

Research Space

Journal article

Measuring the effectiveness of virtuous pedagogy: a quantitative study of the What if Learning approach in Church of England schools

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1 Article

2 **Measuring the Effectiveness of Virtuous Pedagogy: a**
3 **quantitative study of the *What if Learning* approach**
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11 **Abstract:**

12 *What If Learning* is a pedagogical approach that allows teachers to deliver traditional content, as
13 prescribed by national curricula, while at the same time promoting character virtues fundamental
14 to Christian ethos. It encourages teachers to present topics from a different perspective which shapes
15 understanding through the lenses of cooperation, coaching or hospitality. *What If Learning* reframes
16 “how” to teach rather than changing “what” to teach. This study tested the effects of a three months
17 long *What If Learning* intervention which reshaped the delivery of lessons to reflect values of
18 hospitality and welcome in twenty schools across five dioceses in the United Kingdom. Four
19 hundred and seventy-four pupils and 198 of their teachers filled in online surveys presenting
20 implicit and explicit measures of intergroup attitudes adapted from the existing literature to reflect
21 our operationalisation of tolerance as the Christian virtue of hospitality or welcome. Data were
22 collected from all participants at three time points: before and after the intervention and then again
23 three months later. Analyses of variance revealed a pattern of answers largely supportive of the
24 positive effect of the proposed pedagogical approach, although not always consistent with the
25 hypotheses. Teachers report overwhelming positive effects of the intervention on several aspects of
26 pupils’ behaviour and flourishing potentials. The discussion focuses on the widespread implications
27 of these findings while acknowledging the need for additional research to strengthen our
28 conclusions and promote the approach even further.

29 **Keywords:** Christian ; virtuous ; pedagogy ; hospitality ; welcome ; tolerance ;

30

31 **1. Introduction**

32 Governments, educators and major sponsors of education, have an enduring interest in the
33 moral impact of education, whether in terms of security and anti-terrorism, social benefit, or
34 philosophy of education. This is commonly expressed through national values initiatives and, in the
35 case of school sectors sponsored by religions, religious ethics. Education has become the site of
36 attempts to counter extremism. Religion is cast as a security threat [1,2,3]

37 In England, over 1.8 million children are educated in publicly funded schools of a religious
38 character, the vast majority of which are Christian. These schools negotiate their identity and ethos
39 to satisfy the interests of government and public accountability, as well as their religious foundation.
40 They seek a settled understanding of what educational ‘success’ in moral matters is.

41 Schools in England are directed by the UK government to promote character education in line
42 with British values [4]. The choice and expression of these values are a matter of considerable debate.

43 In the UK there was a change from values expressed in human rights language to a more nationally
44 framed historical and political articulation [5]. One area of debate has been around the inclusion of
45 tolerance, identified by the DfE as a fundamental British value. This attracts considerable debate and
46 political controversy because of difficulties around intrinsic value [6,7]. Philosophically there is a
47 need to distinguish that which is necessary to tolerate and that which should not be tolerated.
48 Politically the concept is tainted by overtones that position those who are 'other' as needing to be
49 tolerated by the majority. A further area of discussion more broadly in moral education is the impact
50 of attempts within the curriculum to shape or influence pupils' moral development, as opposed to
51 other factors external to school interventions.

52 *What If Learning* is a virtue led approach to pedagogy developed by an international team of
53 academics and educators, which focuses attention on the learning experiences that teachers design
54 rather than the content of the curriculum that they teach as the significant feature for Christian
55 Education [8,9,10]. It can be used by any subject teacher with any age group. At its heart are two
56 questions: 'what vision of being human frames the teacher's design of learning activities?' and 'what
57 do pupils imagine they are doing when learning subject content?' The approach is now widely used
58 in Church of England schools, where it is particularly linked to character education [11]. This area
59 subsequently become a core feature of education policy as the 2019 Ofsted inspection framework
60 prioritised curriculum intention and some believe this is a result of influence from the Church of
61 England education policy which in turn was influenced by *What If Learning* [12].

62 Church of England schools are an established part of the state-funded education system.
63 However, as the demographics of England change, with less people attending church and more self-
64 identifying as non-religious, this funding has become increasingly controversial [13]. One of the
65 criticisms is that such schools segregate children from contact with those of other faiths and cultures
66 and that, by implication, they nurture tribal, 'othering' attitudes and do not promote community
67 cohesion or prepare children to embrace the religion and belief diversity characteristic of modern
68 democracies. In this particular project, the research team wanted to find out whether *What If Learning*
69 could contribute to promoting more inclusive attributes amongst pupils attending Church of England
70 schools.

71 Tolerance may be a practical operating principle in terms of the government's promoted British
72 values, but it is not an obvious moral virtue making association with character education difficult or
73 controversial, leaving dilemmas for school leaders and teachers in how to implement a counterseal
74 value in their curriculum. This research offers insight into how policy in education can be reframed
75 by communities to counter contextual or intrinsic limitations. It provides a road map for the
76 appropriation of values education from national politics to serve community interests. The research
77 team focused on the two pairs of attributes 'tolerance and respect' and 'neighbourliness and
78 community spirit' in the DfEs' list of desired attributes. They set the following research question:
79 'Can *What If Learning* support teachers of diverse subject specialisms in promoting the development
80 of the attributes of tolerance, respect, neighbourliness and community spirit in Church of England
81 schools?' During the project set up, questions were raised by the participating schools about the idea
82 of tolerance. Concern was expressed that it could be interpreted as a grudging response to the other
83 and the suggestion made that a more welcoming response was required in a Christian context. The
84 virtue of hospitality is a theme of increasing significance in Christian theology [14,15] and it was,
85 therefore, decided to use this as the core virtue for promotion through the project. This reframing of
86 an educational objective from a Christian theological perspective is fundamental to the *What If*
87 *Learning* pedagogy. The notion of hospitality was then analysed so that the teachers participating in
88 the project would have a clear idea of the different attributes that could be developed, with particular
89 emphasis given to what is entailed in combatting 'othering' attitudes to those we perceive as different
90 from ourselves. Examples are:

- 91 • humility
- 92 • being good listeners
- 93 • being able to explain why certain things are important to others
- 94 • being good welcomers

- 95 • offering friendship to those they perceive as somehow different from themselves
- 96 • expressing their own views with respectful conviction
- 97 • being able to adapt to unfamiliar circumstances in appropriate ways
- 98 • the desire and ability to promote the common good.

