Are University Faculty to Blame for the Prevalence of Educational Myths? A Cross-Sectional Study of Trainee Teachers

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This mixed-methods study examined the beliefs, and their origins, of trainee teachers regarding a number of myths and misconceptions about teaching and learning. Using a cross-sectional experimental design, survey data were collected from 65 pre-service teachers enrolled in a high-profile Bachelor of Education program. 18 participants then took part in semi-structured interviews. The results indicate that trainee teachers' beliefs in educational myths and misconceptions may not change over the course of a five-year evidence based teacher preparation program. Further, the qualitative results suggest that beliefs in learning myths might become further entrenched over the course of study as a result of being actively promoted by faculty throughout the program.

Few would contest that teacher training programs should promote evidence-based teaching and learning practices. However, a number of recent studies, across a wide range of educational contexts, have provided firm evidence that educators often possess poor educational literacy regarding effective teaching and learning practices (e.g., Dekker et al., 2012; Howard-Jones, 2014; Husmann & O'Loughlin, 2019). As such, it is important to take a step back and examine the degree that teacher education programs are successful in their mission in promoting practices that align with the science of learning. This manuscript reports on a mixed-methods study that investigates the degree that trainee teachers' beliefs in educational myths change over the course of a five-year "evidence-based" teacher training program. In the following sections, we first briefly review previous similar research that has investigated the prevalence and origins of belief in educational myths among in-service and pre-service teachers, before discussing the context, methodology, the findings, and their implications of the present study.

Background

Commonly held beliefs about teaching and learning that do not find empirical support in the experimental literature are often referred to as "educational myths", "edu-myths", or "neuro-myths" (de Bruyckere, Kirschner & Hulshof 2015; McAfee, 2018). Such misconceptions have been conceptualized to be fallacious knowledge that needs to be "unlearned" (McAfee, 2018, p. 8) and include, for instance, "the Mozart effect", i.e., that playing classical music to children will increase their intelligence, brain hemispheric effects on teaching and learning (i.e., right-versus left– brained learners), and Visual-Auditory-Kinesthetic (VAK) learning styles (Husmann & O'Loughlin, 2019; Kirschner, 2017; Pashler, McDaniel, Rohrer, & Bjork, 2008; see Table 1). Belief in such myths is myriad and widespread, despite the fact that

their empirical basis is commonly discussed in educational course books (Im, Cho, Dubinsky, & Varma, 2018) as well as covered in a number of publications aimed toward the general public (e.g., de Bruyckere et al., 2015). The widespread belief in such myths is of particular concern in the field of education and the learning sciences, where belief in such myths by teachers and/or learners may manifest in teaching/learning practices that are, at best, ineffective and, at worst, potentially detrimental to learning (Pashler et al., 2008).

In order to assess the degree that such myths may influence pedagogical practice, a number of recent studies have set out to examine the prevalence of belief in these myths among in-service, i.e., practicing, teachers (e.g., Dekker et al., 2012; Gleichgerrcht, Lira Luttges, Salvarezza, & Campos, 2015; Howard-Jones, 2014; Sarrasin, Riopel, & Masson, 2019; Tardif, Doudin, & Meylan, 2015; Zhang et al. 2019). The results of these studies have firmly demonstrated that teachers, across a wide range of educational contexts and backgrounds, generally show high levels of endorsement of learning myths, such as learning styles, to be true. Also of concern is that some studies have delved deeper and found that the surveyed teachers also reported that they frequently draw upon these myths in principle as part of their instructional practice (Dekker et al., 2012). Studies that have also investigated the origins of the belief in these myths have indicated that the participants indicated several sources, including the popular media and, worryingly, formal teacher training teacher training and other professional training events, such as conferences, as being the source of their belief in these myths (Sarrasin et al., 2019).

It is worth pausing here to reflect on the importance of teacher beliefs regarding neuromyths. First, it is generally accepted in the literature that teachers' beliefs in effective teaching and learning practices influence their actual teaching behaviors (Brown, 2009). At best, pedagogical practices based on

"neuromyths" have no convincing empirical support that "accommodating them makes any difference in learning outcomes" (Lethaby & Mayne, 2020). However, pedagogical practice based on such myths is not harmless; a review (Pashler et al., 2008) and a meta-analysis (Rogowsky, Calhoun, & Tallal, 2015) have both suggested that pedagogical practices based on learning styles may be detrimental to learning. Further, given the limited amount of time available in the classroom, any emphasis on learning styles, or any other educational myth, can divert resources away from educational interventions that have been shown to have a positive effect on learning, such as retrieval practice (e.g., Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013) or distributing instruction (Rogers, 2015; Rogers, 2017; Rogers & Cheung, 2021).

