-Heinlein & Lew-Williams, 2013).

Moreover, it has been identified that bilingual learners outperform monolingual learners on different academic levels due to the heightened level of metalinguistic skills (Adesope et al., 2010). Such positive attitudes towards bilingualism also equip students to communicate effectively within a strong bilingual community like Malta. Most educators agree that all children should be encouraged to become bilingual, regardless of their learning abilities. Such a belief is encouraging to observe, as the opposite has often been observed in the literature (Armon-Lotem et al., 2015; Guiberson, 2013). Results from this study do not show unanimity in refuting all bilingual myths. Hence, ongoing training to support the positive trend must be reinforced to equip educators with evidence-based practical knowledge for them to carry over into the classroom.

Educators have an important role in identifying methods which support learning; it is, therefore, essential for educators to understand how technology affects learning in the classroom and the learners themselves. The fact that



educators refuted most educational myths related to digital learning shows that these educators moved away from the assumption that technology is inherently engaging to students. Educators also understand that student engagement can occur in different modalities, and this should not be single-channelled solely towards technology, even though technology is an integral part of the students' lives. However, results from this study also highlight two important findings. Many participants acknowledged their lack of knowledge about the myths in this area: this area carries the largest number of neutral responses (refer to Figure 11). This calls for further professional development for teachers in the area to keep abreast with the most effective ways to integrate technology following evidence-based research (Instefjord & Munthe, 2017) while providing continuous support in this fast-paced pedagogical approach (Renwick, 2015).

In this study, it could be identified that the role and level of educators' training did not impinge on any of the responses. On the other hand, the sector in which the educators work did influence some of the responses. Educators from state schools differed in their responses compared to those in church or independent schools; however, this was only identified in four myths. Such results call for continuous professional development across all sectors, as the level of awareness across sectors is homogenous.

### **Limitations of the Study**

The quantitative nature of the questionnaire did not allow the researcher to delve deeper into the educators' understanding of specific educational myths. This calls for further research in the area. In addition, the researcher acknowledges that not all educational misconceptions were investigated. This can benefit from further research concerning additional educational myths and misconceptions. Finally, a larger sample would have been ideal for a more representative sample of the total population.

### **Conclusion and Recommendations**

This study has identified that while some myths and misconceptions are not as strong within our local population of primary school educators, others, such as the notion of learning styles and the use of homework, are more ingrained. This calls for stakeholders to support educators further and help them keep up to date with the latest evidence-based practices. Continuous professional development at different levels is key to ensuring that educators

are continuously provided with evidence-based research to support their pedagogical choices within the classroom. Such practices will ultimately enhance student success, promote the effective use of educational resources and enhance equity amongst learners.

## Note on Additional Resources

The author offers visual explanations and expert insights into the topic to complement the findings and discussions presented in this research. These videos serve as a valuable supplement, further elucidating the concepts and arguments made within this paper and can serve as a tool for further professional development.

The video resources can be accessed at the following links:

- Learning Styles: <https://youtu.be/y0cFRnS9WIM>
- Bilingualism: [https://youtu.be/5n\\_43SJLk58](https://youtu.be/5n_43SJLk58)
- Digital Learners: <https://youtu.be/fzQ5RJE3ILY>
- Homework: <https://youtu.be/nV74y6HOMtA>

## Notes on Contributor

**Loredana Muscat** is a lecturer at the Institute for Education, Malta. She received her Doctorate degree in Communication Therapy from the University of Malta and holds a Master's degree in Education in Learning Difficulties and Disabilities from the University of Birmingham. Her research interests include diversity in education and inclusion practices concerning individuals with learning difficulties and disabilities.

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## Appendix

**Table C1**

*Test-Retest Validity*

<b>Statement</b>	<b>Kendal Tau Calculation</b>
1	$r(11) = 0.46, p = .919$
2	$r(10) = 0.41, p = .571$
3	$r(11) = 0.62, p = .604$
4	$r(11) = 0.37, p = .725$
5	$r(11) = 0.32, p = .311.$
6	$r(11) = -0.16, p = .875$
7	$r(11) = 0.58, p = .279$
8	$r(11) = 0.53, p = .577$
9	$r(11) = 0.32, p = .392$
10	$r(11) = 0.49, p = .71$
11	$r(11) = 0.74, p = .054$
12	$r(11) = 0.68, p = .063$
13	$r(11) = 0.34, p = .494$
14	$r(11) = 0.68, p = .582$
15	$r(11) = 0.86, p = .002$
16	$r(11) = 0.53, p = .538$
17	$r(11) = 0.84, p = .571$
18	$r(11) = 0.54, p = .056$
19	$r(11) = 0.74, p = .493$
20	$r(11) = 0.42, p = .033$
21	$r(11) = 0.81, p = .32$
22	$r(11) = 0.65, p = .124$
23	$r(11) = 0.47, p = .342$
24	$r(11) = 0.89, p = .02$
25	$r(11) = 0.41, p = .542$
26	$r(11) = 0.57, p = .22$
27	$r(11) = 0.31, p = .54$
28	$r(11) = 0.70, p = .63$
29	$r(11) = 0.57, p = .23$
30	$r(11) = 0.64, p = .144$
31	$r(11) = 0.39, p = .243$
32	$r(11) = 0.57, p = .033$
33	$r(11) = 0.79, p = .078$