99 This was not intended as an exhaustive analysis of the Christian understanding of the virtue of
100 hospitality, but rather a guide for the participating teachers in deciding how that virtue might be
101 interpreted in the context of Church of England schools seeking to promote inclusive rather than
102 othering attitudes in their pupils. Twenty participating schools were recruited and introduced to
103 *What If Learning*, with an explanation of the virtue of hospitality and help in designing a learning
104 intervention with some illustrative examples. Teaching interventions took place between September
105 and December 2015. In planning these, teachers were asked to use three questions that reflected the
106 components of the *What If Learning* approach:

- 107 • How can a Christian understanding of hospitality provide a different way of seeing a lesson/unit?
- 108 • How could the pupils engage with this new way of responding to diversity through the learning
109 experiences teachers design?
- 110 • How could teachers change their own practices to create a hospitable response to diversity.

111 The hypothesis behind *What If Learning* is that by using these questions in planning learning
112 activities, teachers can introduce simple changes to the standard curriculum that encourage
113 perspective taking, questioning life's purpose, enhancing appreciation and gratitude and other
114 similar dispositions that result in greater display of the various traits characteristic of hospitality.

115 The qualitative dimension consisted of visits to twelve of the schools for extended interviews
116 with the participating teachers. Each school also submitted a portfolio of work and these were
117 reviewed alongside the interview data. Details of this qualitative work are published in three reports
118 [16,17,18,19]. The rest of this article describes the quantitative dimension of the project where we
119 sought to develop a methodology that provided reliable measure of the development of the virtue of
120 hospitality.

121 2. Social Psychological Perspectives

122 Hospitality, as defined and operationalised so far, has a very strong theme of positive
123 interpersonal and intergroup relations running through it. There is a wealth of psychological
124 perspectives that has focused on the theoretical and empirical understanding of intergroup relations,
125 in-group and out-group bias, prejudice and stereotyping [20,21,22]. It was, therefore, decided to draw
126 on this literature as it resonated with our conceptualisation of hospitality as the opposite of in-group
127 bias and prejudice, the negative phenomenon that we called 'othering'. The theoretical construct of
128 *Social Identity Complexity* [23,24] and the empirical approach known as the *Ambiguous Situation* [25]
129 were chosen as two examples of research methodology that might illuminate our research question.

130 Given the difficulty usually associated with the measurement of socially and ethically complex
131 and loaded attitudes (such as those representing the components of hospitality), we drew from the
132 previously discussed psychological literature in an attempt to measure attitudes in an indirect way
133 using implicit tools. First, Social Identity Complexity refers to the nature of the relationship between
134 the various group identities that an individual might hold. A single social identity is that part of one's
135 self concept that comes from membership of a specific social group and that inclines one to define
136 oneself in term of such group membership (such as being Christian, British, female or even a Leeds
137 United supporter) and identify with the associated characteristics shared by members of that group.
138 People however hold several different social identities at the same time. Some of them refer to groups
139 that are ascribed, such as gender and nationality while other represents chosen groups, such as the
140 football/soccer team one decides to support. Others may be a complex mix of assigned and chosen,
141 for example the faith or belief system a person follows. These different social identities, however, do
142 not exist in isolation from each other. While some have a clear relationship with each other, where
143 for instance one is the superordinate level of the other (as in the case of Christians and Church of
144 England social identities, where all Church of England members are presumably Christians), others

145 might just partly overlap. For example, some British people belong to the Church of England but not
146 all of them do; the two social identities overlap but not completely. In general, when an individual's
147 social identities are independent (which is to say they do not overlap) we can say that the resulting
148 Social Identity Complexity is high. Empirical research has supported the idea that higher Social
149 Identity Complexity promotes positive intergroup relations and increases social tolerance [26]. This
150 is based on the reasoning that individuals with higher Social Identity Complexities are aware of the
151 differences between individuals, they are able to experience for themselves the implications of
152 holding numerous and separate identities and are therefore more willing to empathise with different
153 perspectives and to be flexible, all necessary requirements of a hospitable attitude. It was, therefore,
154 postulated in this study that the development of hospitality would be associated with an increase in
155 measured Social Identity Complexity following an intervention to promote it using *What If Learning*
156 [23, 27].

157 A second tool for measuring intergroup attitudes that has been well received when dealing with
158 participants of younger age is the Ambiguous Situation Task [25]. According to the empirical
159 evidence available, children display different intergroup attitudes by choosing from a series of
160 statements the one which best describes their perception of what is represented in a drawing that
161 depicts two children in an ethically ambiguous situation. We used four such pictures (see appendix
162 1). The advantage of such implicit measures, when compared with the alternative Implicit
163 Association Tests [28], is that the respondent is encouraged to refer to a naturalistic setting which
164 encompasses a real life social situation [25]. They are also not just self-reporting their own attitudes,
165 an approach which raises questions about the accuracy of the judgments they make, but are rather
166 revealing their implicit attitudes through their response to an everyday situation.

167 Finally, taking the opportunity to gather further information about the effectiveness of *What If Learning*
168 *Learning*, we also administered surveys with the teachers delivering the intervention. We monitored
169 teachers' attitudes towards the intervention itself, the support received during the intervention and
170 their perception of its effectiveness.

171 The two sub-questions we investigated were:

- 172 • Whether the intervention using the *What If Learning* approach promoted any change in pupils in
173 regard to the development of the virtue of hospitality as defined by the project, namely as the
174 disposition to respond in a more open and positive way to those that they might perceive as
175 different from themselves.
- 176 • Whether the intervention promoted any changes in teachers in terms of their confidence and
177 ability to engage in character education using the *What If Learning* pedagogy as part of the mission
178 of a Church of England school.

179 3. Method

180 There were three data collection points. A baseline questionnaire was administered before the
181 teachers began their classroom interventions in October 2015; a second version of the questionnaire
182 was administered after the intervention finished in December 2015. During the intervention period
183 teachers designed classroom work that sought to promote the Christian virtue of hospitality, having
184 been introduced to the project by their diocesan adviser through bespoke training. No further
185 training was given in the following weeks. A final data collection took place at the end of the
186 academic year in July 2016, when the teachers had had several more months of using the approach
187 with their classes.