The results of the survey studies cited above indicated that the prevalence of belief in neuromyths among teachers might be at least partially attributed to teacher education programs. The simplest solution then would appear to comb through and remove references to learning myths from curricula. However, there are reasons to believe that such reform would neither be straightforward to carry out, nor effective. For instance, some research (e.g., Kim & Sankey, 2016; Dündar & Gündüz, 2016) have found that belief in educational myths is prevalent among first year trainee teachers, indicating that students enter into their teacher training with belief in these myths already firmly in place. This indicates that reform via restructured curricula may be required to combat the perpetuation of these myths (Kim & Sankey, 2016). Studies examining how beliefs might change over the course of a semester have found that belief in educational myths do not change as a result of taking a course in educational psychology (Im et al., 2018). This suggests that a) longer interventions may be necessary and b) that the promotion of evidence-based teaching and learning practices may not be sufficient to root out erroneous beliefs in educational myths. Beyond curricular reform, a final concern lies in who will deliver the curriculum. A recent survey-based study investigating the prevalence of belief in learning myths found high levels of endorsement among current teachers, teacher trainees, and, most worryingly, among university faculty involved in teacher education. Such a finding, in the authors' words, suggests that teacher preparation programs may lack "the qualified faculty needed to teach such courses" (van Dijk & Lane, 2018, p. 11).

If teacher training programs are to promote evidence-based teaching and learning, it is important to establish a baseline of the beliefs and understanding of trainee teachers upon first entering a teacher training program. Further information can then be gathered as to how their beliefs change over the course of study, and what factors influence any changes in their beliefs. Using both survey and interview data, this manuscript reports on a study that set out to examine whether beliefs in educational myths might change over the course of a five-year Bachelor of Education program, and the reported factors that influence these changes.

This study offers a number of methodological improvements over previous research. First, previous studies have typically relied on survey data as the sole data collection instrument. The present research offers a methodological improvement by adopting a mixed-methods approach in utilizing both survey data as well as qualitative data via semi-structured interviews. In addition, previous longitudinal research has examined how beliefs might change because of coursework over a brief period of time (i.e., a single semester, Im et al., 2019). The present study sets out to examine the degree that beliefs change over the course of five years of teacher education coursework.

Current Study

Context

This cross-sectional study was carried out with 65 undergraduate students who were enrolled in a five-year Bachelor of Education (B.Ed.) program in language education at a university in Asia. This university, which promotes "an evidence-based approach" to teaching and learning through its educational programs, is consistently ranked among the top 10 universities in the world in the field of education[1]. The participants for the study comprised two intact cohorts: Year 1 students (Y1, $n = 37$) who were enrolled in their first semester of study, and Year 5 students (Y5, $n = 28$) enrolled in their final year of study in the same program. This B.Ed. program includes coursework, a study-abroad component in which students examine the teaching and learning practices within a different educational context, and a teaching practicum in which students are placed in a local school for a semester. As part of this practicum, student teachers teach courses and engage in other school-based duties and responsibilities all under the supervision of an experienced in-service teacher. The student teachers are also required to complete a number of assessed observations and develop a portfolio, both of which are assessed by university faculty supervisors. The students receive professional licensure upon completion of the program, giving them qualified teacher status to work within primary/secondary schools in the local context. [2]

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[1] As per QS rankings

[2] The data from one student in the Y5 cohort were excluded from analyses as a result of providing the same answer to all survey items. This resulted in a final participant pool of 27 participants in the Y5 cohort.

Table 1
Myths and descriptive results from Year 1 and Year 5 students.