188 Data were collected from 9-13 year old pupils in the 20 participating Church of England schools.
189 At the first data collection point, 474 pupils completed a valid questionnaire giving the baseline; this
190 number dropped to 420 after the intervention at data collection point 2 (an 11% drop out rate), and
191 245 at data collection point 3 (a 49% drop out from time 1 and 42% drop out from time 2). Participants'
192 numbers are not reported for individual analyses but these of course vary from time to time,
193 depending on how many participants provided valid answers to each question. Of the 245 pupils
194 who completed all three waves of data collection: 47.8% were female, 51.4% male and 0.8% were not
195 sure; 90.6% were white, 2% were black, 5.7% were Asian and 1.7% were Indian; and 71.4% said they

196 belonged to the Church of England whereas 28.6% said they did not. We also collected data from 198
197 teachers at baseline; 92 of them also provided data at collection point 2 (a 54% drop out rate) and then
198 71 at collection point 3 (a dropout rate of 64% from time 1 and 23% from time 2).

199 Each school made its own decision as to exactly when to complete the questionnaire depending
200 on the project schedule they had agreed with their adviser. For all data collection times, the schools
201 made arrangements so that children had access to computers and were given the URL address to
202 complete the online questionnaire, which was supported by the Qualtrics platform containing all the
203 relevant measures [29]. Pupils were only allowed to take part in the study if the school office had
204 received a signed consent form from the parent or guardian. The questionnaire was explained to the
205 pupils via a written document provided by the researchers thus ensuring the same information was
206 presented consistently to all pupils across the 20 schools. Similarly, teachers were supplied with a
207 URL address for the teachers' version of the online questionnaire, but completed it in their own time.
208 All participants were assured of their anonymity and the voluntary nature of the study at each data
209 collection point on the first page of the questionnaire. Every pupil was given a randomly generated
210 ID code that was allocated by their school office thereby ensuring their anonymity in the research.
211 Participants were also assured that they could withdraw from the study at any point.

212 The pupils' questionnaire included the following sections:

- 213 • A page where the study was briefly described and pupils were asked if they belonged to the
214 Church of England or not and about their gender and their ethnicity.
- 215 • A measure of Social Complexity. Participants were asked to rate the overlap between each couple
216 of identities provided, for instance, how many British people were also Christians or how many
217 Christian people were also Female. The questions referred to three social identities (British
218 Nationality, Christian religion, and gender identity) and all possible permutations and orders for
219 a total of six questions per gender group (Qualtrics presentation filters were used to ensure that
220 Female participants, for instance, were presented with Female relevant questions only). The
221 scoring was done by coding the answers with a scores ranging from 1 to represent maximum
222 overlap and therefore low complexity all the way up ("all") to 5 to represent minimum overlap
223 and therefore high complexity ("none"). Participants' six answers were then averaged so that the
224 final score associated a higher level of social complexity with a higher total score because it was
225 more representative of independent social representations, that is groups that are not perceived
226 as necessarily overlapping.
- 227 • A measure of intergroup attitudes using the Ambiguous Situation measure. For each of the four
228 pictures (see Appendix 1), children were asked to rate how bad or good the behaviour performed
229 by the 'perpetrator' was (using a sliding scale represented by a smiley/frowning face). Prior to
230 the questionnaire administration, the research team had identified the most neutral of the four
231 statements as scoring 1 and the most negative one as scoring 4. A higher score represented more
232 willingness on the part of the pupil to interpret the behaviour in the picture negatively and a
233 greater disposition to make negative inferences about the character's behaviour when there
234 would have been the option to see it as positive, being an ambiguous situation. Children were
235 also asked to choose what they thought the 'perpetrator' would do next from a list of four
236 behaviours. The final question then asked pupils to rate how good or bad such an expected
237 behaviour was.
- 238 • A matrix question where each pupil rated how good they thought the children in their class were
239 in relation to a series of seven behaviours characteristic of hospitality such as - making others feel
240 at home; being good listeners; understanding someone else's feelings. For this a scale ranging
241 from 0 (very poor) to 100 (excellent) was used.

242 The baseline teachers' questionnaire included the following sections:

- 243 • A question asking how familiar they were with the *What if Learning* approach;
- 244 • A question asking how often their lessons focused on character development;
- 245 • A matrix question asking how often pupils in their class displayed evidence of each of the 11
246 behaviours used to conceptualise hospitality in this project. This section contained a higher

247 number of behaviours and more complex wording than the pupils' corresponding section of
248 explicit attitudes measures.

249 All questions were measured on a 0 to 100 scale.

250 The collection point 2 questionnaire for teachers included all of the above, plus:

- 251 • A question asking in how many lessons the teachers had used a *What If Learning* pedagogical
252 intervention
- 253 • A set of questions asking teachers to rate different aspects of the effectiveness and impact of the
254 intervention, namely: on the way they taught other classes; on their ability to incorporate the
255 development of hospitality; on their ability to use the pedagogy effectively; on the likelihood of
256 the pedagogy influencing pupils' academic performance, learning behaviour and ability to
257 flourish.

258 The collection point 3 teachers' questionnaire was identical to that of point 2 but for one question,
259 which asked in how many lessons the teacher had used the pedagogical intervention since January
260 2016, the collection point 2 date

261 3. Results: Pupils' questionnaires

262 3.1. Social Complexity

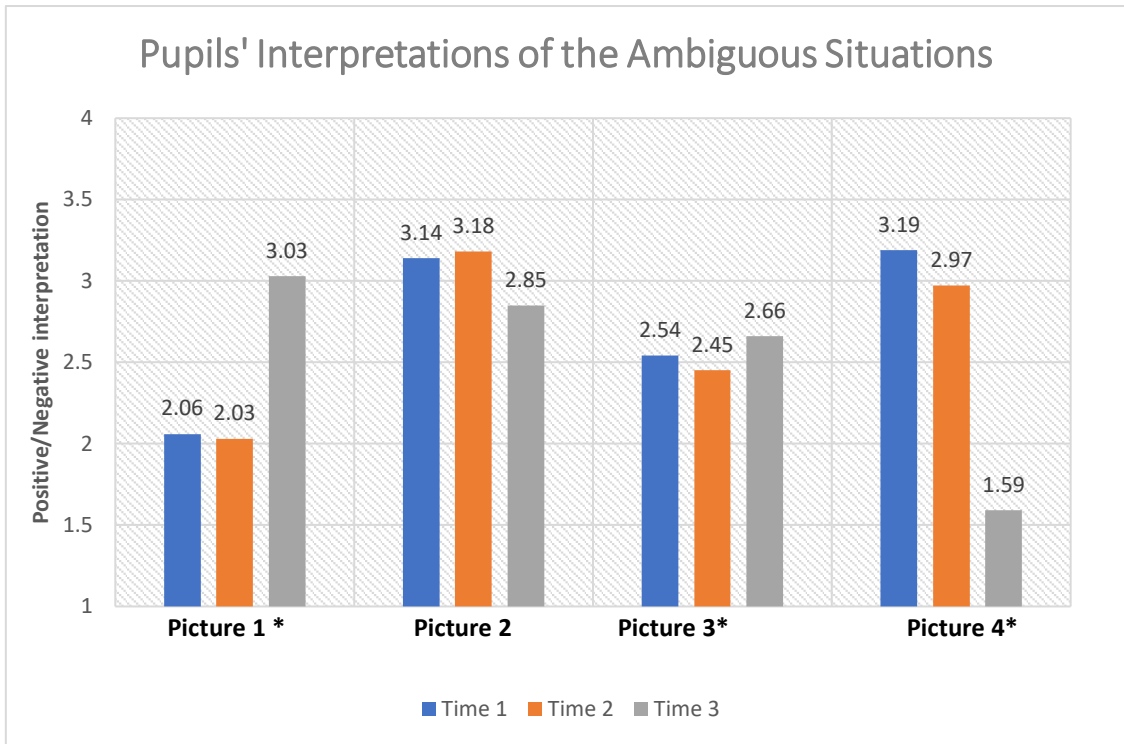
263 A one-way repeated measures anova showed a very small (eta square = .03) but significant
264 increase in the social complexity displayed by pupils at the three times points: M1= 2.89 s.d.= .59; M2=
265 2.98 s.d.= .50 and M3=3.06 s.d.= .48; $F(2,298)=4.538$ $p<.02$. The intervention seems to have encouraged
266 a more diverse conceptualisation of social identities as hypothesised. This moreover seems to
267 continue even after the completion of the intervention period. Our hypotheses also formulated that
268 this increase in social complexity would be associated, that is, correlated, with similar changes in
269 levels of tolerance, both the implicit as well as the explicit ones. The reasoning was that a more
270 complex social identity would be an antecedent of changes in tolerance attitudes. This however
271 proved not to be the case. The two constructs, although change over time as a result of the
272 intervention, don't show reciprocal correlation. We therefore didn't perform any additional analyses
273 on this hypothesis. The two constructs change over time as a result of the intervention, but do not do
274 so following a pattern of association or linear correlation. We did not therefore report further on this
275 aspect of the research.

276

277 3.2. Ambiguous Situations

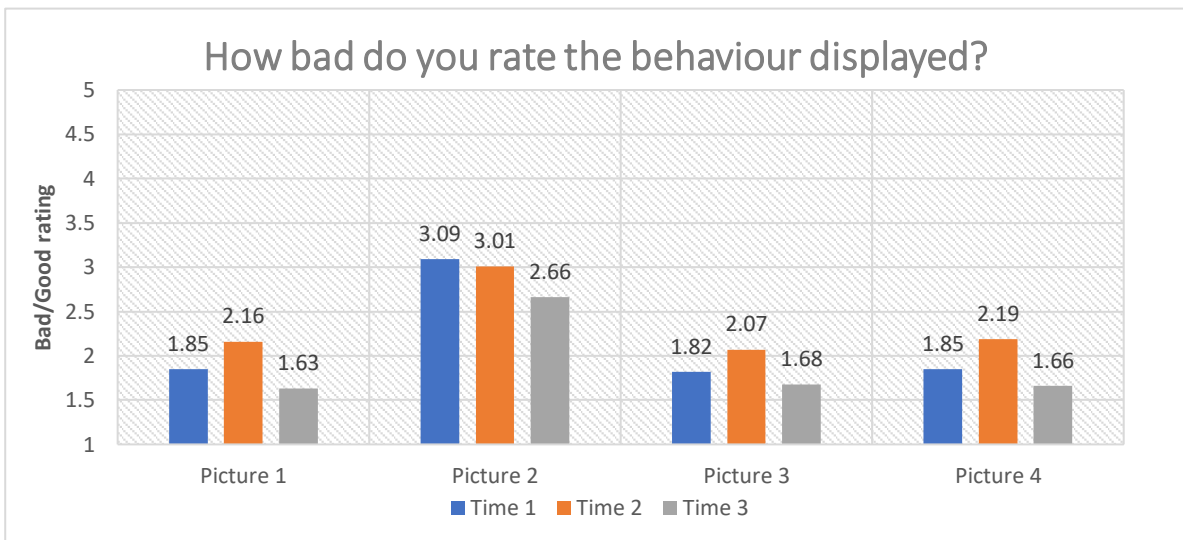
278 When deciding how to interpret the ambiguous behaviours displayed in the four scenarios
279 (appendix 1), we can observe some small but statistically significant changes taking place over time
280 (Figure 1). These were tested using Friedman's anovas. First of all, we can observe that the most
281 visible changes take place between time 2 and time 3 measurements. Pictures 1, 2 and 4 show
282 statistically significant changes over time ($p<.001$). For Picture 1 the rating is changing from the option
283 "Liz has pushed Zoe off the swing" to the option "Liz doesn't like Zoe" which we had initially
284 conceptualised as a more negative option because it is expressed in more universal terms. This would
285 imply a more negative judgement of the situation. On the other hand, Picture 2 average rating shifted
286 from "Sam has found Cody's money" to "Sam is picking up money" which is a more neutral
287 interpretation. Similarly, for Picture 4 the mean rating shifts from "Max is distracting Zac" to "Max
288 is looking at Zac" / "Max and Zac are taking a test". This is a very large and positive change towards
289 a more non-judgemental position. Of course, the nature of the behaviour displayed and the gender
290 of the children portrayed might have influenced the shift as well as many other factors.
291 Unfortunately, given the financial and time constraints of this project, we were unable to have a
292 control group to confirm the role of the intervention in this change. Interviews with the children
293 might have revealed more insights into their perceptions of the scenarios. However, the change is
294 generally encouraging and indicates some degree of effectiveness of the intervention with two of the