Myth	Year 1 (n = 37)			Year 5 (n = 27)		
	M	*SD*	*Mdn*	*M*	*Sd*	*Mdn*
Student academic achievement is improved when teachers give students control over how they complete tasks.	4.11	.091	4	4.30	0.82	4
Some students have true photographic memories.	4.54	.80	4	4.56	0.93	5
Generally, students use only 10% of their brain.	3.24	1.26	3	3.41	1.12	3
Effective teaching requires the alignment of instruction to students' learning styles.	4.78	.79	5	4.89	.85	5
Good teaching requires aligning instruction to the multiple intelligences of students.	4.49	0.69	4	4.74	0.76	5
A good way for teachers to promote academic achievement is through the use of material rewards (e.g., a treasure box, treats, etc.) .	4.27	1.05	4	4.22	0.97	4
Student motivation is influenced by their genetics.	3.49	1.12	4	3.22	1.25	3
Differentiated instruction tailored to a student's intelligence type enhances student academic achievement.	4.76	0.64	5	4.78	0.75	5
Teachers should offer unsolicited help to students who appear to be struggling.	4.67	0.88	5	4.74	0.66	5
Playing classical music to infants increases their intelligence.	4.16	0.96	4	4.00	1.00	4
Students will be more motivated to complete an easy task than one they perceive to be more difficult.	4.30	0.88	4	4.33	1.11	5
Academic achievement increases when teachers present material in the student's preferred learning style.	4.78	0.67	5	4.89	0.75	5
Academic achievement is enhanced when teachers address the multiple intelligences, such as naturalistic, musical, spatial, and intrapersonal intelligences.	4.57	0.80	5	4.57	0.80	5
Academic achievement is improved when instruction is customized for left- and right-brained learners.	4.49	0.77	4	4.41	0.80	4
Students preoccupied with grades have inferior learning outcomes.	3.81	1.20	4	3.82	1.15	4

Note: See McAfee (2018) for discussion of factual basis (or lack thereof) for each of these statements

The Study

Cross-sectional data were collected from Year 1 (Y1) participants during their first semester of study, and from Year 5 (Y5) in the middle of their final year of study, following their completion of the teaching practicum requirement of the program. Informed consent was gathered from all participants at the outset of the study with the participants being informed that they were taking part in a research project investigating their beliefs about teaching and learning. Participants were first surveyed as to the degree to which they agreed with 15 statements about teaching and learning using a six-point Likert-scale ranging from 1 (strongly disagree) to 6 (strongly agree). These statements (Table 1) were taken verbatim from a questionnaire developed in a validation study with in-service teachers by McAfee (2018), where the nature, with empirical evidence, of each of these statements as "myths" is discussed in detail. The statements cover a range of learning myths, including learning styles, multiple intelligences, the Mozart effect, hemispheric

dominance, etc. Following the questionnaires, 18 students (nine from Y1; nine from Y5) were selected among volunteers to take part in semi-structured interviews designed to probe more deeply in the degree that students believed in a number of learning myths, as well as the origins of these beliefs (interview questions can be found in Appendix).

Analyses

The survey overall produced an acceptable level of internal reliability (Cronbach's alpha = .80). As survey data are categorical, non-parametric statistical procedures, specifically Mann-Whitney U-tests, were carried out across the survey items to compare the answers of Y1 and Y5 students. As this study was exploratory, the alpha level for these tests was set at .05. Effect sizes were calculated in Pearson's correlation coefficient r and interpreted following Cohen's (1988) guidelines of $r = .1$ as small, $r = .3$ as medium, and $r = .5$ as large sized effects.

The transcribed interviews were independently coded by two members of the research team independent using a grounded theory approach, i.e., avoidance of imposing existing ideas on the data, to uncover other interactional features that might occur in the data (Corbin & Strauss, 2008). The researchers then met and discussed their findings until consensus was reached on the patterns and themes that emerged from the data.

Table 2
Results of Mann-Whitney U tests comparing survey results of Year 1 and Year 5 students

Myth	z	p	r
Student academic achievement is improved when teachers give students control over how they complete tasks.	-.990	.32	.12
Some students have true photographic memories.	-.177	.86	.02
Generally, students use only 10% of their brain.	-.451	.65	.06
Effective teaching requires the alignment of instruction to students' learning styles.	-.622	.53	.08
Good teaching requires aligning instruction to the multiple intelligences of students.	-1.27	.20	.16
A good way for teachers to promote academic achievement is through the use of material rewards (e.g., a treasure box, treats, etc.).	-.487	.63	.06
Student motivation is influenced by their genetics.	-1.12	.26	.14
Differentiated instruction tailored to a student's intelligence type enhances student academic achievement.	-.219	.83	.03
Teachers should offer unsolicited help to students who appear to be struggling.	-.263	.79	.03
Playing classical music to infants increases their intelligence.	-.386	.70	.05
Students will be more motivated to complete an easy task than one they perceive to be more difficult.	-.471	.64	.06
Academic achievement increases when teachers present material in the student's preferred learning style.	-.321	.75	.04
Academic achievement is enhanced when teachers address the multiple intelligences, such as naturalistic, musical, spatial, and intrapersonal intelligences.	-.239	.81	.03
Academic achievement is improved when instruction is customized for left- and right-brained learners.	-.274	.78	.03
Students preoccupied with grades have inferior learning outcomes.	-.049	.96	.01