295 three statistically significant changes being towards a more positive assessment of the characters in
 296 the ambiguous situation



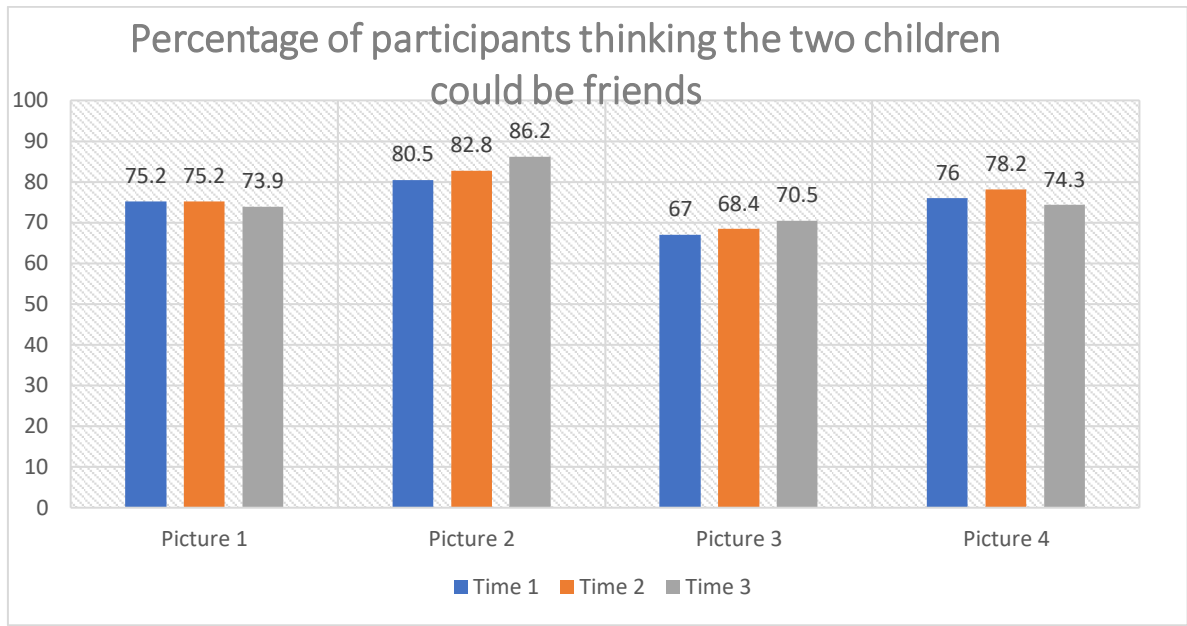
297
 298 **Figure 1.** Mean scores reported for each picture at three different time points. * Significant differences at
 299 $p < .001$

300 When asked to rate how bad the behaviour displayed in each picture was, the trends are clearer
 301 and more consistent (Figure 2): in Picture 1, 3 and 4 pupils tend to show an initial more positive
 302 outlook following the intervention. However, over time they seem to revert to their initial opinions.
 303 The trend for scenario 2 is in a more negatively judgemental direction. Only the patterns for picture
 304 3 and 4 however reach statistical significance.



305
 306 **Figure 2.** Mean scores reported for each picture at three different time points. * Significant differences
 307 at $p < .001$.

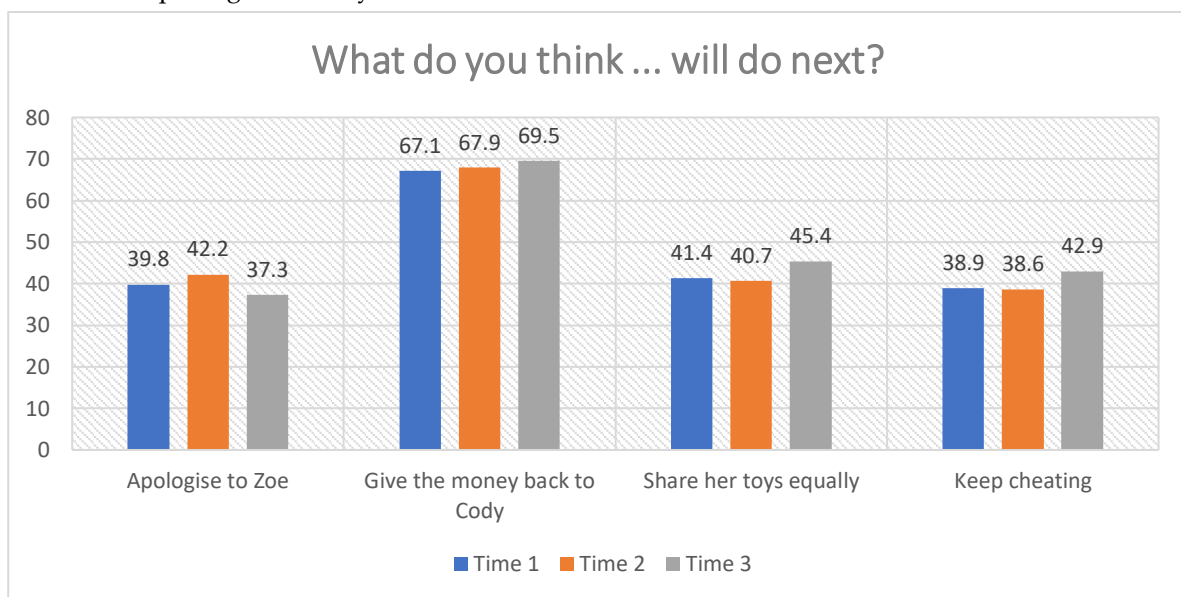
308 Overall pupils think that all children in the four pictures could be friends and the change over
 309 time is almost negligible; none reached statistical significance (Figure 3).



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Figure 3. Percentage of participants who believed the children in each scenario could be friends in future at three different time points. * Significant differences at $p < .001$.

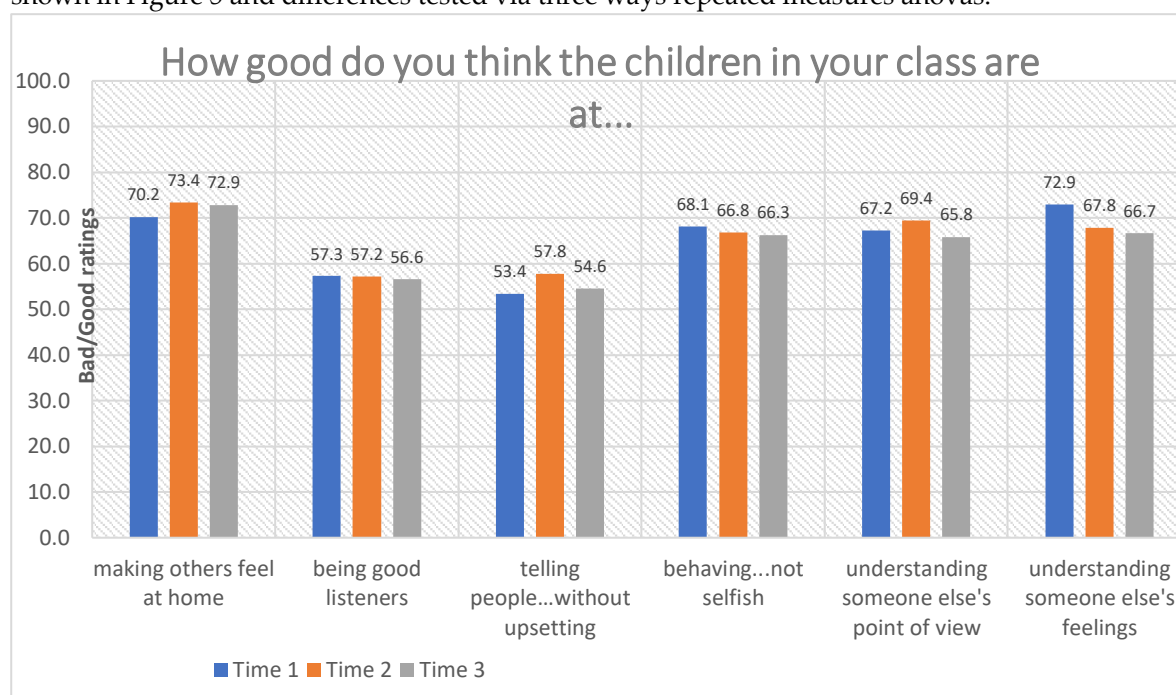
313 In figure 4, the patterns of answers to the questions “what do you think X and Y will do next”
314 are more complex to analyse and potentially they show a shift over the course of the research towards
315 a more positive outlook on three of the four pictures (1, 2 and 3). Focusing on participants who
316 completed all three questionnaires, we observe that what we rated as the more positive option is
317 usually the most frequent choice. Moreover, the percentage of pupils to choose this option increases
318 over time (picture 1 shows an increase only between time 1 and 2). For Scenario 4, however, we
319 observe a less hospitable pattern: the more negative option is the most frequently chosen and this
320 frequency choice also increases over time. Overall, we can conclude that the measure has detected
321 some very supportive attitude changes. While some of these were in the direction we expected and
322 showed a more positive interpretation of some of the pictures (Picture 4 very clear and Picture 3 less
323 strong but still in the expected direction), others showed no change or an unexpected more negative
324 interpretation. Clearly more research is needed to understand the way children react to ambiguous
325 situations depicting differently loaded behaviours.



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Figure 4. Percentage of respondent who chose the specified option at each of the three different times.

329 Finally, in order to complement the more implicit approaches to measuring development in
 330 hospitality already described, the pupils were asked to rate explicitly, on a scale of 0-100, the degree
 331 to which the children in their class were good at exemplifying a variety of behaviours associated with
 332 hospitality. Mean ratings and the corresponding bar chart for the three data collection points are
 333 shown in Figure 5 and differences tested via three ways repeated measures anovas.



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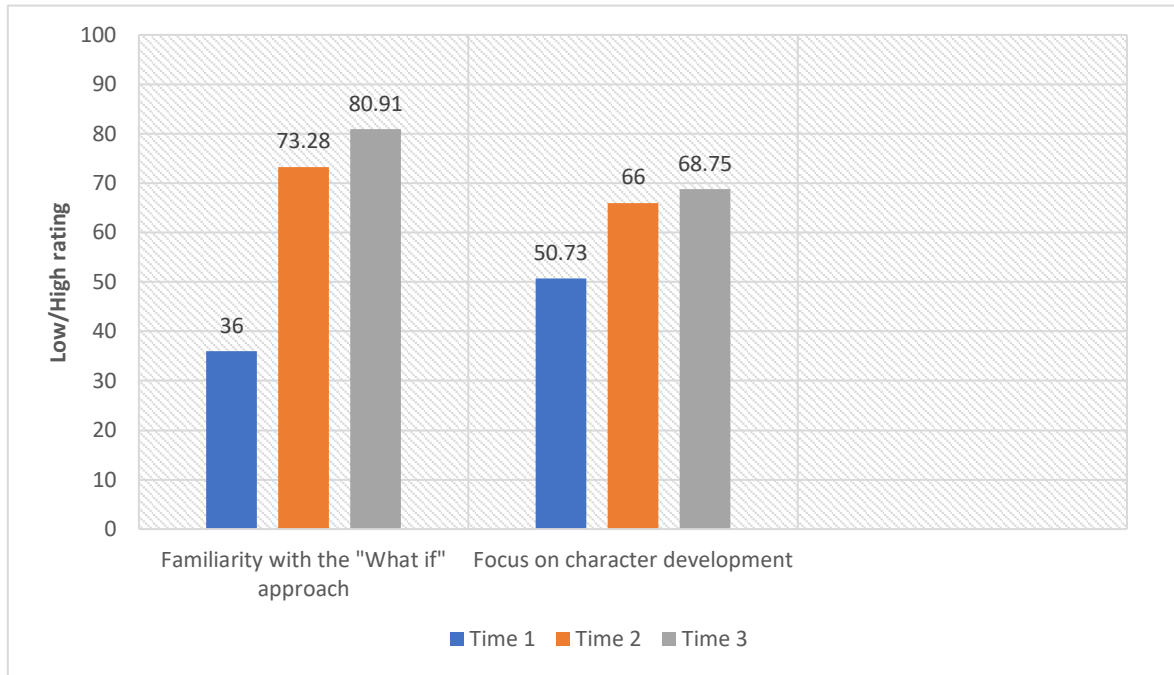
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Figure 5. Mean ratings for each of the hospitality behaviours at three different times.