Results[i]

Descriptive statistics were generated for individual survey items for both Y1 and Y5 students. These results are presented in Table 1. As noted, responses were collected using a six-point Likert-scale from 1, indicating strong disagreement, to 6, which indicates strong agreement. As such, responses ≤ 3.0 roughly reflect strong to low levels of disagreement, while ≥ 3.0 represent increasing levels of agreement. As can be seen, both Y1 and Y5 participants generally endorsed the statements as being true, with higher degrees of agreement on items related to multiple intelligences and learning styles, and lower degrees of agreement with items related to motivation and other myths.

To test whether there were any significant differences between Y1 and Y5 participants' level of agreement across the items, the average responses for participants across all items was compared using a Mann Whitney U test. The results indicated no significant difference with a very small effect size between the average agreement level of Y1 ($M = 4.30$, $SD = .45$, $Mdn = 4.27$) and Y5 students ($M = 4.33$, $SD = .47$, $Mdn = 4.33$): $z = -.198$, $p = .84$, $r = .03$). To examine if any significant differences existed across the individual test items, further Mann Whitney U tests were carried out. These results also indicated no significant differences in levels of agreement with small effect sizes across all survey items. These data can be seen in Table 2.

Interview data[3]

In contrast to the questionnaire data, several themes as well as differences amongst the themes emerged between the Y1 and Y5 students during the post-survey interviews.

First, both Y1 and Y5 students expressed surprise that the statements were myths. Overall, the Y1 students expressed mild surprise that all of the statements were myths. In particular, the Y1 students expressed surprise and disbelief regarding statements related to learning styles and/or multiple intelligences, and the need for teachers to cater to students' learning styles and allow students to study using their preferred method:

- "I believe it is beneficial that teachers present material based on students' preferred learning styles" ~Shannon Y1
- "If students are forced to change their learning styles, the originally positive outcome will turn to a negative one" ~Jenny Y1

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[3] All data presented here has been anonymized using pseudonyms.

The Y5 students also expressed surprise that the statements were false, in particular focusing on the statements related to learning styles and multiple intelligences, often citing their own experience as part of their teaching practicum, or own experience as learners, as evidence:

- "I adjust my teaching, including my materials, according to the way they learn…it does work for me. It is just from my observation…that one surprises me because I have actually tried it and it works for me" ~ James Y5
- "I do believe there is such a thing because I am a visual learner. If someone applies audio learning methodology to me, I will not learn as much as I do in visual learning" ~Amanda Y5
- "Oh, yes! The fourth statement is surprising because I think every student has their own style. They can be visual learners, kinesthetic ones, etc. I really believe that if we instruct students according to their learning styles, such as providing visual aids for visual learners, they can learn better" ~Frank Y5
- "I believe that if I present material in the student's preferred learning style, they will like my teaching and learn something from it. Therefore, their academic achievement will increase" ~Kim Y5
- "When I present material in the student's preferred learning style my students will listen to me during my lessons" ~Leigh Y5

It is also noteworthy that many of the Year 5 students seemed to express great certainty as to the veracity of their beliefs, by modifying their statements using words such as "really", "do", and "of course":

- "I believe that every student has their individuality and of course they have multiple intelligences" ~Kristy Y5
- "I do believe there is such a thing because I am a visual learner. If someone applies audio learning methodology to me, I will not learn as much as I do in visual learning" ~Amanda Y5

Others expressed doubts as to the veracity of the statements being false, saying that it might be due to the context and what is true or false in one context might not be so in another.

- "I guess it depends on the sample…from a top or lead school and I had taught them, I would have actually said that all these were false, but you never know. However, since I

am teaching in a school where students have low motivation, disciplinary problems, and do not study, it is a completely different story" ~James Y5

As for the reason why teachers should cater to learning styles and multiple intelligences, Year 1 and Year 5 students appeared to suggest that by doing so the lessons would be of more interest to the learners and the teacher would be able to cater to a larger number of students:

- "Based on my past experience, if the teacher actually used the one that students liked, they would be attracted and learn better afterwards" ~Constance Y1
- "From my experience as a teacher teaching in front of a class, I tried to evoke students' interest and adjust my teaching to their preferred learning styles…if I do not use their preferred learning styles, they may lost interest in my class or hate me, saying things like "her class is very boring" or "why does she talk like that?" after the lesson, behind me" ~Rebecca Y5

When asked why these myths are widely believed, both Year 1 and Year 5 students pointed to the fact that these statements are often repeated as truth both socially and across the educational sector.