336 None of the ratings show statistically significant changes over the period of the research,
 337 probably because there is a ceiling effect whereby the ratings are already quite high at collection point
 338 1.

339 4. Results: Teachers' questionnaires

340 In relation to their encounter with the *What If Learning* pedagogy, teachers reported a statistically
 341 significant increasing level of familiarity ($p < .01$), showing that even after the researchers stopped
 342 promoting the intervention period in December 2015, teachers still continued using it (Figure 6).
 343 Similarly, they reported a statistically significant increasing level of focus on character development
 344 in their lessons across the curriculum over the academic year.



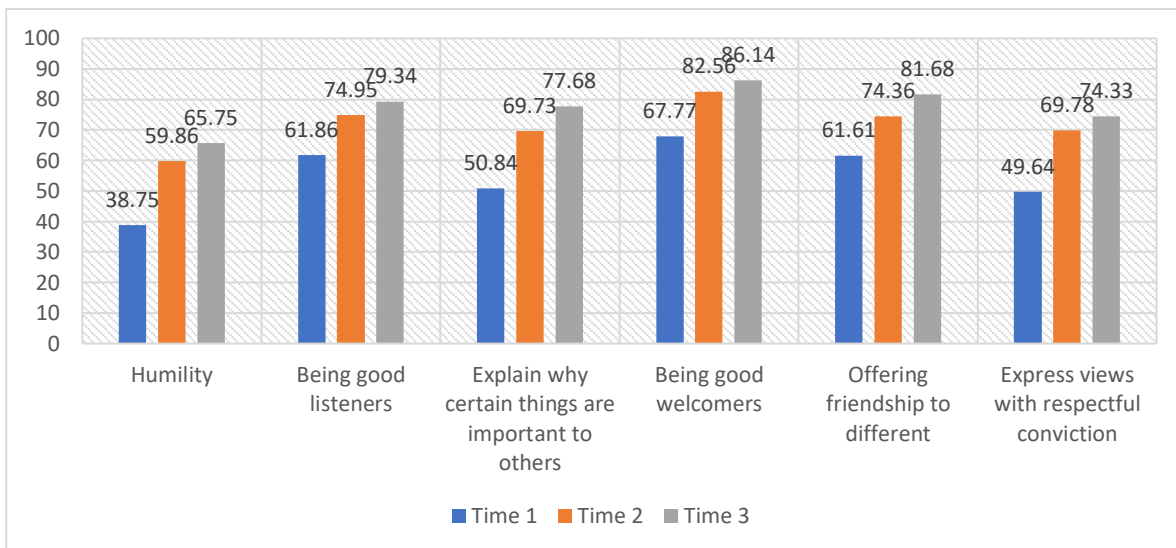
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Figure 6. Mean ratings of familiarity with the “What if Learning” approach and degree of focus of lessons on character at the three data collection points.

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The teachers were also asked to rate the frequency with which pupils in their class displayed evidence of a series of attributes associated with the virtue of hospitality on a scale from 0 (never) to 100 (all the time). Figures 7a and 7b show that there was a marked increase in their estimates from data collection points 1, 2 and 3. All differences represent a statistically significant ($p < .001$) increase in the display of the virtue in question.



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Figure 7. Teachers’ rating of degree to which each hospitality attribute is displayed.

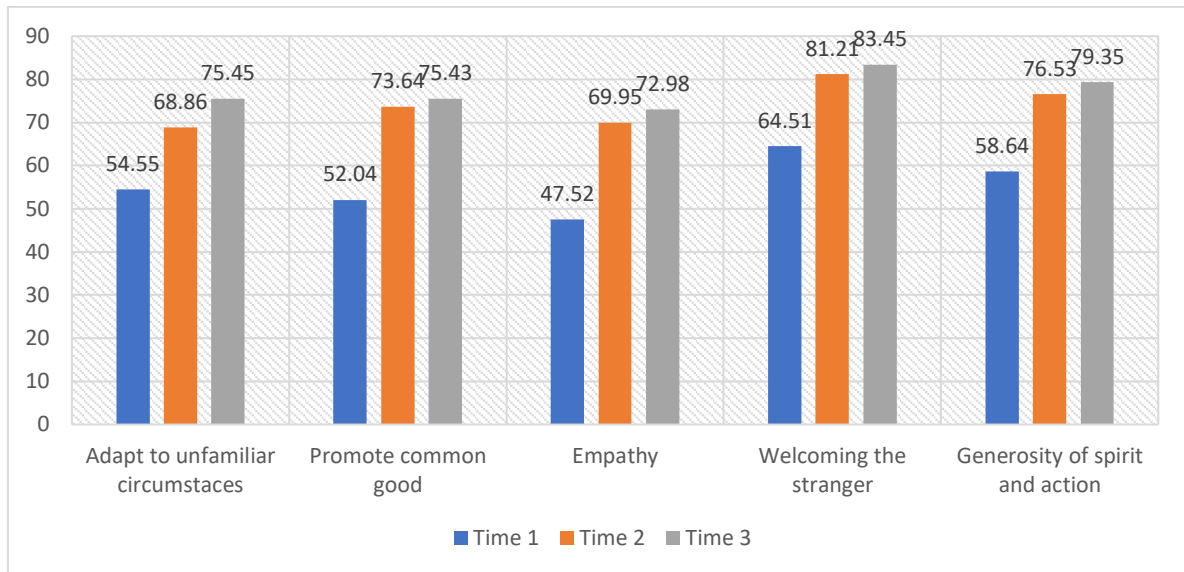


Figure 7. Teachers' rating of degree to which each hospitality attribute is displayed.

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356

357 5. Discussion

358 This article reports on the attempt to measure the development, if any, of attributes associated
 359 with the virtue of hospitality when the *What If Learning* approach to pedagogy is used by teachers in
 360 twenty Church of England schools as part of a planned intervention. This was part of a mixed-
 361 methods project where both qualitative and quantitative methods were used. In the quantitative
 362 dimension of the project reported on in this article, both explicit and implicit approaches to
 363 measurement were utilised.

364 The study drew on previous educational and social psychological literature to identify two
 365 implicit measures that test the effectiveness of the *What If Learning* intervention in fostering the
 366 development in the pupils of attitudes and behaviours associated with the virtue of hospitality. The
 367 measures of Social Complexity indicated an increase in openness to others, but there were no links to
 368 the attributes that were taken as characteristic of hospitality. However, the results from the
 369 Ambiguous Situation Tasks show that, between the baseline data collection point and collection point
 370 2 (during which teachers used the *What If Learning* approach), the pupils a) become less likely to make
 371 negative inferences about others in the ambiguous scenarios and b) generally demonstrate a more
 372 positive outlook on what future developments there might be in the four scenarios that were utilised.
 373 It is important to note that the time interval between the two data collection points was very short
 374 due to the time constraints imposed by the funder and one would not expect much change in
 375 attributes in such a short space of time. When the data from collection point 3 is added in, the
 376 positive trend is continued. The results of the explicit questions that asked pupils to rate their peers
 377 in relation to hospitable attributes neither confirmed nor discredited these findings. However, pupils
 378 were generally positive about their peers' demonstration of these attributes even though there was
 379 no statistically significant change in the ratings given over time. Finally, the unanimously statistically
 380 significant increase that the teachers reported over the period of the research in the display by pupils
 381 of all the hospitable attributes confirm the tentative indications of the effectiveness of the intervention
 382 in developing hospitable attributes that emerged from the analysis of the pupils' questionnaires.

383 The results presented here represent only the quantitative data collected. Interviews with a
 384 sample of teachers and analyses of the coursework portfolios of a sample of pupils strengthen our
 385 conclusions that the teaching intervention initiated a positive shift in perspective in our participants,
 386 both pupils and teachers [16,17,18].

387 We finish with some observations on the conduct of the research:

- 388 • In relation to the ambiguous situations, we suspect that the pupils found them of varying
 389 challenge in terms of interpreting what was happening. For example, it seems that scenario 1 was

390 actually easier to process than scenario 4. Unfortunately, given the time scales set by the funder,
391 we had no opportunity to pilot these scenarios or to develop our own scenarios. We therefore
392 used those available in the literature. It might be possible to obtain scenarios that are more
393 meaningful by involving children directly in the development phase of the measurement tools,
394 including the assignment of positive/negative scores to the options.

- 395 • Our participants were younger than those in the research literature about the Social Complexity
396 and Ambiguous Situation measures. Nor have these measures been administered before via an
397 online tool. Had there been the opportunity to pilot these measures, it is likely that adaptations
398 to our approaches would have been made to improve their quality and their ability to capture
399 change.
- 400 • A significant shortcoming of our study is the lack of a control group. We are indeed not able to
401 differentiate at all between the natural and random effects of time and those of our intervention
402 because we do not know how the same (or an equivalent sample of) pupils would have
403 developed and answered the same measures in the absence of an intervention. We were well
404 aware of this limitation from the initial stages of this research project but it was a practical
405 impossibility to recruit another 20 schools for the control arm of a more complex research design
406 given the constraints imposed by the funders' timetable. Furthermore, we suggest that
407 complementing the quantitative aspect of the data collection with a qualitative counterpart has,
408 to some degree, offset this shortcoming of the research design. Having a control group as well as
409 our qualitative data would, however, have been our ideal.
- 410 • The lack of a control group is a known limiting factor in applied research in a number of contexts
411 and this one is no exception. If we wanted to explore possible alternatives we would have to
412 consider the possibility that some of the score changes we observed are due to the fact that our
413 participants filled in the same version of the survey three times over a six to nine months period
414 and that the measures we used were rather memorable. Young children of this age could be seen
415 as particularly vulnerable to experimenter biases of a different sort. Still, the implicit nature of
416 our main two measures, identity complexity and linguistic intergroup bias, should protect from
417 such possibility. Estimating the number of people who are British while also Christian should
418 sound like a challenge more than an expectation to answer in a prescribed way.
- 419 • What cannot be excluded is that children spoke about their answers to each other in between the
420 three measurement times. It is still possible that a group cohesion pressure might have arisen
421 from such discussions and that children started to perceive the need to give more positive
422 interpretations of the neutral images presented to them.
- 423 • The strict procedures adopted to maintain participant anonymity in the collection of the
424 quantitative data meant it was impossible to explore with participants the significance of their
425 questionnaire responses. Linking these two sets of data may have provided a much richer
426 understanding of what was happening in the Ambiguous Situation tasks.

427 This research with pupils suggests that the *What if Learning* pedagogy was successful in
428 promoting the development of some, if not all, aspects of hospitality and provided a mechanism to
429 rejuvenate tainted national values within a reframed concept of Christian virtue. This conclusion is
430 fully supported by the quantitative and qualitative data provided by our teachers' sample. All the
431 teachers reported observing improvement in their pupils' ability to display behaviours characteristic
432 of hospitality. This set of results is strong and when added to the other layers of findings reported
433 here, it gives confidence that we are here observing something rather significant. Our children are
434 indeed becoming more hospitable, more welcoming.

435 **Supplementary Materials:** The *What If Learning* Website contains resources linked to the project. These are
436 available online at <http://www.whatiflearning.com>

437 **Author Contributions:** Conceptualization, Trevor Cooling and Robert Bowie; methodology, Sabina Hulbert;
438 formal analysis, Sabina Hulbert.; investigation, Trevor Cooling; writing—original draft preparation, Trevor
439 Cooling and Sabina Hulbert; writing—review and editing, Sabina Hulbert, Trevor Cooling and Robert Bowie.
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446 Appendix A

447 The four pictures used as stimuli in the Ambiguous Situation Task



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449 Picture 1.



450

451

Picture 2.



452

453

Picture 3.



454

455 Picture 4.

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