- "People often keep repeating the statements although there is not direct, scientific data proving them to be true. People believe what they normally say to be the truth" ~Kendall Y1
- "Because of the information we have received from the internet or other social media" ~Constance Y1
- "I always hear the schools saying that we promote multiple intelligences" ~Lucie Y1
- "I have heard from some mothers that playing music to infants can help stimulate their brain development" ~Andrea Y5

At this stage, the semi-structured interview questions differed slightly for Y1 versus Y5 students. Y1 students were asked if they expected these "myths" to be discussed/addressed during the upcoming coursework as part of the B.Ed. program in which they were enrolled. Overwhelmingly, the Y1 students responded in the affirmative. Many of the Y1 students then pointed to the fact that such instruction is necessary given that they, as educators, would be expected to cater to students' learning styles, and that they would need to be able to justify their reason for not doing so:

- "Students in [local context] expect the instructors, educators to be doing this. If we discuss the reason behind why it is not true, we are able to tell them the reason and explain it to them" ~Claire Y1

In contrast, the Y5 students were asked if these "myths" had been taught / covered as part of their coursework to date. Although one of the year 5 students remarked that none of the statements had been touched on during their studies, the remaining students all commented that some, if not all, of the topics had been covered during their studies.

- "[Left-brained versus right-brained] was discussed in the psychology course when I was in Year One. However, they just taught us what it means by left- and right-brained learners. They did not teach us the pedagogical way of dealing with or teaching them" ~Amanda Y5
- "I think almost all of the statements have been talked about by our professors and instructors… for example, when I was taking the educational psychology course, I remember that this statement was taught as playing classical music to infants increases their intelligence. Also, there are some research on why listening to classical music can make you intelligent" ~Miranda Y5
- "There was a course related to different types of learners. As I have mentioned, one kind of learners is visual learners. The tutors said visual learners rely much more on visual aids" ~Frank Y5

In addition, some of the comments from Y5 students also suggested that they were encouraged to incorporate these myths into their teaching practice:

- "we have been taught about audio and learners and visual learners a lot. That is why I think this is true. I remember we learnt in some courses that if students are visual learners, then you do visual learning. If they prefer listening, then you do listening" ~David Y5
- "I remember that a tutor told us that a student good at memorizing words or numbers is a left-brained learner while one strong on remembering pictures or images is a right-brained learner. The tutor said that if I identify my students as being good at mathematics and logics, I should use more theories and graphics such as tree diagrams to teach them the language. If students are more sensitive to images and are creative learners, I should use

more pictures and images to assist their learning" ~Suzanne Y5

- "We were taught that different students have different learning styles. For students who prefer to see or watch something, we can provide them with some visual aids" ~Ann Y5

Discussion

This study examined the beliefs of pre-service teachers regarding a number of commonly held myths and misconceptions about teaching and learning. Quantitative survey data indicated that both student teachers in their first and fifth year of study generally endorsed many myths as being true, and suggests that a) students enter the teaching training program with misconceptions about teaching and learning firmly in place, and b) that these misconceptions do not change over the course of a 5-year teacher training program. Qualitative analyses provided evidence that belief in these myths might be perpetuated and entrenched via the expectations of stakeholders, such as principals, parents, and students, as well as the content, training, and mentoring as part of the pre-service teacher training program.

Regarding the quantitative data in particular, belief in educational myths appears to be prevalent across both Y1 and Y5 students, with the students generally endorsing myths related to learning styles and multiple intelligences more highly than others. This finding is in line with similar research, which has reported similar levels of endorsement in neuromyths among pre-service teachers in different teaching and learning contexts (e.g., Kim & Sankey, 2018). Dündar & Gündüz (2016) also reported that participants indicated greater degrees of endorsement towards learning myths related to learning styles and hemispheric orientation, a result which aligns with the data of this study.

Although no statistically significant differences emerged in the quantitative data between the Y1 and Y5 participants in the study, the qualitative results provided a greater degree of insight into the beliefs of the two groups. First, Y1 students expressed surprise when confronted with the fact that all of the statements were educational "myths". The Y1 students attributed their belief in these myths to the prevalence of these beliefs throughout society and the popular media. The Y5 students appeared to show greater surprise, citing the prevalence of the myths throughout society as well as being explicitly taught throughout their teacher training. What is particularly troubling is that the Y5 students' comments appear to indicate that not only are the myths being explicitly taught as part of their formal coursework in the B.Ed. program, but that the students are being instructed to model their teaching practice based on these myths. Given that teaching methods based on myths such as learning styles has been shown

to potentially be detrimental to learning (Rogowsky et al., 2015), such training could have negative effects on future generations of students.

Although the participants in this study did report that "edumyths", such as learning styles, were an active part of their undergraduate curriculum, it is worth highlighting that a limitation of this study is that it did not collect direct evidence as to the content of the courses these participants were involved in, such as syllabi, lesson plans, teaching materials, etc. Further, the current study did not include the voices of the faculty members who teach these courses. As such, caution is warranted regarding the veridicality of the participants' reports of the course content. It is possible that the participants' responses might have been influenced by social desirability bias, in other words, they were providing the information that they believed the researchers were interested in. A further possibility is related to the nature of beliefs, in particular that the misconceptions examined in this study are so deeply entrenched that they are not conducive to change (Borg, 2006). Another factor to consider is that it is possible the participants perceived any new information as supporting these beliefs, such as via confirmation bias. Therefore, future research might address this limitation by triangulating data from multiple sources.

Conclusion

By way of conclusion, we would like to highlight a few limitations of the present study as well as its potential implications. One key limitation of the present study is that it is cross-sectional, rather than longitudinal. A longitudinal investigation, in particular one that collects both quantitative and qualitative data over several time points, might provide greater insights into the development of beliefs over the course of a training program, and the effectiveness and durability of any effects that might arise from interventions aimed at reducing/eliminating belief in targeted educational myths.

Another limitation of the current project relates to its external validity, i.e., generalizability, in that the data were collected from participants enrolled in a single teacher education program within a single university. However, given the high-profile nature of the university and its emphasis on evidence-based teaching and learning, the results point towards a larger problem in questioning the degree that evidence-based programs are, in fact, evidence-based. Despite lip-service to evidence-based teaching and learning, myths and misconceptions may continue to be broadly promoted among teacher training programs. This is, perhaps, the clear takeaway from this study: although one might expect a teacher training program to have a positive effect on students' understanding of effective teaching and learning practices, the evidence here

suggests that this is not the case, at least in the particular context in which this study took place.

Despite concerns about the generalizability of this study, the results should raise flags as to what is currently being taught as part of teacher education programs. Administrators interested in the learning sciences might ask what quality assurance measures are in place to ensure alignment between educational curricula and the scientific literature. Given concerns that even teacher education programs may lack the faculty to carry out such reform (van Dijk & Lane, 2018), a widespread, concerted effort may be needed to root out course materials that blatantly promote educational myths, revamp curricula, and, crucially, re-train faculty.

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Appendix
Protocols for Interviews for Y1 and Y5 students

Y1 Students Interview Protocol
Protocol:
    1. Provide the interviewee with the list of statements to read over.
    2. Tell the interviewee that all of these statements are myths about learning.
    3. Go through questions/try to get students to expand on their answers where possible.

Question 1: Are you surprised by the fact that these are all false? Why/why not? Which statements in particular surprise/don't surprise you? Why do these/don't these surprise you?

Question 2: Why do you think so many of the survey respondents indicated that they believe many of these statements to be true?

Question 3: Do you expect that any of these statements will be discussed in your teaching training courses here at [university]? Which ones? Why?

Year 5 Students Interview Protocol
Protocol:
    1. Provide the interviewee with the list of statements to read over.
    2. Tell the interviewee that all of these statements are myths about learning.
    3. Go through questions/try to get students to expand on their answers where possible.

Question 1: Are you surprised by the fact that these are all false? Why/why not? Which statements in particular surprise/don't surprise you? Why do these/don't these surprise you?
Question 2: Why do you think so many of the survey respondents indicated that they believe many of these statements to be true?
Question 3: Were any of these statements discussed in your teaching training courses here at [university]? Which ones? In what way were they talked about? (i.e., what did the lecturer say/how did the course content cover these statements)

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[i] Partial preliminary results of this study are reported as research in progress (Rogers & Cheung, 2020)